Technical Report on

CANNABIS

2025

CONSUMPTION AND CONSEQUENCES

Spanish Observatory on Drugs and Addictions
GOVERNMENT DELEGATION FOR THE NATIONAL PLAN ON DRUGS.MINISTRY OF HEALTH,

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01

OBJECTIVES

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GENERAL OBJECTIVE

The general objective of this report is to provide a comprehensive overview of the situation regarding cannabis use and its consequences, as well as its availability in the Spanish population, reviewing the characteristics of this use and how it has evolved. This information facilitates the assessment of social and public health problems associated with cannabis use and the design of policies aimed at preventing cannabis use.

From this general objective, the following specific objectives are set:

SPECIFIC OBJECTIVES

To establish the characteristics of cannabis use in different population groups:

- Prevalence of drug use in different population groups (students, general population, prison population and working population).
- Relevant use patterns
- Relationship between cannabis use and certain socio-demographic characteristics.
- Prevalence of problematic cannabis use.
- Evolution over time of the above-mentioned aspects.

To identify the consequences of cannabis use:

- Admissions to treatment for psychoactive substance use.
- Hospital emergencies related to the use of psychoactive substances.
- Mortality due to acute reaction to psychoactive substance use.
- Road accidents related to cannabis use.

To examine the availability of cannabis:

- Perceived accessibility of cannabis as expressed in surveys.
- Seizures and arrests in Spain.
- Detection of synthetic cannabinoids in Spain.

To ascertain the population's perception of various situations:

- Risk perception of cannabis use.
- Perception of the importance of the drug use problem and visibility of the problem.
- Assessment of the importance of various actions to try to solve the problem of drug use.

02

METHODOLOGY

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This document contains the most relevant information on the use of cannabis and synthetic cannabinoids published by the Government Delegation for the National Plan on Drugs (DGPNSD) from the different sources of information available to the OEDA (surveys and indicators) complemented by official sources from other agencies on specific issues. From this diversity of sources it is possible to obtain an overall vision that allows for a multifaceted analysis of both the characteristics and situation of cannabis use and the consequences derived from it.

2.1.Surveys on the use of psychoactive substances

National Surveys: promoted and financed by the DGPNSD, with the collaboration of the Autonomous Communities and, in the case of the survey in prisons, in collaboration with the General Secretariat of Penitentiary Institutions of the Ministry of the Interior, the Directorate General of Penitentiary Services of the Department of Justice of the Regional Government of Catalonia and the Directorate of Justice of the Regional Ministry of Equality, Justice and Social Affairs of the Basque Country:

- **Survey on Drug Use in Secondary Education in Spain (ESTUDES):** carried out by means of a self-administered questionnaire among secondary school students aged 14-18, every two years since 1994.
- **Survey on Alcohol and Drugs in the general population aged 15 to 64 in Spain (EDADES):** carried out by personal interview in the home population aged 15 to 64 years, every two years, since 1995.
- **Survey on psychoactive substance use in the workplace in Spain:** carried out by personal interview every 6 years since 2007, as a specific module within the EDADES survey.
- **Survey on Health and Drug Use among Prisoners (ESDIP):** carried out by means of personal interviews with the Spanish prison population, every five years since 2006. The latest available is 2022.

International Surveys in which OEDA participates, funded by the DGPNSD:

- **European School Survey Project on Alcohol and Other Drugs (ESPAD):** conducted via self-administered questionnaire in secondary school students aged 15-16, since 2019.

The following tables summarise the main methodological aspects of the surveys used for this report:

ESTUDES

GENERAL ASPECTS	
Name	ESTUDES. Survey on Drug Use in Secondary Education in Spain.
Description of the survey	Students survey (14-18 years old), carried out in schools.
Body responsible for the survey	Spanish Observatory on Drugs and Addictions (OEDA). Government Delegation for the National Plan on Drugs (DGPNSD). Ministry of Health.
SCOPE OF THE SURVEY	
Geographical scope	The survey is conducted nationwide. The results are nationally representative.
Population scope	Universe: students aged 14 to 18, enrolled in Secondary Education in Spain (3rd and 4th year of Compulsory Secondary Education, 1st and 2nd year of Baccalaureate, Basic Vocational Training Cycles and Intermediate Vocational Training Cycles).
Time scope. Periodicity.	ESTUDES has been carried out every 2 years since 1994. In 2014-2015 the data collection period was from 14 November 2014 to 8 April 2015. In 2016-2017 the data collection period was from 18 November 2016 to 8 March 2017. In 2019, the data collection period was from 4 February to 5 April. In 2021, the data collection period was from 8 March to 18 May. In 2023, the data collection period was from 5 February to 28 May.
SAMPLE DESIGN AND CHARACTERISTICS. WEIGHTING	
Sampling frame	The population of students enrolled in educational centres with 3rd and 4th year of Compulsory Secondary Education (ESO), 1st and 2nd year of Baccalaureate, 1st and 2nd year of Basic Vocational Training Cycles and Intermediate Vocational Training Cycles in Spain.
Sampling procedure	Two-stage cluster sampling, in which, in the first instance, educational centres (first-stage units) and secondly classrooms (second-stage units) were randomly selected, providing the questionnaire to all students present in them.
Weighting	Depending on the autonomous region, ownership of the centre (public, private) and type of studies (ESO, Baccalaureate, Basic Vocational Training Cycles, Intermediate Vocational Training Cycles), in order to adjust the proportionality of the sample with respect to the universe.
Sample size	In 2014, results were obtained from 941 schools and 1,858 classrooms, with a final valid sample of 37,486 students. In 2016, results were obtained from 863 schools and 1,726 classrooms, with a final valid sample of 35,369 students. In 2019, results were obtained from 917 schools and 1,769 classrooms, with a final valid sample of 38,010 students. In 2021, results were obtained from 531 schools and 1,324 classrooms, with a final valid sample of 22,321 students. In 2023, results were obtained from 888 schools and 1,992 classrooms, with a final valid sample of 42,208 students.

SAMPLE DESIGN AND CHARACTERISTICS. WEIGHTING	
Sampling error	In 2014, the maximum sampling error for a confidence level of 95.5% and p=q=0.5 is 0.6% for Spanish students aged 14-18. In 2016, the maximum sampling error for a confidence level of 95.5% and p=q=0.5 is 0.5% for Spanish students aged 14-18. In 2019, the maximum sampling error for a confidence level of 95.5% and p=q=0.5 is 0.5% for Spanish students aged 14-18. In 2021, the maximum sampling error for a confidence level of 95.5% and p=q=0.5 is 0.7% for Spanish students aged 14-18. In 2023, the maximum sampling error for a confidence level of 95.5% and p=q=0.5 is 0.6% for Spanish students aged 14-18.
FIELDWORK. COLLECTION OF INFORMATION	
Method of collection. Questionnaires	Standardised and anonymous questionnaire administered in the classroom. The interviewer remains present in the class during the entire process and collects the questionnaire once it is completed. The questionnaire is of the "self-administered" type and is completed in writing (paper and pencil) by all students in the selected classrooms during a normal class (45-60 minutes). Questionnaire available in the official languages of Spain.
Response rate	In 2014, 87% of the selected centres participated in the survey. In 2016, 91.4% of the selected centres and 99.1% of the students present participated in the survey. In 2019, 93.2% of the selected centres and 99.3% of the students present participated in the survey. In 2021, 88.7% of the selected centres participated in the survey. In 2023, 86.7% of the selected centres and 99.7% of the students present participated in the survey.
NEW DEVELOPMENTS	
Specific Modules	In 2014: a module on new psychoactive substances (NPS), a module on problematic cannabis use (including CAST) and a module on internet use (including CIUS) and other related behaviours. In 2016: a module on new psychoactive substances (NPS), a module on problematic cannabis use (including the CAST scale), a module on internet use (including the CIUS scale) and a module on stimulant substances used to enhance academic performance. In 2019: a module on new psychoactive substances (NPS), a module on problematic cannabis use (including the CAST scale), a module on internet use (including the CIUS scale), a module on gambling (including the Lie/Bet scale), a module on stimulant substances used to enhance academic performance, and a module on video games (including DSM-5). In 2021: a module on new psychoactive substances (NPS), a module on problematic cannabis use (including the CAST scale), a module on internet use (including the CIUS scale), a module on gambling (including the Lie/Bet scale), a module on stimulant substances used to enhance academic performance, and a module on video games (including DSM-5). In 2023: a module on problematic cannabis use (including the CAST scale), a module on new psychoactive substances (NPS), a module on internet use (including the CIUS scale), a module on gambling (including the Lie/Bet scale), a module on stimulant substances used to enhance academic performance, a module on video games (including the DSM-5 scale) and a module on pornography.

NOTE: Prevalences in this report with values below 1% should be interpreted with caution as they may be affected by high sampling error.

EDADES

GENERAL ASPECTS	
Name	EDADES. Survey on Alcohol and Drugs in Spain.
Description of the survey	Household survey of the general population (15-64 years old), conducted at home.
Body responsible for the survey	Spanish Observatory on Drugs and Addictions (OEDA). Government Delegation for the National Plan on Drugs (DGPNSD). Ministry of Health.
SCOPE OF THE SURVEY	
Geographical scope	The survey is conducted nationwide. The results are nationally representative.
Population scope	Universe: Population resident in Spain aged 15 to 64 years old, both inclusive.
Time scope. Periodicity.	EDADES has been held every 2 years since 1995. In 2015-2016, the data collection period was from 1 to 18 December 2015 and from 7 February to 29 April 2016. In 2018, the data collection period was from 5 February to 27 April. In 2020, the data collection period was from 7 February to 13 March. In 2022, the data collection period was from 15 February to 3 June. In 2024, the data collection period was from 12 February to 21 June.
SAMPLE DESIGN AND CHARACTERISTICS. WEIGHTING	
Sampling frame	Urban and rural population (municipalities with fewer than 2,000 inhabitants) of all the Autonomous Communities and the Autonomous Cities of Ceuta and Melilla, resident in family households.
Sampling procedure	Three-stage cluster sampling without replacement. Second-stage units are family dwellings (households). In the third stage, one individual within each household was selected. In 2015, the first-stage units are the census sections (36,127 in 2015), corresponding to 8,117 municipalities in 2015. In 2015, 2,277 census sections corresponding to 948 municipalities were selected. In 2018, the first-stage units are the census sections (36,215), corresponding to 8,125 municipalities. 2,147 census sections corresponding to 954 municipalities were selected. In 2020, the first-stage units are the census sections (36,288), corresponding to 8,123 municipalities. 1,793 census sections corresponding to 744 municipalities were selected. In 2022, the first-stage units were the census sections (36,366), corresponding to 8,131 municipalities. 2,639 census sections corresponding to 1,004 municipalities were selected. In 2024, the first-stage units were the census sections (36,372), corresponding to 8,131 municipalities. 2,658 census sections corresponding to 1,052 municipalities were selected.
Weighting	The weighting for the analysis of results is carried out according to Autonomous Community (19 groups), size of municipality (7 groups), age (7 groups) and sex (2 groups) to correct for the disproportionality of the sample with respect to the universe.

SAMPLE DESIGN AND CHARACTERISTICS. WEIGHTING	
Sample size	In 2015, 22,541 valid questionnaires. In 2018, 21,249 valid questionnaires. In 2020, 17,899 valid questionnaires. In 2022, 26,344 valid questionnaires. In 2024, 26,878 valid questionnaires.
Sampling error	In 2016, the maximum sampling error (95% confidence level for p=0.5) was ±0.7%, ranging from ±2% for the Valencian Community to 6.7% for Melilla. In 2018 the maximum sampling error (95% confidence level for p=0.5) was ±0.8%, ranging from ±2.1% in Andalusia to 4.7% in La Rioja. In 2020, the maximum sampling error (95% confidence level for p=0.5) was ±0.8%, ranging from ±2.1% for the Valencian Community to 8.6% for Melilla. In 2022, the maximum sampling error (95% confidence level for p=0.5) was ±0.71%, ranging from 1.96% for the Community of Madrid to 6.48% for Melilla. In 2024, the maximum sampling error (95% confidence level for p=0.5) was ±0.61%, ranging from 2.00% for the Community of Madrid to 4.03% for Ceuta.
FIELDWORK. COLLECTION OF INFORMATION	
Method of collection. Questionnaires	Personal interview at home. The interviewer remains present during the entire process and collects the questionnaire once it is completed. The questionnaire consists of two parts: interviewer questionnaire and self-administered questionnaire. The questionnaire is completed in writing (pencil-and-paper). Questionnaire available in the official languages of Spain.
Response rate	In 2015, the effective response rate was 50.5%. In 2018, the effective response rate was 51%. In 2020, the effective response rate was 37.2%. In 2022, the effective response rate was 32.45%. In 2024, the effective response rate was 34.21%.
NEW DEVELOPMENTS	
Specific Modules	In 2011: a module on new psychoactive substances (NPS) and a module on employment. In 2013: a module on new psychoactive substances (NPS). In 2015: a module on new psychoactive substances (NPS), a module on cannabis (including CAST), a module on hypnosedatives (including DSM-5) and a module on the internet (including CIUS). In 2018: a module on new psychoactive substances (NPS), a module on alcohol (including AUDIT), a module on cannabis (including CAST), a model on opioid analgesics, a module on gambling (including DSM-5) and a module on the Internet (including CIUS). In 2020: a module on new psychoactive substances (NPS), a module on alcohol (including AUDIT), a module on cannabis (including CAST), a module on opioid analgesics, a module on gambling (including DSM-5), a module on Internet (including CIUS) and a module on employment. In 2022: a module on new psychoactive substances (NPS), a module on alcohol (including AUDIT), a module on cannabis (including CAST), a module on opioid analgesics, a module on gambling (including DSM-5), a module on Internet (including CIUS) and a module on mental health. In 2024: a module on new psychoactive substances (NPS), a module on alcohol (including AUDIT), a module on cannabis (including CAST), a module on opioid analgesics, a module on gambling (including DSM-5), a module on Internet (including CIUS), a module on mental health and a module on pornography which has been included for the first time in this edition.

NOTE: Prevalences in this report with values below 1% should be interpreted with caution as they may be affected by high sampling error.

ESDIP 2022

GENERAL ASPECTS	
Name	ESDIP 2022. Survey on health and drug use among prisoners.
Description of the survey	Survey included in the National Statistical Plan conducted every five years (started in 2006), through personal interviews with inmates in Spanish prisons.
Body responsible for the survey	**Responsible:** Spanish Observatory on Drugs and Addictions (OEDA). Government Delegation for the National Plan on Drugs (DGPNSD). Ministry of Health. **Contributors**: Subdirectorate General of Prison Health of the General Secretariat of Penitentiary Institutions of the Ministry of the Interior (SGIIPP), the Directorate General of Penitentiary Affairs of the Regional Government of Catalonia and the Directorate of Justice of the Regional Ministry of Equality, Justice and Social Affairs of the Basque Country through the Programme for the Study and Inspection of Penitentiary Centres of the Basque Government.
SCOPE OF THE SURVEY	
Geographical scope	The survey is conducted nationwide. The results are nationally representative.
Population scope	Universe: Inmate population in prisons in Spain.
Time scope. Periodicity.	ESDIP has been held every 5 years since 2006. the data collection period took place between 1 February and 19 March 2022.
SAMPLE DESIGN AND CHARACTERISTICS. WEIGHTING	
Sampling frame	The sample consisted of 5,512 inmates, distributed in 78 prisons. Men and women over 18 years of age with sufficient knowledge of Spanish, Arabic or Romanian to answer the questionnaire are included. According to their penal classification, they include pre-trial detainees, second-degree convicts, convicts awaiting further sentencing and unclassified convicts.
Sampling Procedure	Sampling, using a table of random numbers, was proportional to the number of inmates in each centre and their nationality, and proportional by sex, with women over-represented (weighted by sex to return proportionality to the sample).
Sample size	The final sample was 5,512 inmates.
Sampling error	Maximum sampling error: 1.24% (95% confidence level for p=0.5%).
FIELDWORK. COLLECTION OF INFORMATION	
Method of collection. Questionnaires	Face-to-face personal interview through an anonymous, pre-coded paper questionnaire completed by the interviewer. The questionnaires are administered to the inmates in the prisons themselves, in a separate room and ensuring the absolute confidentiality and anonymity of their answers. The duration of the interview is 30 to 45 minutes. Questionnaire available in Spanish, Arabic and Romanian. Translated into English for scientific purposes.
Response rate	The response rate was 86.4%.

2.1. Indicators of the State Information System on Drugs and Addiction (SEIDA)

The State Information System on Drugs and Addictions (SEIDA) is made up of four key indicators (admissions to treatment for the use of psychoactive substances, admissions to treatment for behavioural/non-substance addictions, hospital emergencies related to the use of psychoactive substances, and mortality due to acute reaction to psychoactive substances) and two cross-cutting indicators that are obtained by crossing information on these indicators from surveys and other

sources of information (problematic use of psychoactive substances and infectious diseases related to the use of psychoactive substances).
The key indicators collect information on an annual basis and are managed within the framework of the National Plan on Drugs as an inter-institutional collaboration in which the Autonomous Communities play a very active role, as well as the institutions from which the information comes (centres in the addiction care network, hospitals, institutes of legal medicine and toxicological laboratories).
The indicators that collect information on cannabis are as follows:

- **Indicator on Admissions to treatment for the use of psychoactive substances**: reports, since 1987, the number and characteristics of people receiving health care for drug use in outpatient centres of the public and subsidised network of the Autonomous Communities. The collection of data on cannabis has been carried out systematically at the national level since 1996.

- **Indicator on hospital emergencies related to the use of psychoactive substances**: reports, since 1987, the characteristics of hospital emergencies related to the non-medical or non-therapeutic use of psychoactive substances in Spain by analysing a sample of emergencies in the main hospitals in the country. The collection of data on cannabis has been carried out systematically since 1996.

- **Indicator on mortality due to acute reaction to psychoactive substances**: This is a specific mortality record initiated in 1983 that collects information on court-involved deaths, where the direct and fundamental cause of death is an acute reaction to the non-medical and intentional use of psychoactive substances. The collection of data on cannabis has been carried out systematically since 1996.

2.2. Other relevant sources of information

The information on cannabis use in the general population recognised through the surveys has been complemented by information on cannabis supply from the general population:

- Seizures and arrests provided by the **Center for Intelligence against Terrorism and Organized Crime (CITCO), part of the Ministry of the Interior.**

Information on synthetic cannabinoid use has been supplemented by:

- Information from the detection of new synthetic cannabinoids in Spain, through the **Spanish Early Warning System (SEAT)**[1] network, which in turn is part of the EU Early Warning System2. The SEAT network has nationwide coverage and works at two levels: at the national level, mainly through the General State Administration (AGE), and at the regional level.

Information on drug testing of road traffic fatalities in 2020 is from the following report:

- **Toxicological Findings in Mortal Victims of Traffic Accidents** (2023), National Institute of Toxicology and Forensic Sciences, Ministry of Justice.

Information on the analysis of cannabis in wastewater comes from:

- The **Spanish Network of Wastewater Analysis for Epidemiological Purposes** (ESAR-Net).

1 https://pnsd.sanidad.gob.es/profesionales/sistemasAlerta/home.htm
2 https://www.euda.europa.eu/activities/eu-early-warning-system-on-nps_en#:~:text=The%20EWS%20is%20part%20of,risk%20assessment%20and%20control%20measures.

03

INTRODUCTION

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In order to be able to carry out interventions aimed at preventing and reducing cannabis use, it is necessary to have rigorous and accurate information that allows us to infer the magnitude of the problem in Spain, both on the characteristics of use and its consequences.

Since 1994, the OEDA has had different sources of information that provide an overall view of the situation of cannabis use in Spain, knowing the characteristics of use in certain populations from biennial surveys of the general population and students (EDADES, ESTUDES) and other periodic surveys of specific populations (labour and prison surveys), as well as knowing the consequences caused by this use through the indicators of admissions to treatment, drug-related emergencies, specific mortality, infections related to use and problematic use. All this information is the result of inter-institutional collaboration between the Monitoring Centre (OEDA) and the Autonomous Communities and Autonomous Cities, which contribute annually to each of the indicators.

All available information to date shows that cannabis policies need to be cross-sectoral. Moreover, to be effective and to avoid unintended consequences, such policies should be directed not only at the individual care and rehabilitation of people who use, but also at the environment of use and the health system in general and other sectors directly involved in health promotion and prevention of drug use.

The Government Delegation for the National Plan on Drugs (DGPNSD) promoted the preparation of the National Strategy on Addictions (ENA) 2017-2024[3] and the Action Plan on Addictions 2021-2024[4], in line with the European Union (EU) Drugs Strategy (2021-2025)[5], the EUDA Strategy 2025[5], as well as the Strategies of other neighbouring countries.

The ENA is a participatory and consensus document, agreed between all Public Administrations, non-governmental organisations in the sector, scientific societies, research centres, and all those public and private bodies that are part of the National Plan on Drugs. The objectives of the ENA and its Action Plans include:

- Reducing the unjustified perception in society, and especially among minors, of the "normality" of drug use, mainly cannabis and alcohol.
- Reaching out to and engaging problematic users who do not seek treatment, especially those who use cannabis.
- Reducing the supply and trafficking of cannabis, and associated criminality.

This technical report on cannabis aims to support the implementation of these actions by providing up-to-date information based on science and knowledge from accredited and legitimised sources that can contribute to the knowledge of professionals, which are accessible to the public and which serve as a reference, displacing sources interested in generating confusion and opacity.

3 National Strategy on Addictions 2017-2024. Government Delegation for the National Plan on Drugs. Ministry of Health. Available at: https://pnsd.sanidad.gob.es/pnsd/estrategiaNacional/docs/180209_ESTRATEGIA_N.ADICCIONES_2017-2024__aprobada_CM.pdf

4 Action Plan on Addiction 2021-24. Government Delegation for the National Plan on Drugs. Ministry of Health. Available at: https://pnsd.sanidad.gob.es/pnsd/planAccion/docs/PlanASA_2021-24_aprobado.pdf

5 EU Drugs Strategy 2021-2025. https://www.boe.es/doue/2021/102/Y00001-00014.pdf

04

GENERAL CANNABIS CONCEPTS

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Cannabis is a drug extracted from the Cannabis sativa plant, whose leaves, stems, flowers and resins are used to make the most widely used illegal drugs in Spain, Europe and the world: marijuana and hashish. The Cannabis sativa plant contains at least 125 different cannabinoids[6]. The three most important are delta-9-tetrahydrocannabinol (THC), cannabidiol (CBD) and cannabinol. While THC is responsible for most of the effects, cannabinol is ten times less active than THC, and cannabidiol has a different profile, exhibiting anxiolytic and sedative activity[7].

The cannabinoid content depends on several factors such as the part of the plant, the type (there are different genotypes or varieties) and the time when it is harvested. The highest concentration of cannabinoids is found in the flowering buds of the female plant and in the leaves, while concentrations are low in the stem, roots and seeds. Synthetic cannabinoids, which are laboratory-made substances chemically similar to compounds found in the cannabis plant, can have serious negative health effects[8]. These products, also known as "Spice", K2, synthetic marijuana or fake weed, can have a much higher concentration of THC and can be much more potent. The use of synthetic cannabinoids is associated with serious, potentially life-threatening health effects[9,10].

The effects of this drug on the brain are due to its active ingredient, THC, which is found in different proportions depending on the preparation used:

1. **Marijuana**: refers to the substance obtained by crushing the dried leaves, flowers or small stems of the plant.

2. **Hashish**: refers to the substance obtained from the resin stored in the flowers of the female plant.

3. **Hashish oil:** a concentrated product derived from cannabis resin.

4.1. Routes of administration

These preparations (marijuana, hashish, etc.) are usually smoked in a rolled cigarette, most of the time mixed with tobacco, although they can also be smoked without tobacco, receiving different names that change with the generations of adolescents: joint, reefer, spliff, etc. Less frequently, it is smoked in water pipes, vaporised with electronic cigarettes or ingested directly. Topical and transmucosal (usually sublingual) routes are used for some medical cannabis products, but rarely for recreational purposes.

6 Radwan MM, Chandra S, Gul S, ElSohly MA. Cannabinoids, Phenolics, Terpenes and Alkaloids of Cannabis.Molecules. 2021;26(9):2774. Published 2021 Ma y 8. doi:10.3390/molecules26092774

7 Fusar-Poli P, Crippa JA, Bhattacharyya S, Borgwardt SJ, Allen P, Martin-Santos R, Seal M, Surguladze SA, O'Carrol C, Atakan Z, Zuardi AW, McGuire PK. Distinct effects of {delta}9-tetrahydrocannabinol and cannabidiol on neural activation during emotional processing. Arch Gen Psychiatry. 2009;66:95-105.

8 de Oliveira MC, Vides MC, Lassi DLS, et al. Toxicity of Synthetic Cannabinoids in K2/Spice: A Systematic Re view. Brain Sci. 2023;13(7):990. Published 2023 Jun 24. doi:10.3390/brainsci13070990

9 Cohen K, Weinstein AM. Synthetic and Non-synthetic Cannabinoid Drugs and Their Adverse Effects-A Review From Public Health Prospective. Front Public Health. 2018;6:162. Published 2018 Jun 7. doi:10.3389/fpubh.2018.00162

10 Castaneto MS, Gorelick DA, Desrosiers NA, Hartman RL, Pirard S, Huestis MA. Synthetic cannabinoids: epidemiology, pharmacodynamics, and clinical implications. Drug Alcohol Depend. 2014;144:12-41. doi:10.1016/j.drugalcdep.2014.08.005

4.2. Place of action

The cannabinoid receptor is a G protein-coupled receptor, which inhibits adenylyl cyclase and stimulates potassium conductance. There are two known cannabinoid receptors: CB1 and CB2[11]:

- **CB1** is found in the central nervous system, including the basal ganglia, substantia nigra, cerebellum, hippocampus and cerebral cortex. It acts presynaptically and inhibits the release of several neurotransmitters, including acetylcholine, L-glutamate, gamma-aminobutyric acid (GABA), norepinephrine, dopamine and 5-hydroxytryptamine.
- **CB2** is found peripherally in immune system tissues (e.g. splenic macrophages and B lymphocytes), peripheral nerve terminals and vas deferens. It is believed to play a role in the regulation of immune responses and inflammatory reactions. Anandamide and palmitoylethanolamide are known endogenous ligands of cannabinoid receptors.

4.3. Pharmacokinetics

Delta-9 tetrahydrocannabinol (THC) is the most psychoactive cannabinoid. The pharmacokinetics and pharmacodynamics of THC vary according to the route of exposure as follows[12,13]:

- **Inhaled cannabis:** after inhalation of cannabis smoke, the onset of psychoactive effects occurs rapidly, with peak effects felt within 15-30 minutes and lasting up to four hours. These effects reflect plasma THC concentrations. Pulmonary bioavailability varies from 10-35% of an inhaled dose and is determined by the depth of inhalation along with the duration of inhalation and breath holding.
- **Cannabis used orally**: compared to inhalation, absorption is slower. Ingestion of cannabis has a delayed onset of psychoactive effects ranging from 30 minutes to three hours and can last for up to 6 hours. Its bioavailability may vary between 5 and 10% because it is partially destroyed by gastric juice and undergoes significant first-pass metabolism in the liver. Clinical effects may last up to 12 hours. The presence of food can delay THC absorption. It has been estimated that the same intensity of effect requires doses three to four times higher than those used by the pulmonary route. The maximum THC plasma concentration appears after 2-4 hours. THC is lipid soluble, highly protein bound (95-99%) and has a volume of distribution of 2.5-3.5 L/kg14. After use, THC quickly reaches the brain, where it accumulates and from where it is very slowly eliminated. THC has a half-life of approximately one week, which means that, one week after use, the body has not managed to eliminate more than 50%. Even if a person only uses at weekends, there will not be enough time for it to be completely eliminated and it will accumulate in the brain, producing effects.

In recent years, due to the increase in cannabis use in the general population and the exponential increase in demand for treatment for cannabis use, there has been a growing interest in studying and understanding the implications of cannabis use on the body and its impact on public health.

11 Borgelt LM, Franson KL, Nussbaum AM, Wang GS. The pharmacologic and clinical effects of medical cannabis. Pharmacotherapy 2013; 33:195.
12 Schwilke EW, Schwope DM, Karschner EL, et al. Delta9-tetrahydrocannabinol (THC), 11-hydroxy-THC, and 11-nor-9-carboxy-THC plasma pharmacokinetics during and after continuous high-dose oral THC. Clin Chem 2009; 55:2180.
13 Cooper ZD, Haney M. Comparison of subjective, pharmacokinetic, and physiological effects of marijuana smoked as joints and blunts. Drug Alcohol Depend 2009; 103:107.
14 McGilveray IJ. Pharmacokinetics of cannabinoids. Pain Res Manag 2005; 10 Suppl A:15A.

4.4. Effects on the organism

When cannabis is used in low doses the effect can be pleasant, while at high doses it can produce anxiety. Immediately after use, there is what is known as "cannabis intoxication", with dry mouth, reddening of the eyes, tachycardia, uncoordinated movements, uncontrolled laughter, drowsiness, impaired memory, attention and concentration.

4.4.1. Effects on the Central Nervous System (CNS)

The effects on the CNS are the most relevant as they are the basis of its abuse and are associated with some of the most frequent complications after acute and chronic use: euphoria, well-being, relaxation, drowsiness, alteration of short-term memory, difficulty in concentration, worse driving, reduced pain.

Cannabis use generally has a biphasic effect. An initial phase of stimulation (euphoria, well-being, increased perception, anxiety) is followed by a phase where sedation and relaxation predominate. There is a slight distortion of space and time.

Anxiety, dysphoria, paranoid symptoms and/or panic, which usually disappear spontaneously within a few hours, may occur in some subjects who are especially inexperienced, or after high doses. Acute cannabis intoxication may be accompanied by an acute psychotic episode characterised by delusions, hallucinations, confusion, amnesia, anxiety and agitation. These acute symptoms usually disappear spontaneously within a few hours as the THC is eliminated from the body.

Daily and prolonged cannabis use leads to cognitive deficits and reduced hippocampal volume[15] which can result in impaired memory, attention, perception and concentration, depending on the dose.

Cannabis and mental disorders.

Cannabis use is correlated with an increased likelihood and earlier onset of psychosis, as well as more intense schizophrenic symptoms in patients diagnosed with schizophrenia[16].

Effects on psychomotor performance and driving

Cannabis affects the areas of the brain that control movement, balance, coordination and memory. Cannabis use can impair important skills needed for safe driving, increasing reaction time and hampering decision-making ability[17].

4.4.2. Cardiovascular system

Cannabis has a hypotensive and tachycardic effect, and may increase the risk of stroke, heart disease and other vascular diseases[18,19].

15 Meier MH, Caspi A, R Knodt A, Hall W, Ambler A, Harrington H, Hogan S, M Houts R, Poulton R, Ramrakha S, Hariri AR, Moffitt TE. Long-Term Cannabis Use and Cognitive Reserves and Hippocampal Volume in Midlife. Am J Psychiatry. 2022 May;179(5):362-374. doi: 10.1176/appi.ajp.2021.21060664. Epub 2022 Mar 8. PMID: 35255711; PMCID: PMC9426660.

16 Urits I, Gress K, Charipova K, Li N, Berger AA, Cornett EM, Hasoon J, Kassem H, Kaye AD, Viswanath O. Cannabis Use and its Association with Psychological Disorders. Psychopharmacol Bull. 2020 May 19;50(2):56-67. PMID: 32508368; PMCID: PMC7255842.

17 Marcotte TD, Umlauf A, Grelotti DJ, et al. Driving Performance and Cannabis Users' Perception of Safety: A Randomized Clinical Trial. JAMA Psychiatry 2022; 79:201. 18 Richards JR, Blohm E, Toles KA, et al. The association of cannabis use and cardiac dysrhythmias: a systematic review. Clin Toxicol (Phila) 2020; 58:861.

19 Jouanjus E, Lapeyre-Mestre M, Micallef J, French Association of the Regional Abuse and Dependence Monitoring Centres (CEIP-A) Working Group on Cannabis Complications. Cannabis use: signal of increasing risk of serious cardiovascular disorders. J Am Heart Assoc 2014; 3:e000638.*

4.4.3. Respiratory system

Smoked cannabis contains the same toxins and carcinogens as tobacco smoke. These substances include carbon monoxide, ammonia, acetaldehyde, formaldehyde, acrolein, phenols, nitrosamines, polycyclic aromatic hydrocarbons and others. Many of these compounds are carcinogenic and harmful to the respiratory epithelium.

Regular cannabis use has been linked to chronic obstructive pulmonary disease (COPD), interstitial lung disease, eosinophilic pneumonia, acute bronchitis and other respiratory infections (aspergillosis, legionellosis, tuberculosis) and pneumothorax[20].

4.4.4. Fertility and pregnancy

Cannabis may affect processes related to female reproductive health, including FSH and LH secretion, ovulation and menstrual cyclicity[21]. In men, THC is associated with reduced spermatogenesis and impaired sperm function, inducing abnormalities in sperm morphology[22].

Cannabis use during pregnancy (prenatal cannabis exposure) is associated with an increased risk of low birth weight, small size for gestational age and admission to neonatal intensive care[23].

THC and cannabidiol appear in the breast milk of breastfeeding women who use cannabis[24]. The concentration of THC in breast milk is two to six times higher than its concentration in plasma. THC is detectable in breast milk for several weeks after the mother stops using cannabis. The effects of cannabinoids in breast milk on the infant are uncertain.

4.5. Cannabis use disorder

The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM) of the American Psychiatric Association (APA) was published on 18 May 2013, and the Spanish translation was published at the end of 2014: Diagnostic and Statistical Manual of Mental Disorders (DSM-5)[25]. Substance use disorders include cannabis use disorder. Cannabis use disorder is a serious mental illness that affects the way a person thinks, feels and behaves. People with cannabis use disorder are unable to stop using cannabis even though it causes negative consequences in their lives. The following table reflects the criteria that include a cannabis use disorder.

20 Jett J, Stone E, Warren G, Cummings KM. Cannabis Use, Lung Cancer, and Related Issues. J Thorac Oncol. 2018 Apr;13(4):480-487. doi: 10.1016/j.jtho.2017.12.013. Epub 2018 Jan 31. PMID: 29374567.

21 Lo JO, Hedges JC, Girardi G. Impact of cannabinoids on pregnancy, reproductive health, and offspring outcomes. Am J Obstet Gynecol. 2022 Oct;227(4):571-581. doi: 10.1016/j.ajog.2022.05.056. Epub 2022 May 31. PMID: 35662548; PMCID: PMC9530020.

22 Payne KS, Mazur DJ, Hotaling JM, Pastuszak AW. Cannabis and Male Fertility: A Systematic Review. J Urol. 2019 Oct;202(4):674-681. doi: 10.1097/JU.0000000000000248. Epub 2019 Sep 6. PMID: 30916627; PMCID: PMC7385722.

23 Singh S, Filion KB, Abenhaim HA, Eisenberg MJ. Prevalence and outcomes of prenatal recreational cannabis use in high-income countries: a scoping review. BJOG. 2020 Jan;127(1):8-16. doi: 10.1111/1471-0528.15946. Epub 2019 Oct 24. PMID: 31529594.

24 Moss MJ, Bushlin I, Kazmierczak S, Koop D, Hendrickson RG, Zuckerman KE, Grigsby TM. Cannabis use and measurement of cannabinoids in plasma and breast milk of breastfeeding mothers. Pediatr Res. 2021 Oct;90(4):861-868. doi: 10.1038/s41390-020-01332-2. Epub 2021 Jan 19. PMID: 33469174.

25 APA. Manual diagnóstico y estadístico de los trastornos mentales (DSM-5). 5a ed. Madrid: Médica Panamericana; 2014.

Table 4.1. DSM-5 criteria for cannabis use disorder.

A. A problematic pattern of cannabis use resulting in clinically significant impairment or distress manifested by at least two of the following events within 12 months:
1. Cannabis is used frequently in larger quantities or for longer than expected.
2. There is a persistent desire or failed efforts to stop or control cannabis use.
3. A lot of time is spent on the activities necessary to obtain cannabis, use it or recover from its effects.
4. Cravings or a powerful desire or need to use cannabis.
5. Recurrent cannabis use leading to non-fulfilment of basic duties at work, school or home.
6. Continued use of cannabis despite persistent or recurrent social or interpersonal problems caused or that is likely to be caused or exacerbated by the effects of cannabis.
7. Cannabis use leads to the abandonment or reduction of important social, professional or leisure activities.
8. Recurrent use of cannabis in situations where it causes physical risk.
9. Continued use of cannabis despite knowledge of a persistent or recurrent physical or psychological problem that is likely to be caused or exacerbated by cannabis use.
10. Tolerance, defined by one of the following signs:
a. A need for increasing amounts of cannabis to achieve the desired intoxication or effect.
b. A markedly reduced effect after continued use of the same amount of cannabis.
11. Abstinence, manifested by any of the following signs:
a. Presence of the characteristic cannabis withdrawal syndrome (see Criteria A and B of the Cannabis Withdrawal Criteria set, p. 271).
b. Cannabis (or a similar substance) is used to relieve or avoid withdrawal symptoms.

Some of the risk factors associated with cannabis use disorder are:

- **Frequency of use**: the main risk factor for developing a cannabis use disorder is the frequency of cannabis use26.

26 Richter L, Pugh BS, Ball SA. Assessing the risk of marijuana use disor der among adolescents and adults who use marijuana. Am J Drug Alcohol Abuse 2017; 43:247.

- **Duration of use**: duration of cannabis use is also a risk factor for developing cannabis use disorder[27].
- **Cannabis potency**: A systematic review found a positive association between the potency of cannabis used (assessed in terms of THC concentration) and the likelihood of developing cannabis use disorder[28].
- **Genetic factors**: Family and twin studies suggest that there is a substantial degree of heritability for certain patterns of cannabis use and the development of cannabis[29].
- **Psychosocial factors:** large-scale population-based observational studies and smaller prospective longitudinal studies suggest several risk and protective factors associated with cannabis use and the development of cannabis use disorder in adolescence and early adulthood, after controlling for socio-demographic characteristics and use of other substances[30].
    - > **Psychological factors:** depressed mood, anxiety, persistent behavioural problems in childhood or adolescence, or a pre-existing psychiatric disorder are associated with an increased risk of initiating cannabis use among adolescents and young adults and of developing a cannabis use disorder[31].
    - > **Use of other substances**: use of alcohol, tobacco and other substances is associated with an increased risk of cannabis use, daily cannabis use and development of cannabis use disorder[32].
    - > **Education**: More years of education is associated with a lower prevalence of cannabis use[33].
    - > **Others**: Other factors associated with cannabis use and the development of cannabis use disorder include parental cannabis use, adverse childhood experiences (physical, emotional or sexual abuse) and stressful life events (such as unemployment, economic hardship)[34].
    - > **Protective factors**: Protective factors against onset of cannabis use or developing a cannabis use disorder include close parental monitoring, parental opposition to cannabis use, rule-setting, parental nurturing and attendance at religious services[35].

4.6. Uses of cannabis

In addition to recreational uses, Cannabis has been used empirically since ancient times for its supposed therapeutic properties. In recent years, its use has been described by groups of patients affected by certain illnesses and its potential usefulness in different indications has been investigated.

27 Volkow ND, Han B, Einstein EB, Compton WM. Prevalence of Substance Use Disorders by Time Since First Substance Use Among Young People in the US. JAMA Pediatr 2021; 175:640.
28 Petrilli K, Ofori S, Hines L, et al. Association of cannabis potency with mental ill health and addiction: a systematic review. Lancet Psychiatry 2022; 9:736.
29 Lopez-Leon S, González-Giraldo Y, Wegman-Ostrosky T, Forero DA. Molecular genetics of substance use disorders: An umbrella review. Neurosci Biobehav Rev 2021; 124: 358.
30 Suárez-MaldonadoMT,DomínguezMartínezT,BenjetC.WhyDoSomePeopleBecomeMoreInvolvedinCannabisUseThanOthers?ASystematicNarrativeReviewonCannabis UseTransitionPredictors.JStudAlcoholDrugs2022;83:781.
31SolmiM,DragiotiE,CroattoG,etal.Riskandprotectivefactorsforcannabis,cocaine,andopioidusedisorders:Anumbrellareviewofmeta-analysesofobservationalstudies. NeurosciBiobehavRev2021;126:243.
32VerweijKJH,TreurJL,VinkJM.Investigatingcausalassociationsbetweenuseofnicotine,alcohol,caffeineandcannabis:atwo-samplebidirectionalMendelian randomizationstudy.Addiction2018;113:1333.
33BlancoC,Flórez-SalamancaL,Secades-VillaR,etal.Predictorsofinitiationofnicotine,alcohol,cannabis,andcocaineuse:ResultsoftheNationalEpidemiologicSurveyon AlcoholandRelatedConditions(NESARC).AmJAddict2018;27:477.
34MyersB,McLaughlinKA,WangS,etal.Associationsbetweenchildhoodadversity,adultstressfullifeevents,andpast-yeardrugusedisordersintheNationalEpidemiological StudyofAlcoholandRelatedConditions(NESARC).PsycholAddictBehav2014;28:1117.
35SpanishObservatoryonDrugsandAddictions.Report2024.Alcohol,tobaccoandillegaldrugsinSpain.Madrid:MinistryofHealth.GovernmentDelegationfortheNationalPlan onDrugs,2024.294p.
36EuropeanMonitoringCentreforDrugsandDrugAddiction(2018),Medicaluseofcannabisandcannabinoids:questionsandanswersforpolicymaking,PublicationsOfficeof theEuropeanUnion,Luxembourg.

The clinical trial data summarised below (Table 1) indicate that some cannabinoids may alleviate the symptoms of some diseases. In these cases, cannabinoids are often used as a supplementary treatment, meaning that they are added to other medical treatments, rather than used alone. They are also normally used only when a patient has not responded to the recommended treatments for these conditions[36].

Table 4.2 Summary of the scientific evidence on the medical use of cannabis and cannabinoids.

Disease/ Symptoms	Evaluated products	Strength of evidence	Limitations
Nausea and vomiting associated with cancer chemotherapy	Cannabinoids	**Weak**	Few comparative studies with newer, more effective antiemetics. Newer chemotherapy regimens cause less nausea. Little evidence available about use in other types of nausea.
Appetite stimulant in patients with AIDS-related wasting	Dronabinol/THC	**Weak**	Fewer AIDS-related cases now that may be treated. Little evidence available about use to stimulate appetite in people with other conditions.
Muscle spasms in patients with multiple sclerosis	Nabiximols	**Moderate**	Patients report reductions, but more limited impact on clinician ratings.
Chronic non-cancer pain, including neuropathy	Cannabis and cannabinoids	**Moderate**	Small (but statistically significant) effect compared to placebo.
Palliative care for cancer	Cannabinoids	**Insufficient**	Larger and better designed trials are needed.
Intractable childhood epilepsy	CBD	**Moderate**	Evidence for use in adjunctive therapy in people with Dravet or Lennox-Gastaut syndrome. More studies are needed to look at dosage, interactions and use in people with other forms of epilepsy.
Other medical uses, such as sleep disorders, anxiety disorders,depression, degenerative neurological disorders and inflammatory bowel disease	Cannabis or cannabinoids	**Insufficient**	Some evidence for short-term effects in some disorders (e.g. sleep disorders), but larger, better-designed trials are needed, with longer follow-up.

Source: EUDA. Medical use of cannabis and cannabinoids.

36 *European Monitoring Centre for Drugs and Drug Addiction (2018), Medical use of cannabis and cannabinoids: questions and answers for policymaking, Publications Office of the European Union, Luxembourg.*

Several medicines containing cannabinoids have been authorised for marketing. Those used for medical purposes can come from the cannabis plant (plant-derived cannabinoids, also known as phytocannabinoids) or be synthesised in a laboratory (synthetic cannabinoids). The main ones are:

- **®SATIVEX:** ccontains dronabinol (synthetic THC) and cannabidiol (CBD). Hospitaldiagnostic drug. It is indicated as a treatment for the improvement of symptoms in adult patients with moderate to severe spasticity due to multiple sclerosis (MS) who have not responded adequately to other anti-spasticity medications. This medicine was authorised for marketing in Spain on 16 July 2010.
- **®EPIDYOLEX:** active ingredient cannabidiol. Hospital diagnostic drug. It is indicated as an adjunctive treatment for seizures associated with Lennox-Gastaut syndrome (LGS) or Dravet syndrome (DS) and as an adjunctive treatment for seizures associated with tuberous sclerosis complex (TSC). This medicine has been authorised as an orphan drug and started to be marketed in Spain on 5 December 2019.

Sales data for cannabinoid medicines have been available from the Subdirectorate General of Pharmacy of the Ministry of Health since 2016, the first year for which hospital use data are available, as both medicines (Sativex® and Epidyolex®) are for hospital diagnosis and without a differentiated seal coupon, dispensed in hospital pharmacy services.

ATC5	ATC5 Description	Trade name	Date of inclusion in reimbursement	Hospital Consumption	2016	2017
N02BG10	Cannabinoides	Sativex	01/03/2011	No. of packages used	9,139	10,225
N03AX24	Cannabidiol	Epidyolex	01/09/2021	No. of packages used		
				Use in No. of DDDs		
				Use in No. of DDDs		

2018	2019	2020	2021	2022	2023	2024
			13,480	14.,05	16,065	15,913
			1,219	8,763	15,899	23,389
			17,414.63	125,188.22	227,133.11	334,135.25
			0.00101	0.00722	0.01294	0.01883

Source: Subdirectorate General of Pharmacy. Ministry of Health,

For Sativex, hospital usage data cannot be provided in no. of DDD or DDD/1,000 inhabitants/day, as it does not have a WHO-assigned DDD. The source of information is the usage data in the hospitals of the Spanish National Health Service public network provided by the Health Services of the Autonomous Communities and the National Institute of Health Management (INGESA), responsible for the data of Ceuta and Melilla.

In other countries, the use of drugs containing cannabinoids has been authorised in certain cases, in

accordance with current regulations, on an ad hoc basis. In Spain, these medicines have been authorised for import as foreign medicines in exceptional cases of multiple sclerosis or as an anti-emetic in cancer treatment. These medicines are:

- **®MARINOL Y SYNDROS.** Active substance: dronabinol. Dronabinol is indicated to treat anorexia associated with weight loss in patients with acquired immunodeficiency syndrome (AIDS) and to reduce nausea and vomiting associated with cancer chemotherapy, usually after failure of previous treatments.
- **®CESAMET Y CANEMES.** Active substance: nabilone (synthetic cannabinoid similar to THC). The main indication is to reduce nausea and vomiting associated with chemotherapy, usually after failure of previous treatments.

Worldwide, the medical use of cannabis is legal in almost fifty countries, including Argentina, Australia, Brazil, Canada, Chile, Costa Rica, Croatia, Cyprus, Denmark, Finland, Germany, Malta, Mexico... In the United States, medical cannabis is legal at the state level in 38 states, the District of Columbia, Puerto Rico, the US Virgin Islands and Guam, but remains illegal at the federal level.

Magistral formulations of standardised cannabis for therapeutic purposes in Spain

In September 2024 the Ministry of Health published the draft of the Royal Decree regulating the dispensation of master formulas of standardised cannabis for therapeutic purposes. The text, which has been submitted to a hearing and public consultation procedure, specifically establishes the conditions for the preparation and dispensation of standardised magistral formulae of standardised cannabis preparations. It also provides for the creation of a register to ensure the traceability and quality of standardised cannabis preparations used to produce magistral formulations.

Prescription will be limited to medical specialists, and master formulae of standardised cannabis preparations will be prepared in hospital pharmacy services, to ensure adequate pharmacotherapeutic monitoring..

This regulation, which responds to the request of the subcommittee created to analyse the regulation of medical cannabis at the request of the Health and Consumer Affairs Commission on 13 May 2021, seeks to facilitate access to medicines containing standardised cannabis preparations for certain patients for whom authorised medicines have not been effective.

The regulation governs the prescription, preparation, dispensing and use of standardised magistral formulae of standardised cannabis preparations, and establishes an evaluation procedure and a specific register for these preparations, ensuring their quality.

The diseases that can benefit and which will be included in the corresponding monograph are those for which there is scientific evidence of therapeutic benefit of cannabis and its extracts

- Multiple sclerosis spasticity: stiffness and muscle spasms associated with multiple sclerosis.
- Severe forms of refractory epilepsy: certain types of epilepsy that do not respond to conventional treatments.
- Chemotherapy nausea and vomiting.
- Chronic refractory pain: persistent pain that is not relieved by the usual treatments.

The draft Royal Decree states that the monograph of the National Formulary will specify the legally recognised indications for these medicines. Therefore, the list of indications could be expanded or modified, with the necessary agility, depending on scientific evidence and future regulatory decisions. The Spanish Agency for Medicines and Health Products (AEMPS) will publish the monograph in the National Formulary for standardised magistral formulations of standardised cannabis preparations. The monograph shall include the legally recognised action and indications for these medicinal products.

Laboratories manufacturing the standardised preparations must comply with EU good manufacturing practices, ensure compliance with good manufacturing practices by their suppliers, audit them regularly and document the supply chain of each starting material. They may only supply these preparations to hospital pharmacy services or for export.

Standardised preparations must be registered in the AEMPS public register created for this purpose. Manufacturing laboratories must apply for registration, providing the information required in the Annex for preregistration evaluation.

Standardised magistral formulae shall be used when no authorised medicinal products are available or do not meet the needs of the patient. Prescription shall be limited to specialist physicians treating the indications detailed in the monograph. The treatment should be justified in the medical record and the patient should be informed of the clinical evidence, benefits and risks. The physician should periodically evaluate the usefulness and safety of treatment and consider its cessation if there is no benefit or an unfavourable risk-benefit ratio. The preparation and dispensing will be limited to hospital pharmacy services that provide pharmaceutical care and comprehensive patient follow-up in collaboration with the medical team.

Regulatory changes to non-medical cannabis in some countries

Although some countries, such as Spain, do not criminalise the use of cannabis and other drugs, the production and marketing of cannabis is prohibited in Spain and in most other countries. Recently some countries are changing regulation and increasing the legal availability of cannabis for adult use. This makes it necessary to monitor the public health effects of these changes. The legalisation of cannabis for adults over the years in Uruguay, Canada, several US states, and more recently in some European countries has increased access to cannabis products for adults, at a lower cost than the illicit market. These changes appear to have led to an increase in daily cannabis use among adults who were already using cannabis. Subsequently, an increase in emergency department visits by adults reporting adverse effects, and an increase in child intoxications due to the ingestion of cannabis products have been reported in both countries[37].

37 Tesfa Mekonen Yimer, Eva Hoch, Benedikt Fischer, Danielle Dawson, Wayne Hall. Lancet Public Health 2025; 10: e148–59

05

SITUATION WORLWIDE

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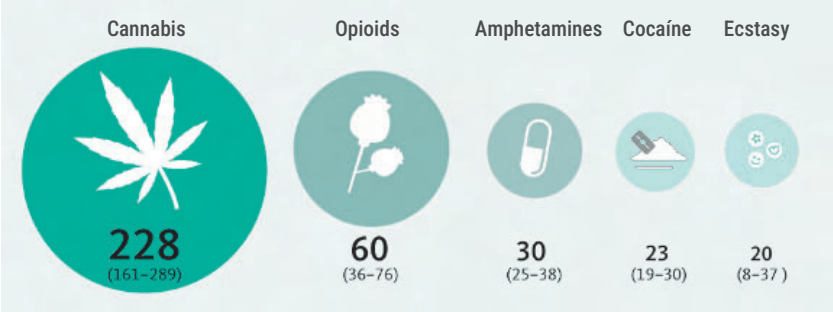
According to the 2024 World Drug Report[38] published by the United Nations Office on Drugs and Crime (UNODC), cannabis remains the most widely used illegal drug worldwide. An estimated 228 million people (between 161 million and 289 million, equivalent to almost 4% of the world's population) were estimated to use cannabis in 2022. This was followed by opioids (60 million), amphetamine-type stimulants (30 million) and cocaine and ecstasy (23 million and 20 million respectively)..

Figure 5.1. Estimated number of drug users worldwide in millions of people, 2022.



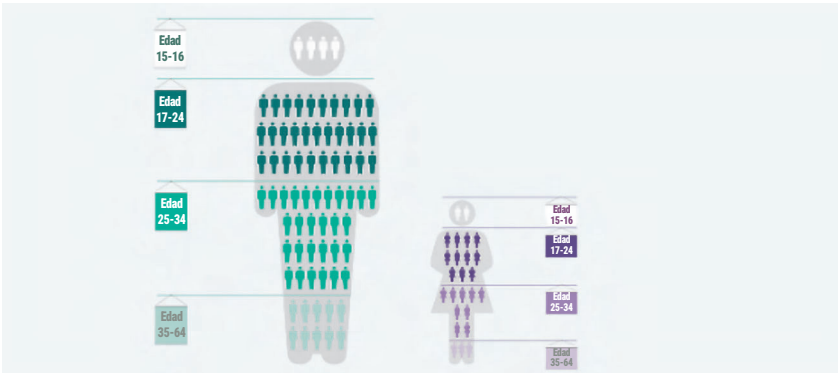
Source: UNODC. World Drug Report 2024 - Drug market patterns and trends[39]

The total number of people who have used cannabis is estimated to have increased by 3.64% in the last three years (from 220 in 2019 to 228 in 2022) and by almost 28% in the last 10 years (2011-2021).
The prevalence of cannabis use may vary according to region, age group and sex.

5.1. Use by sex

In general, men are more likely than women to use drugs[40] (women account for approximately one in four people who used drugs in the last year), and this is also true for cannabis: Young males, aged 17-34, continue to account for most cannabis users worldwide.

Figure 5.2. Cannabis users by age and gender worldwide, 2022.



Source: UNODC. World Drug Report 2024 - Drug market patterns and trends

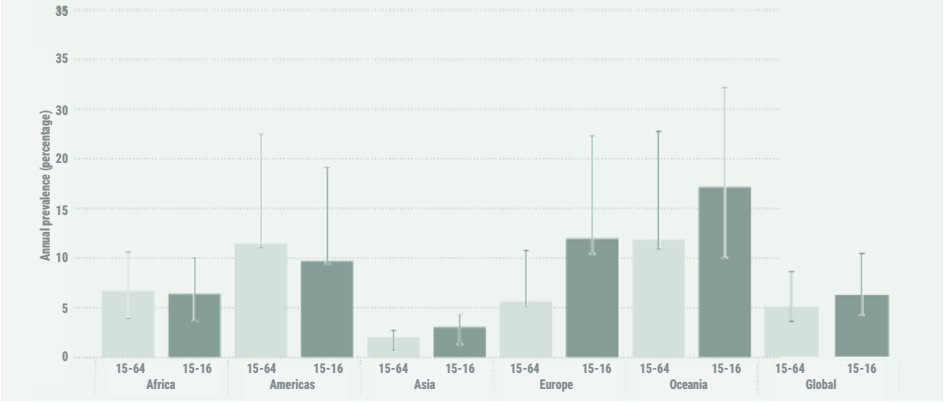
38 World Drug Report 2024. Disponible en: https://www.unodc.org/unodc/en/data-and-analysis/world-drug-r eport-2024.html
39 World Drug Report 2024 - Drug market patterns and trends. Disponible en: https://www.unodc.org/unodc/en/data-and-analysis/wdr2024-drug-mark et-trends.html
40 World Drug Report 2024 - Special Points of Interest. Disponible en: https://www.unodc.org/documents/data-and-analysis/WDR_2024/2411140S.pdf

However, the proportion of users may also vary according to geographical location; for example, in Asia or Africa only around 9-10% of cannabis users are women, while in North America, women account for 45% of cannabis users.

5.2. Use by age

In adolescents aged 15 and 16, the annual prevalence of cannabis use is higher than in adults (5.5% versus 4.4%, respectively) at the global level. In Europe and Oceania, the prevalence of cannabis use is significantly higher among young people than among adults, and slightly higher in Asia. However, it is similar between the two groups in Africa and lower among 15-16 year olds than among the general population in the Americas.

Figure 5.3. Use of cannabis by region in adult population (aged 15-64 years) vs. adolescent population (aged 15-16) worldwide, 2022.

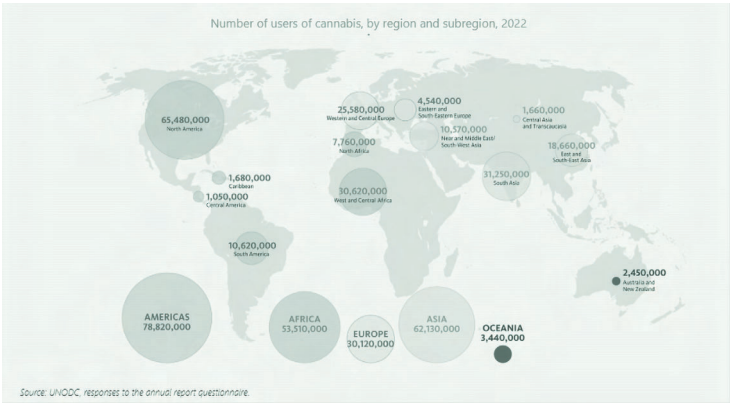


Source: UNODC. World Drug Report 2024 - Drug market patterns and trends

5.3. Use by region

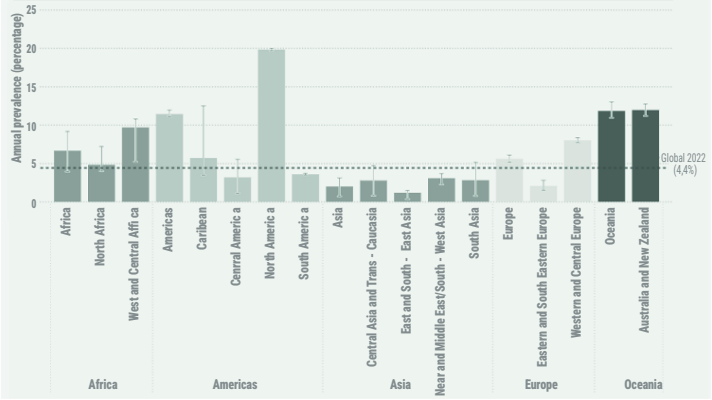
The Americas is the region with the highest number of users, 78,820,000, with North America standing out significantly (65,480,000), followed by Asia (62,130,000) and Africa (53,510,000).

Figure 5.4. Users of cannabis by region and subregion worldwide, 2022.



Source: UNODC. World Drug Report 2024 - Drug market patterns and trends

Figure 5.5. Use of cannabis by region and subregion worldwide, 2022.



Source: UNODC. World Drug Report 2024 - Drug market patterns and trends

1. AMERICA

The region with the highest cannabis use continues to be North America, where 19.8% of the population aged 15-64 used the drug in 2022. The gender gap regarding cannabis use is narrowing: Women account for 45% of cannabis users in 2022, compared to 42% in 2021[41]. While the overall trend in adolescent cannabis use appears to be stable, cannabis vaping has doubled since 2017. In the United States, the 2023 National Survey on Drug Use and Health (NSDUH) estimated that lifetime, past-year and past-month prevalence rates of cannabis use in the US population aged 12 years and older were 47.1 per cent, 21.8 per cent and 15.4 per cent, respectively[42].

2. AFRICA

Cannabis use is particularly high in West and Central Africa, where the prevalence of cannabis use in 2022 was almost 10% (31 million people).

3. ASIA

The estimated annual prevalence of cannabis use in Asia is much lower than in other regions, at 2%, but because of the size of the population, this translates to about 62 million users, which is almost a third (27%) of the estimated global number of cannabis users.

4. OCEANIA

Cannabis use is significantly higher than the global average; in the Australia and New Zealand sub-region, the prevalence of cannabis use is above 10%. However, and in contrast to Asia, since this is a much smaller population than in other regions, this translates into around 3.4 million users.

5. EUROPE

Cannabis use in Europe among the population aged 15-64 is 5.59% (more than 30 million users), about the same as the global average, but with a higher prevalence in Western and Central Europe. Cannabis use among 15-16 year olds is increasing compared to the overall average for this age, as discussed above..

To sum up, cannabis use and prevalence are increasing globally, with significant variations by region and age group.

41 World Drug Report 2023 - special points of interest. Available at: https://www.unodc.org/res/WDR-2023/WDR23_SPI_Spanish.pdf
42 2023 NSDUH Detailed Tables. Substance Abuse and Mental Health Services Administration. https://www.samhsa.gov/data/report/2023-nsduh-detailed-tables (Accessed on July 30, 2024).

06

SITUATION AT EUROPEAN LEVEL

GO TO INDEX

The EUDA provides the European Union (EU) and its member countries with factual, objective, reliable, and comparable information on drugs and their consequences, at the European level, with the aim of guiding the development of addiction-related policies and directing initiatives in the fight against drugs at the European level.

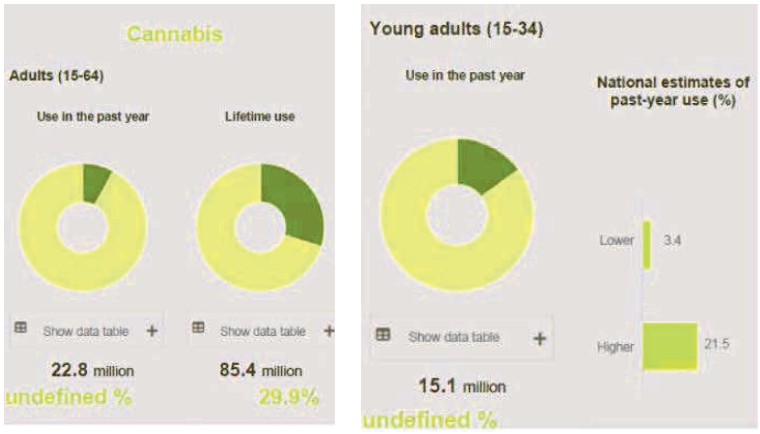
The EUDA compiles a series of cannabis-related indicators, which serve as the basis for the annual European Drug Reports (EDR).

The prevalence data presented in the EDR 202443 are based on the most recent general population surveys conducted by national reference centres, therefore the dates of the studies conducted may vary between countries between 2013 and 2023. In the case of Spain, the data compiled in this latest report correspond to the year 2022.

According to the 2024 EDR, cannabis is the most widely used illegal drug in Europe444546: 85.4 million people aged 15-64 (29.9% of the population) have used it at some time in their lives, and 22.8 million have used it in the last year (8% of the population). The proportion of use is comparatively high among younger European adults: an estimated 15.1 million people aged 15-34 have used cannabis in the past year.

About 1.3% (3.7 million) of adults (aged 15-64) are estimated to use cannabis daily or almost daily (i.e. they have used the drug for 20 days or more in the last month). Among young people aged 15-34, an estimated 2.0% (2.0 million) use cannabis daily or almost daily. About three quarters of adult users (aged 15-64) are male and the majority (54%) are under 35 years old.

Figure 6.1. Estimates of cannabis use in the European Union.



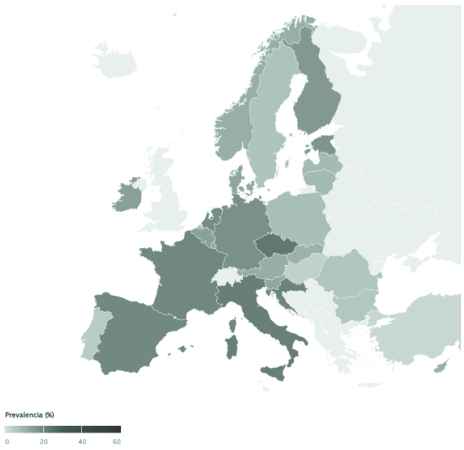
Source: EUDA. European Drug Report 2024.

Estimates of lifetime prevalence of drug use in the population aged 15-64 differ considerably between countries, as does the year of the last survey they present. Spain with 40.9% (2022 data) is above the European average (21.5%) and ranks second behind France (44.3%, 2021 data). The situation is similar when comparing the prevalence of cannabis use in the last 12 months among young adults (15-34): Spain's prevalence (19.1% in 2022) is above the European average (11.96%), ranking fifth this time behind the Czech Republic (22.9% in 2020), Italy (21.5% in 2022), Croatia (20.3% in 2019) and France (19.2% in 2021).

43 European Drug Report 2024. Disponible en: https://www.euda.europa.eu/publications/european-drug-report/2024_en
44 EU Drug Market: Cannabis. Disponible en: https://www.euda.europa.eu/publications/eu-drug-markets/cannabis/introduction_en
45 Informe Europeo sobre Drogas 2024: Tendencias y evoluciones. Disponible en: https://www.euda.europa.eu/publications/european-drug-report/2024_es#pdf
46 Cannabis: la situación actual en Europa (Informe Europeo sobre Drogas 2024). Disponible en: https://www.euda.europa.eu/publications/european-drug-report/2024/cannabis_es

In other words, between 2021 and 2022, cannabis use in Spain in the adult population has increased by 3.4% (37.5 to 40.9%), while the European average has decreased by 5.7% (27.2 to 21.5%). In the Spanish young adult population, the prevalence of drug use remains stable (19.1%).

Figure 6.2. Prevalence of cannabis use in the last 12 months among the population aged 15-34 in Europe (%).



Source: EUDA. European Drug Report 2024.

6.1. Regulatory bodies and commissions

The main bodies and commissions active at the global or European level in the field of drugs are the following:

- **The United Nations Commission on Narcotic Drugs (CND)** is a functional commission of the Economic and Social Council (ECOSOC) that functions as the main decision-making body of the United Nations system dealing with all drug-related issues. It was established in 1946 and meets annually. The Commission assumes a number of functions including advising the Council on the implementation of the international drug control conventions, advising on any matter relating to the control of narcotic drugs, psychotropic substances and substances used in their manufacture or deciding, on the basis of WHO recommendations, the inclusion of new narcotic drugs and psychotropic substances in the Schedules (annexed to the 1961[47] and 1971[48] Conventions), to modify their scheduling, as well as to amend, on the recommendation of the International Narcotics Control Board (INCB), Tables I and II (annexed to the 1988 Convention) of precursors frequently used in the manufacture of controlled substances.
  Regarding the classification of cannabis in international treaties, cannabis is included in Schedule I of the 1961 Convention and is therefore considered a narcotic drug, and its production, manufacture, export, import, distribution, trade, use and possession must be limited to medical and scientific purposes. In December 2020, the CND removed cannabis from Schedule IV[49] to allow for scientific research into its potential medicinal properties, but it remains on Schedule I because of its addictive potential and because it poses significant public health risks that must remain controlled under international conventions.

47 Convención Única de 1961 sobre Estupefacientes. Naciones Unidas. https://www.unodc.org/pdf/convention_1961_es.pdf
48 https://www.incb.org/documents/Psychotropics/conventions/convention_1971_es.pdf
49 https://www.unodc.org/documents/commissions/CND/CND_Sessions/CND_63Reconv ened/Press_statement_CND_2_December.pdf

- **The WHO Expert Committee on Drug Dependence (ECDD)**[50] consists of an independent group of experts in the field of drugs and medicines. The WHO was established in 1948 as a specialised agency of the United Nations to act as the directing and coordinating authority on international health matters and public health. The WHO convenes the Committee approximately once a year to review the public health impact of psychoactive substances and make recommendations to the international community. In 2018, it produced several documents on cannabis[51,52].
- **The International Narcotics Control Board (INCB)** is the independent monitoring body for the implementation of the United Nations international drug control treaties. It was established in 1968 under the Single Convention on Narcotic Drugs of 1961. The INCB publishes an annual report on the drug control situation in various parts of the world. In January 2024, it published a new List of Psychotropic Substances under International Control and forms[53] for reporting on substances controlled under the 1971 Convention on Psychotropic Substances.
- **The Council of Europe's International Co-operation Group on Drugs and Addictions (Pompidou Group)**[54] is the Council of Europe's platform for cooperation on drug policy issues. It was created in 1971, by French President Georges Pompidou together with the Prime Ministers of the other six European countries, in response to the dangers of growing drug use, especially among young people. It proposed the creation of a European framework for cooperation to combat the emerging trade. Its geographical scope currently covers 41 states, extending beyond the borders of Europe, with the European Commission, EUDA and CICAD as permanent observers. It is a forum for the exchange of information and opinions of a multidisciplinary nature (reduction of the supply and demand of drugs) that fosters cooperation at the government level. Its main objective is to provide practical assistance to drug policy makers, professionals and anyone working in this field. It pays particular attention to relations with the countries of Central and Eastern Europe. Spain was part of the Pompidou Group between 1984 and 2011.
- **Inter-American Drug Abuse Control Commission**[55]. Created by the Organisation of American States (OAS) in 1986. It is currently made up of 34 Member States from the American continent and there are also a number of third countries that have Observer status, including Spain. It is the OAS advisory and consultative body on drugs, which serves as a forum for its constituent Member States to discuss and find solutions to the drug problem, and provides technical assistance to enhance their capacity to counter the drug problem.
- **The United Nations Office on Drugs and Crime (UNODC** was established in 1997 through a merger between the United Nations Drug Control Programme (UNDCP) and the Centre for International Crime Prevention (CICP). UNODC is the specialised administrative unit of the United Nations Secretariat dealing with drugs, crime prevention and criminal justice, transnational organised crime, including its multiple activities and manifestations, corruption and the prevention of terrorism. UNODC publishes the annual World Drug Report56, which compiles estimates on the prevalence of drug use, as well as other indicators related to illicit drugs (cultivation, trafficking), based on information submitted by UN member states.

54 https://www.coe.int/en/web/pompidou
55 https://www.oas.org/ext/es/principal/oea/nuestra-estructura/entidades-y-organismos/comision-cicad/
56 United Nations Office on Drugs and Crime. World Drug Report 2024. United Nations publication; 2024. Disponible en: https://www.unodc.org/unodc/en/data-and-analysis/world-drug-report-2024.html.

- **The European Union Drugs Agency: (EUDA)[57].** Community Agency based in Lisbon, established by Regulation (EU) 2023/1322 of the European Parliament and of the Council of 27 June 2023[58], formerly known as the **OBSERVATORIO EUROPEO DE LA DROGA Y LAS TOXICOMANÍAS (OEDT) / EUROPEAN MONITORING CENTRE FOR DRUGS AND DRUG ADDICTION (EMCD-DA)**, European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), established by Council Regulation (EEC) No 302/93 of 8 February 1993. Its objectives include providing the European Union and its member countries with objective, reliable and comparable data at European level on the phenomenon of addiction and its consequences, with the aim of guiding the development of addiction-related policies and directing initiatives in the fight against drugs at European level. The EUDA publishes an annual European Drug Report (EDR)[59] which presents an overview of the drug phenomenon in Europe, covering supply, use and public health issues, as well as drug policy and responses. In addition, the EUDA has published in February 2025 the results of the European Web Survey on Drugs (EWSD) 2024[60], which reveal the current drug use habits of more than 66,000 Europeans.

57 https://www.euda.europa.eu/index_en
58 Reglamento (UE) 2023/1322 del Parlamento Europeo y del Consejo de 27 de junio de 2023 sobr e la Agencia de la Unión Europea sobre Drogas (EUDA) y por el que se deroga el Reglamento (CE) nº 1920/2006. Disponible en: https://www.boe.es/buscar/doc.php?id=DOUE-L-2023-80927
59 European Drug Report 2024. https://www.euda.europa.eu/publications/european-drug-report/2024_en
European Web Survey on Drugs (EWSD) 2024. Disponible en: https://www.euda.europa.eu/ewsd2024_en
60 European Web Survey on Drugs (EWSD) 2024. Available at: https://www.euda.europa.eu/ewsd2024_en

07

CANNABIS USE

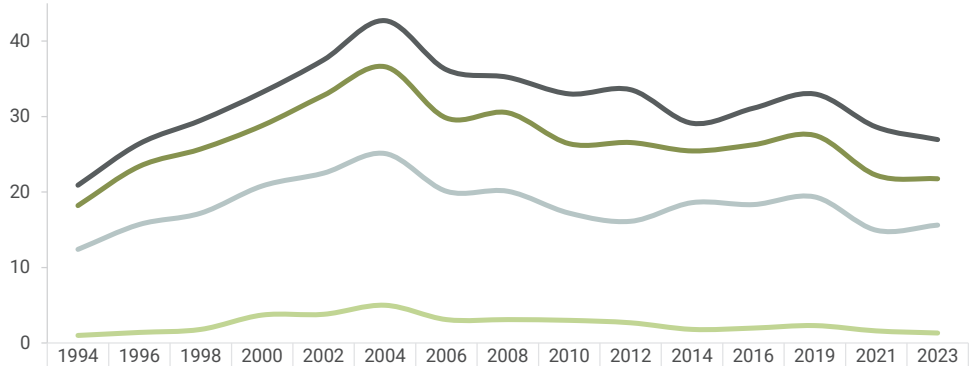
GO TO INDEX

7.1. Cannabis use among students aged 14 to 18

The Government Delegation for the National Plan on Drugs of the Ministry of Health has been carrying out the Survey on Alcohol and Drugs in Secondary Education in Spain (ESTUDES) every two years since 1994. The survey is applied to students aged 14 to 18, enrolled in Secondary Education (3rd and 4th year of Compulsory Secondary Education (ESO), 1st and 2nd year of Baccalaureate, 1st and 2nd year of Basic Vocational Training Cycles and Intermediate Vocational Training Cycles) in Spain. The sampling procedure is two-stage cluster sampling, randomly selecting schools as first-stage units and classrooms as second-stage units. The method of collection was through a standardised and anonymous questionnaire, self-administered and completed on paper and pencil during a normal class (45-60 minutes) by all students in the selected classrooms. The questionnaire is available in Spanish, Catalan, Basque, Galician and Valencian. The response rate among schools was 86.7% and among students 99.7%. In the year 2023 the final valid sample size was 42,208 pupils. The results for cannabis use in this population are shown below.

Cannabis has the highest prevalence of use of any illegal drug among students aged 14 - 18, with a lifetime prevalence of 26.9 % in 2023. The prevalence of cannabis use showed an increasing trend from 1994 to 2004, when it peaked at 42.7 per cent who reported having used it at some time. From that year onwards, prevalence began a downward trend, with slight upturns in 2012 and 2019. In 2023, lifetime prevalence has been the lowest since 1998 (26.9%). Looking at the time span of the last 30 days, students confirming cannabis use accounted for 15.6%.

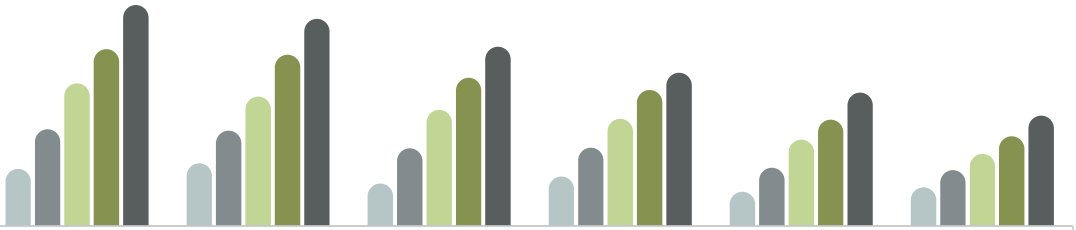
Figure 7.1. Prevalence of cannabis use among secondary school students aged 14-18 (%). Spain, 1994-2023.



	1994	1996	1998	2000	2002	2004	2006	2008	2010	2012	2014	2016	2019	2021	2023
Lifetime	20.9	26.4	29.5	33.2	37.5	42,.7	36.2	35.2	33.0	33.6	29.1	31.1	33.0	28.6	26.9
Last 12 months	18.2	23.4	25.7	28.8	32.8	36.6	29.8	30.5	26,4	26.6	25.4	26.3	27.5	22.2	21.8
Last 30 days	12.4	15.7	17.2	20.8	22.5	25.1	20.1	20.1	17.2	16.1	18.6	18.3	19.3	14.9	15.6
Daily last 30 days	1.0	1.4	1.8	3.7	3.8	5.0	3.1	3.1	3.0	2.7	1,8	2.0	2.3	1.6	1.3

SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

Figure 7.2. Prevalence of cannabis use among secondary school students aged 14-18, by sex and age (%). Spain, 2023.

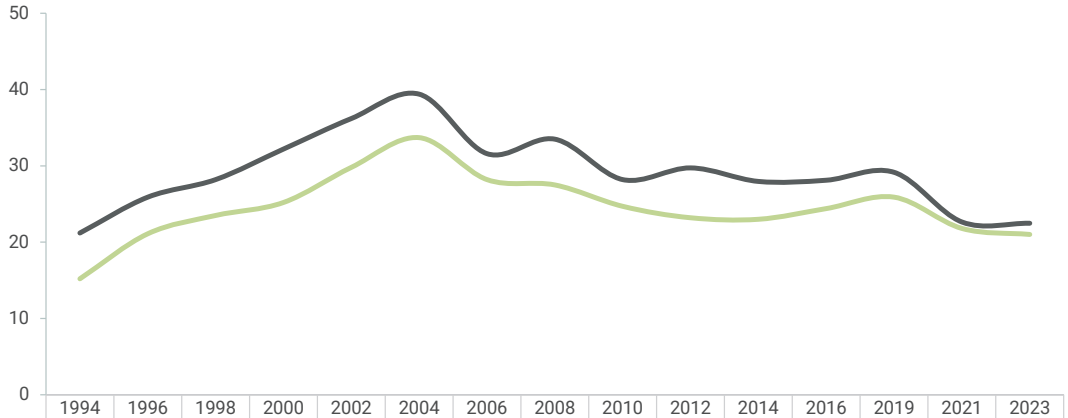


	Lifetime		Last 12 months		Last 30 days	
	Men	Women	Men	Women	Men	Women
14	12.2	13.3	9,1	10.6	7.3	8.2
15	20.7	20.4	16.6	16.7	12.4	11.9
16	30.4	27.6	24.8	22.9	18.4	15.4
17	37.8	36.5	31.6	29.0	22.7	19.2
18	47.2	44.2	38.2	32.7	28.5	23.6

SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

In general, cannabis use is more widespread among boys. The only exceptions are among 14-year-olds, where higher prevalence is recorded among girls in all the use ranges analysed. For both men and women, the prevalence of use increases with increasing age, in all time ranges. Throughout the historical series, cannabis use has always been more widespread among boys, however, as the years have passed, the gender gap has been narrowing over the years in all time ranges.

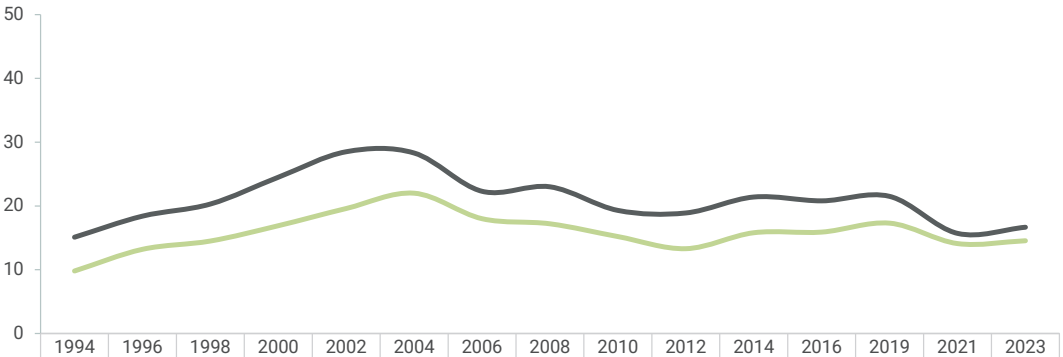
Figure 7.3. Prevalence of cannabis use in the last 12 months among secondary school students aged 14 - 18, by sex (%). Spain, 1994-2023.



	1994	1996	1998	2000	2002	2004	2006	2008	2010	2012	2014	2016	2019	2021	2023
Men	21.2	25.9	28.2	32.2	36.2	39.4	31.6	33.5	28.2	29.7	28.0	28.1	29.2	22.6	22.5
Women	15.2	21.1	23.5	25.2	29.8	33.7	28.2	27.5	24.7	23.2	23,0	24.4	25.9	21.8	21.0

SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

Figure 7.4. Prevalence of cannabis use in the last 30 days among secondary school students aged 14 - 18, by sex (%). Spain, 1994-2023.

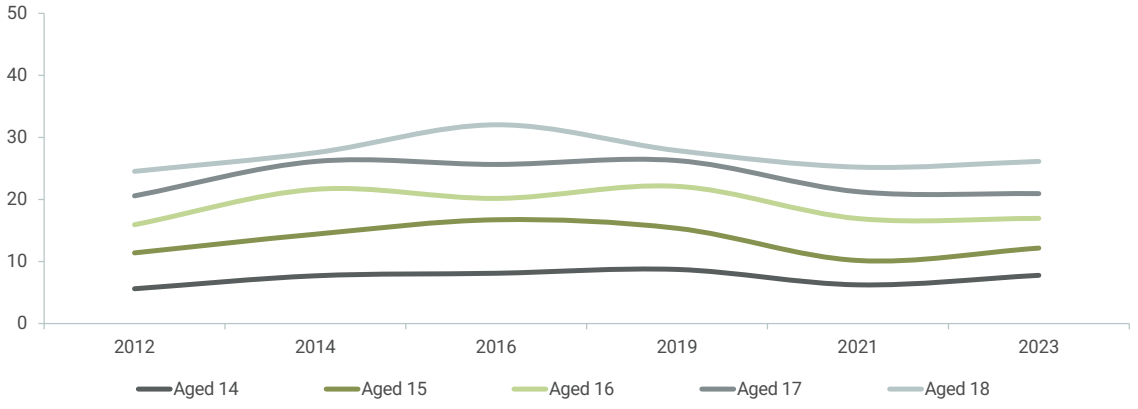


	1994	1996	1998	2000	2002	2004	2006	2008	2010	2012	2014	2016	2019	2021	2023
Men	15.1	18.4	20.3	24.5	28.5	28.3	22.3	23.0	19.3	18,.	21.4	20.8	21.5	15.7	16.7
Women	9.8	13.2	14.5	16.9	19.6	22.0	18.0	17.2	15.2	13.3	15.8	15.9	17.3	14.1	14.5

SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

Use over the last 30 days has stabilised in all age groups. Compared to 2021, a decrease in lifetime prevalence and last 12-months use is observed for both sexes, although there is an increase in the number of students reporting use in the last 30 days. Analysing the frequency of use in the last month, it is most frequent for both boys and girls to use cannabis sporadically (1 or 2 days). Only in residual cases does its use reach a frequency of 20 days or more (1.7% for boys and 1.0% for girls).

Figure 7.5. Prevalence of cannabis use in the last 30 days among secondary school students aged 14 - 18, by sex (%). Spain, 2012-2023.



SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

Table 7.1. Characteristics of cannabis use among secondary school students aged 14-18, by sex (%). Spain, 1996-2023.

	1996		1998		2000		2002		2004		2006		2008	
	M	W	M	W	M	W	M	W	M	W	M	W	M	W
Respondents (No.)	8,867	9,668	8,224	9,341	10,147	9,777	12,964	13,946	12,864	13,076	12,598	13,856	14,951	15,232
Lifetime prevalence (%)	28.8	24.2	31.6	27.6	362	30,1	46.6	34.6	45.3	40.2	38.0	34.6	37.8	32.8
Last 12-month prevalence (%)	25.9	21.1	28.2	23.5	32.2	25.2	36.2	29.8	39.4	33.7	31.6	28.2	33.5	27.5
Last 30-day prevalence (%)	18.4	13.2	20.3	14.5	24.5	16.9	25.8	19.6	28.3	22.0	22.3	18.0	23.0	17.2
Frequency of use in the last 30 days														
Never	81.6	86.8	79.7	85.5	75.5	83.1	74.2	80.4	71.7	78.0	77.7	82.0	74.7	82.5
1 to 2 days	7.3	7.2	8.4	7.4	8.6	8.8	8.6	9.1	9.4	9.8	7.4	7.4	7.9	7.1
3 to 5 days	4.1	2.7	3.8	3.0	4.7	3.5	4.8	3.8	4.4	4.5	5,3	4,8	5.0	4.6
6 to 9 days	2.9	1.3	3.2	1.9	3.1	1.9	3,9	2,8	3.5	2.6	2.5	1,8	2.6	1.8
10to 19 days	2.0	1.0	2.1	1.3	3.5	1.3	3,0	1,8	3.5	2.3	2.9	1,8	3.6	2.0
20 to 29 days	2.2	0.9	2.8	1.0	4.7	1.4	5,5	2,1	7.4	2.8	4.2	2.2	4.5	1.9

	2010		2012		2014		2016		2019		2021		2023	
	M	W	M	W	M	W	M	W	M	W	M	W	H	W
Respondents (No.)	15,595	16,372	13,769	13,734	18,405	19,081	17,649	17,720	18,489	19,521	11,116	11,205	21,247	20,961
Lifetime prevalence (%)	34.9	31.1	36.3	30.7	31,5	26,8	33,2	28,9	34,5	31,5	29,2	27,9	27,6	26,2
Last 12-month prevalence (%)	26.8	23.3	29.7	23.3	28,0	23,0	28,1	24,4	29,2	25,9	22,6	21,8	22,5	21,0
Last 30-day prevalence (%)	18.6	14.6	18.9	13.3	21,4	15,8	20,8	15,9	21,5	17,3	15,7	14,1	16,7	14,5
Frequency of use in the last 30 days														
Never	80.3	84.7	81.1	86.7	83.1	87.9	84.2	88.2	82.3	86.6	87.6	89.1	89.1	90.5
1 to 2 days	6.9	6.8	7.1	6.2	6.5	6.0	5.7	5.5	7.0	6.5	5.1	5.4	4,7	4,8
3 to 5 días	3.9	3.7	3.9	3.0	3.9	2.8	3.6	2.7	3.8	3.1	2.6	2.2	2.4	2.1
6 to 9 días	2.2	1.4	2.1	1.3	2.0	1.1	1.8	1.3	1.5	1.2	1.2	1.0	1.0	0.8
10 to 19 días	2.5	1.6	2.0	1.3	1.9	1.2	1.9	1.1	2,1	1.2	1.3	1.2	1.2	0.8
20 to 29 días	4.3	1.8	3.8	1.5	2.6	1.0	2.7	1.3	3.3	1.4	2.1	1.1	1.7	1.0

SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

Characteristics of cannabis use: quantity and type

In terms of quantity used, on the day that a student has used cannabis in the last 30 days, he or she has smoked 3.4 joints on average. Boys have a more intensive use of this substance, as when they use, on average, they smoke more than one joint more than that reported by girls (4.0 vs. 2.8 joints). With regard to the form of cannabis use, all options have a similar weight (mainly marijuana, mainly hashish and both types) among students aged 14-18 who have used cannabis in the last month, with a slightly higher prevalence of marijuana use, especially among girls.

Table 7.2. Characteristics of cannabis use of secondary school students aged 14 - 18 who have used cannabis in the last 30 days, by sex (%). Spain, 2016-2023.

		2016	2019	2021	2023		
		TOTAL	TOTAL	TOTAL	TOTAL	MEN	WOMEN
Type of cannabis use	Mainly marijuana (herbal)	51.1	43.8	49.8	35.2	32.2	38,7.
	Mainly hashish (resin, chocolate)	12.2	19.3	16.7	30.2	31.7	28.4
	Both types	36.7	37.0	33.5	34.6	36.1	32.9
Mixing cannabis with tobacco	Yes	82.4	87.1	87.7	75.7	74.4	77.2
	No	17.6	12.9	12.3	24.3	25.6	22.8
Average number of joints smoked on the day cannabis is used		3.4	3.4	3.3	3.4	4.0	2.8

SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

Among cannabis users, 30.2% have mainly used hashish or resin, highlighting the significant increase in this form of cannabis use compared to the data from the last surveys (13.5 percentage points compared to 2021). On the other hand, the majority of users smoke cannabis by mixing it with tobacco (75.7%). However, this edition highlights the increase in those who use cannabis without mixing it with tobacco, which has risen by 12 percentage points compared to the figure for 2021.

Table 7.3. Characteristics of cannabis use of secondary school students aged 14 - 18 who have used cannabis in the last 30 days, by sex (%). Spain, 2016-2023.

	2016	2019	2021	2023		
	TOTAL	TOTAL	TOTAL	TOTAL	MEN	WOMEN
As a joint or spliff	97.7	98.9	91.4	96.7	96.8	96.7
Using waterpipes, bongs, hookahs or shishas	17.0	11.9	10.3	10.1	12.7	7.0
Orally: cakes, biscuits, etc.	5.7	2.0	1.4	9.4	9.1	9.8
Using electronic cigarettes	1.8	5.4	5.3	4.5	5.8	2.9

SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

The majority of those who use cannabis in the last 30 days do so in the form of joints. Of particular note in recent years has been the increase in the use of oral cannabis.

With regard to the **profile** of those who have used cannabis in the last 30 days, they are men, with an average age of 16, whose parents have mostly secondary or university education and whose economic situation is considered to be more or less in line with the average. Compared to all 14-18 year-old students surveyed, the percentage of parents who have only completed primary education among those who have used cannabis in the last month is higher.

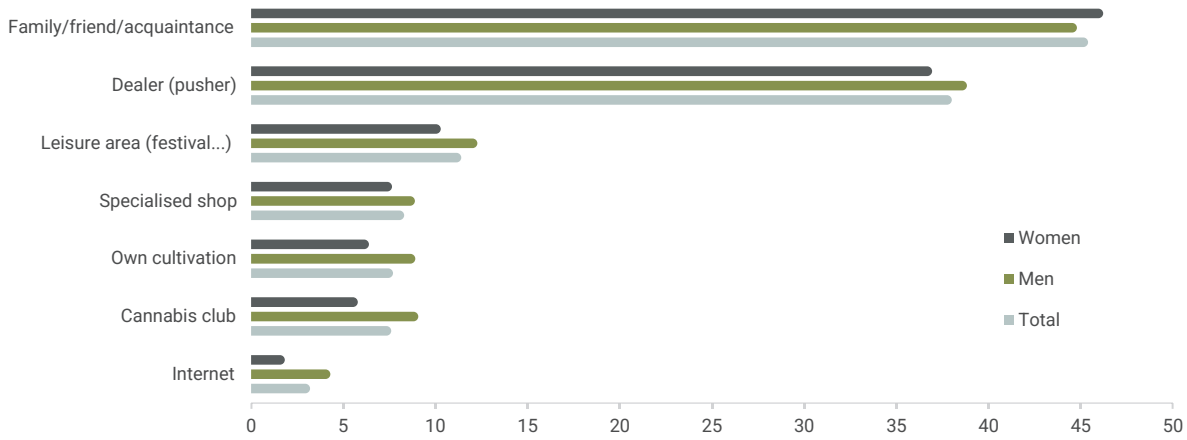
Table 7.4. Socio-demographic characteristics of students aged 14-18 compared to those who have used cannabis in the last 30 days (%). Spain, 2023.

		Total students 14-18 years	Cannabis users in the last 30 days
Sex	Men	50.8	54.0
	Women	49.2	46.0
Age	Average age	15.7	16.2
Born outside Spain (%)		8.6	9.1
Studies completed by your father	No education/primary education	7.8	9.5
	Secondary	47.4	49.7
	University	44.8	40.8
Studies completed by your mother	No education/primary education	10.2	14.1
	Secondaru	53.2	54.8
	University	36.6	31.2
Your family's financial situation	Above average	13.2	15.7
	About average	82.2	77.6
	Below average	4.6	6.7

SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

With regard to **obtaining cannabis**, students aged 14 to 18 mostly obtain it through friends, relatives or dealers, while the Internet is the least common way of obtaining it. In terms of sex, women are more likely than men to use family or friends to obtain cannabis, but men are more likely to use other methods of obtaining cannabis.

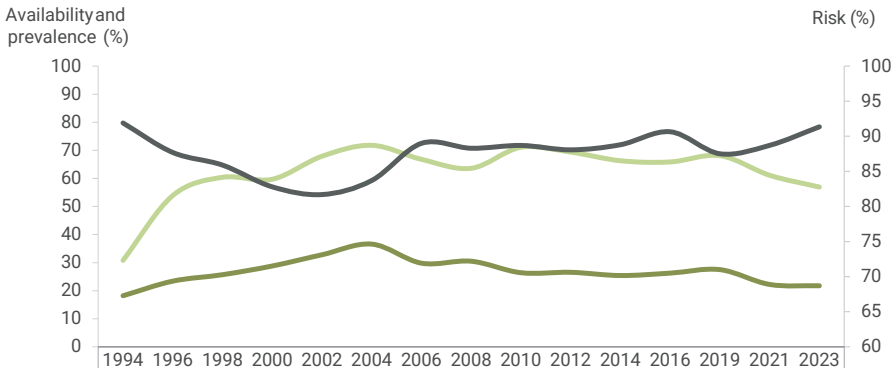
Figure 7.6. Modes of obtaining cannabis among secondary school students aged 14-18 who have used cannabis in the last 30 days, by sex (%). Spain, 2023.



SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

Over time, it is observed that as the **perception of risk** increases and the **perception of availability** decreases, the prevalence of use decreases.

Figure 7.7. Prevalence of cannabis use in the last 12 months, perceived risk of regular cannabis use and perceived availability of cannabis among secondary school students aged 14-18 years (%). Spain, 1994-2023.



	1994	1996	1998	2000	2002	2004	2006	2008	2010	2012	2014	2016	2019	2021	2023
Perceived availability	30.8	53.9	60.4	59.7	67.9	71.8	66.8	63.6	71.1	69.4	66.3	65.9	68.1	61.1	56.9
Prevalence of use in the last year	18.2	23.4	25.7	28.8	32.8	36.6	29.8	30.5	26.4	26.6	25.4	26.3	27.5	22.2	21.8
Perceived risk of regular use	91.9	87.7	85.9	82.8	81.7	83.7	89.0	88.3	88.7	88.1	88.8	90.7	87.5	88.7	91.4

SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

The vast majority of students aged 14-18 who have not tried cannabis state that they would not try it, even if it were legal. At the other end of the spectrum, the **legal status** of cannabis would encourage 12.9% to try cannabis, down 5.3 percentage points from 2021.

Table 7.5. Percentage of 14 to 18-year-old students who say they would or would not try hashish or marijuana if it were legal, among 14 to 18-year-old students who have never tried it (%). Spain 2016-2023.

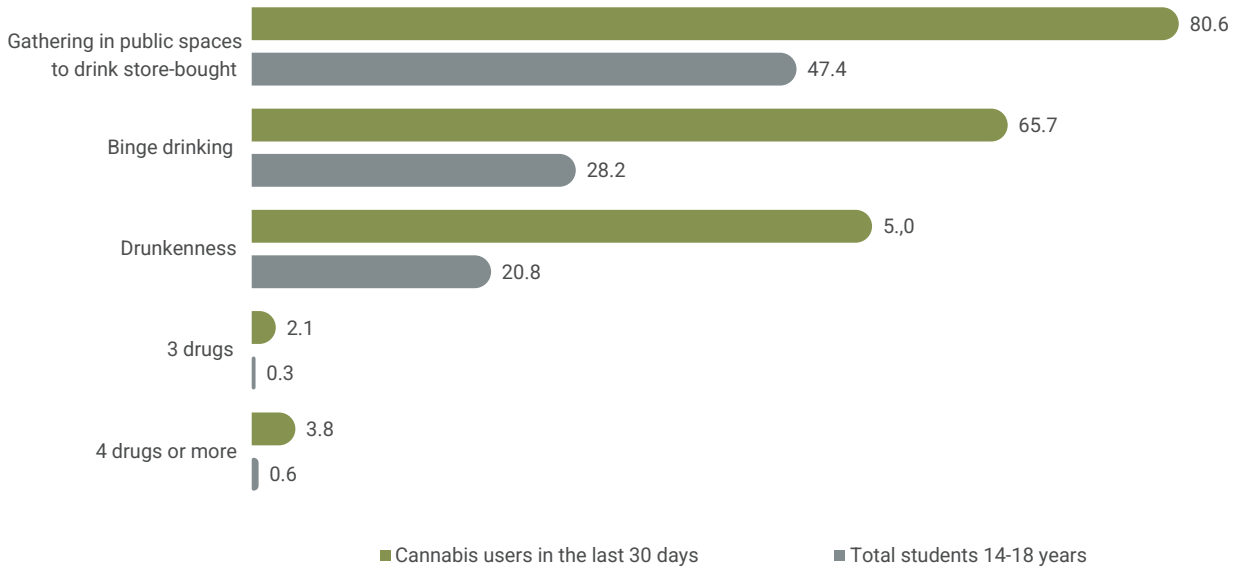
		2016	2019	2021	2023
If it were legal to use hashish or marijuana, would you try it?	Yes	12.5	15.4	18.2	12.9
	No	87.5	84.6	81.8	87.1

SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

Consequences of cannabis use

Cannabis use in the last 30 days is related to **polydrug use** of other psychoactive substances and **heavy alcohol use**.

Figure 7.8. Prevalence of drunkenness and binge drinking in the last 30 days and "botellón" in the last 12 months and number of drugs used in the last 30 days among the population of students aged 14-18 and among cannabis users in the last 30 days (%). Spain, 2023.



SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

Among students aged 14-18 years who have used cannabis in the last month, there is a higher prevalence of use of legal drugs, illegal drugs, NPS and the use of stimulant substances to improve study performance. With regard to behavioural addictions, a higher prevalence of online and face-to-face gambling and a higher prevalence of possible problem gambling are also observed. The prevalence of possible video gaming disorder is somewhat higher and in this group of students it is observed that they have more money per week to spend on going out with friends, going to the cinema or going out for a drink.

Table 7.6. Prevalence of use of legal and illegal psychoactive substances, behavioural addictions and other socio-demographic variables among students aged 14-18 and among students aged 14-18 who have used cannabis in the last 30 days (%). Spain 2023.

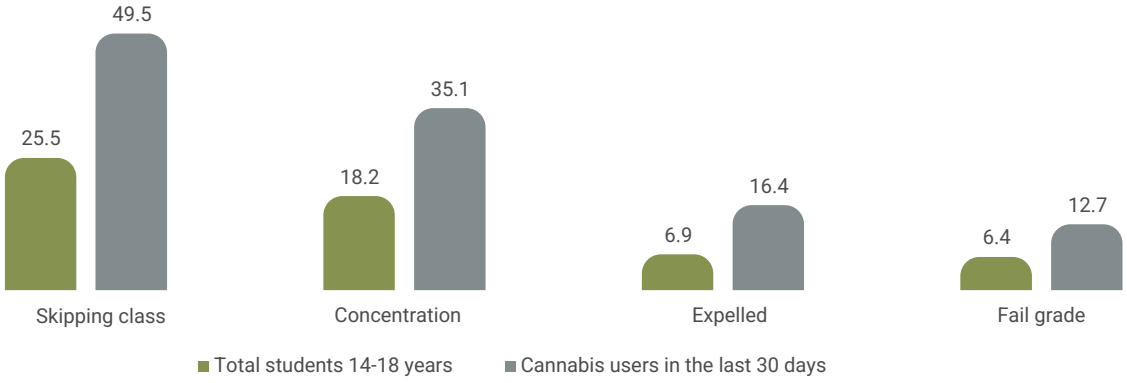
		Total students 14-18 years	Cannabis users in the last 30 days
Average money spent on going out with friends	Average in euros	15.6	21.0
Possible video gaming disorder	DSM-5≥5	5.1	7.2
Gambling with money last 12 months	Online gambling	10.7	20.4
	Face-to-face gambling	17.7	32.6
Possible problem gambling	Lie/Bet>1	4.0	10.5
Legal drug use	Legal drugs last 30 days	61.1	93.6
Illegal drug use	Illegal drugs last 12 months	23.1	100.0
Use of new psychoactive substances (NPS)	Lifetime prevalence of NPS	3.7	16.0
Stimulants for studying	Lifetime prevalence of stimulants	7.3	22.2

Lie/Bet[61]. Questionnaire developed by Johnson et al (1997) following DSM-IV criteria and serving as a screening tool for problem gambling.
DSM-5. Fifth edition of the Diagnostic and Statistical Manual of Mental Disorders of the American Psychiatric Association in order to detect a possible video gaming disorder.
SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

In terms of **academic performance**, students who have used cannabis in the last 30 days have skipped classes more, have concentrated less in class, have been expelled from school more often and have failed more often than all students of the same age.

61 Johnson EE, Hamer R, Nora RM, Tan B, Eisentsein N, Engerhart C. The Lie/Bet questionnaire for screening pathological gamblers. Psychol Rep, 80 (1997), pp. 83-8. http://dx.doi.org/10.2466/pr0.1997.80.1.83.

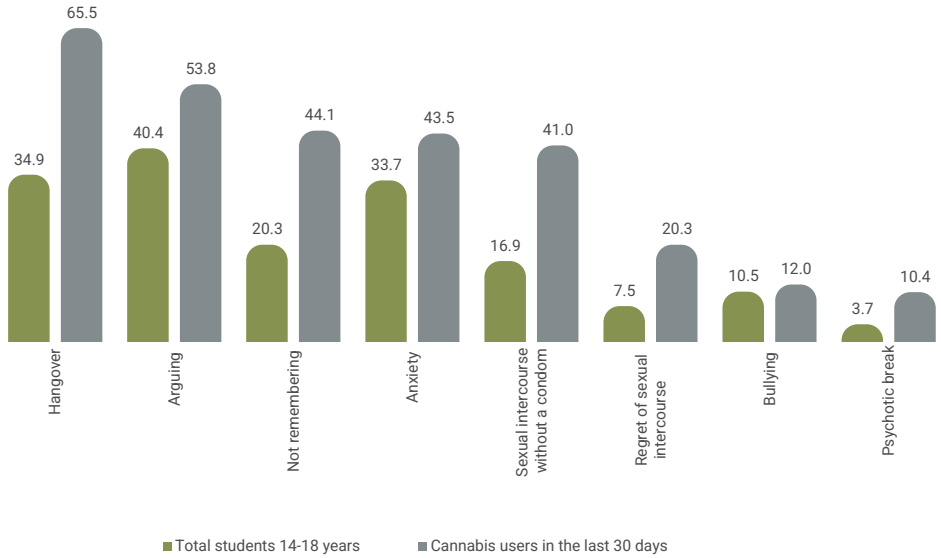
Figure 7.9. Percentage of all secondary school students aged 14-18 and percentage of students who have used cannabis in the last 30 days who have skipped classes, have not been able to concentrate in class, have been expelled from school or have received an average failing grade (%). Spain, 2023.



Skipping class: In the last 30 days, has skipped class
Concentration: In the last 12 months, has not been able to concentrate in school the day after going out
Expelled: In the last 12 months, has been expelled from school
Fail grade: Usually scores between 0 and 4.
SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

It is also observed that there is a higher percentage of students aged 14-18 who have used cannabis in the last month and who engage in **risky behaviours** compared to all students of the same age. These behaviours are: having a major conflict or argument with parents or siblings, not being able to remember what happened the night before after going out, having a hangover the day after going out, having sex that they regretted the day after, having unsafe sex, having a psychotic break (hallucinations, delusions, etc.), having an anxiety attack or being bullied through the internet or by other means (direct or indirect physical, verbal, psychological, sexual or social).

Figure 7.10. Percentage of all secondary school students aged 14-18 and percentage of students who have used cannabis in the last 30 days who have had a hangover or could not remember what happened the night before on the next day after going out, who have been bullied, have had anxiety, a psychotic break or had unsafe sex (%). Spain, 2023.



SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

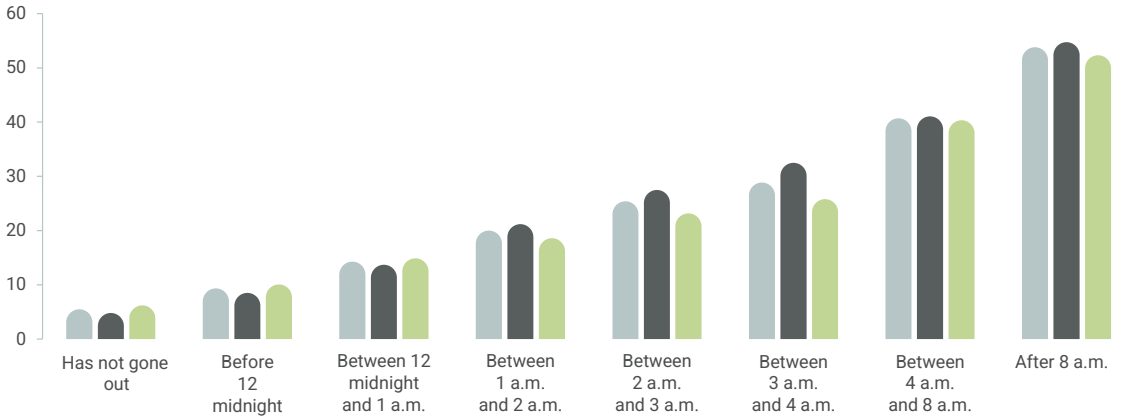
With regard to the **frequency of nights out**, it is observed that there is a higher prevalence of cannabis use in the last year among students who go out more times a week, with the prevalence of use being higher among boys than girls at higher frequencies of nights out.

Figure 7.11. Prevalence of cannabis use in the last 12 months among secondary school students aged 14-18, by frequency of nights out in the last 12 months and by sex (%). Spain, 2023.

SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

A very similar behaviour occurs with **the time of returning home,** with students who return home later on the day they have a night out having a higher prevalence of cannabis use in the last year, with the prevalence of use being higher among boys than girls at later return times.

Figure 7.12. Prevalence of cannabis use in the last 12 months among secondary school students aged 14-18, by time of return to home in the last 12 months and by sex (%). Spain, 2023.



SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

Table 7.7. Percentage of students who have driven a motor vehicle under the influence of cannabis, or who have been a passenger in a motor vehicle driven by someone under the influence of cannabis, or who have been involved in a traffic accident as the driver of a motorbike or other motor vehicle having consumed alcohol or an illegal drug in the 2 hours prior to the accident, or who have been involved in a fight or physical aggression having consumed alcohol or an illegal drug in the 2 hours prior to the fight, among secondary school students aged 14-18, by sex (%). Spain, 2019 - 2023.

	2019			2021			2023		
	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN
Passenger	9.4	9.8	9.0	6.9	7.4	6.4	6.8	6.9	6.7
Fight	6.3	8.0	4.6	4.8	6.2	3.3	4.9	5.9	3.9
Driving	1.9	3.0	0.9	1.5	2.2	0.8	1.5	2.3	0.6
Road traffic accident	0.6	0.8	0.5	0.5	0.7	0.4	1.0	1.3	0.7

SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

Over the years, there is a lower percentage of students who have been **passengers** in a motor vehicle driven by someone under the influence of cannabis and a lower percentage of students who have themselves **driven** under the influence of cannabis. There is also a decrease in the percentage of students who have been involved in a **fight or have been physically assaulted** after consuming alcohol or USING illegal drugs in the 2 hours prior to the fight. However, there is a small increase in the percentage of students who have been involved in a **traffic accident** as drivers of a motorbike or other motor vehicle, having consumed alcohol or used an illegal drug in the 2 hours prior to the accident.

Among those students who have used cannabis in the last 30 days, these behaviours increase fourfold, and are more prevalent, as in all students, among males.

Table 7.8. Percentage of students who have driven a motor vehicle under the influence of cannabis, or who have been a passenger in a motor vehicle driven by someone under the influence of cannabis, or who have been involved in a traffic accident as the driver of a motorbike or other motor vehicle having consumed alcohol or an illegal drug in the 2 hours prior to the accident, or who have been involved in a fight or physical aggression having consumed alcohol or an illegal drug in the 2 hours prior to the fight, among secondary school students aged 14-18, who have used cannabis in the last 30 days, by sex (%). Spain, 2023.

	2023		
	TOTAL	MEN	WOMEN
Passenger	27.6	28.5	26.5
Fight	17.2	20.0	13.9
Driving	8.9	13.4	3.8
Road traffic accident	3.7	5.0	2.2

SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

Protective factors against cannabis use

Among cannabis users in the last 30 days, fewer students were found to have played a sport, read books for fun or engaged in other hobbies such as playing an instrument, singing, painting or writing than among all students aged 14-18.

Table 7.9. Percentage of all secondary school students aged 14-18 and percentage of students who have used cannabis in the last 30 days who have played a sport, read books for fun or practised other hobbies such as playing an instrument, singing, painting or writing (%). Spain, 2023.

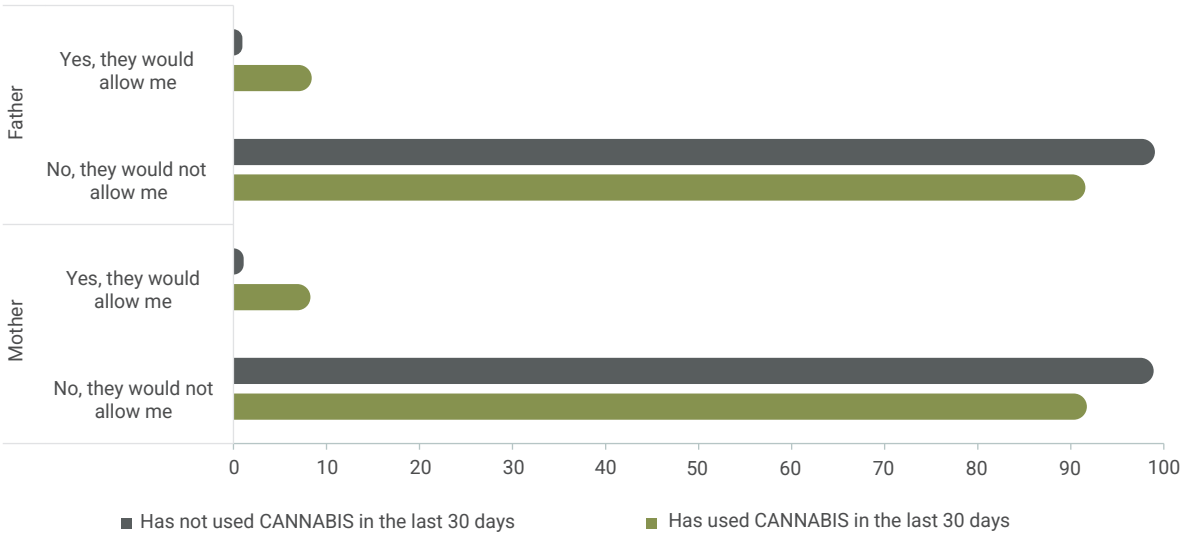
		Total students 14-18 years	Cannabis users in the last 30 days
Sport	Never	11.2	15.4
	Occasionally	16.6	18.1
	Frequently	72.2	66.6
Reading	Never	38.7	51.9
	Occasionally	38.7	32.7
	Frequently	22.6	15.4
Other hobbies	Never	42.2	49.5
	Occasionally	24.6	23.2
	Frequently	33.3	27.3

SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

Permissiveness towards cannabis use

The more permissive children believe their mothers or fathers to be about cannabis use, the more cannabis the children use.

Figure 7.13. Permissiveness of mothers and fathers towards cannabis use among 14-18 year-old secondary school students according to whether or not they have used cannabis in the last 30 days (%). Spain, 2023.



SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

Relationships with parents and cannabis use

Students aged 14-18 who have used cannabis in the last 30 days consider their relationships with their mother and father to be worse than students of the same age who have not used cannabis in the last month.

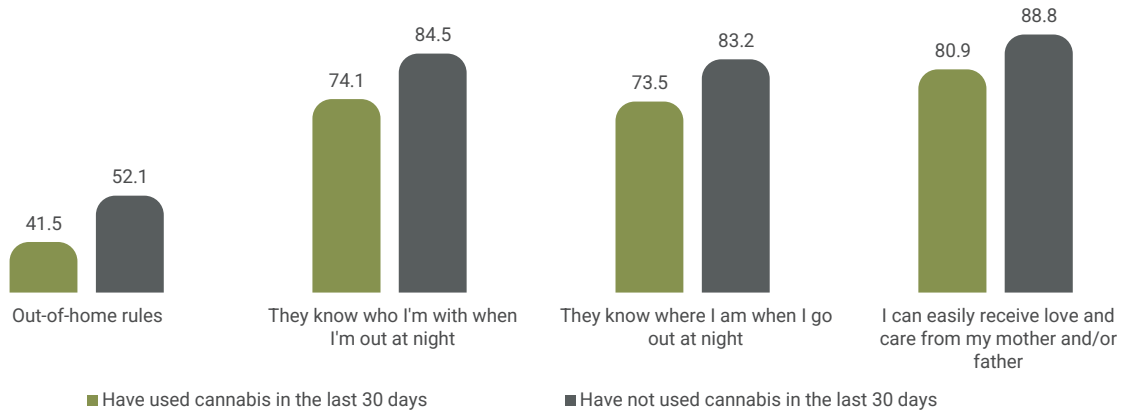
Table 7.10. Relationship of mothers and fathers with their 14-18 year-old children who are secondary school students by whether or not they have used cannabis in the last 30 days (%). Spain, 2023.

		Cannabis use in the last 30 days	
		Yes	No
Relationship with mothers	Fairly bad to very bad	4.4	1.8
	Regular	18.1	11.9
	Fairly good to very good	77.5	86.3
Relationship with fathers	Fairly bad to very bad	7.5	3.9
	Regular	24.0	16.7
	Fairly good to very good	68.5	79.4

SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

In general, families where children perceive that rules are in place, or their parents know when they go out where they are going and with whom they are going, or where children feel loved, it is observed that cannabis use in in the last 30 days by student children aged 14 to 18 is lower.

Figure 7.14. Setting of rules and relationships with mothers and fathers according to whether or not their 14-18 year-old children who are secondary school students have used cannabis in the last 30 days (%). Spain, 2023.



SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

Prevalence of alcohol consumption by Autonomous Communities and Cities

This section presents cannabis use in the different Autonomous Communities and Autonomous Cities in the different time ranges. It should be borne in mind that the sample corresponding to Ceuta and Extremadura was small and the margin of error high, so that comparisons between the different Autonomous Communities should be made with caution.

The highest prevalence of lifetime cannabis use is found among students in the Balearic Islands, Catalonia and the Valencian Community, with figures equal to or higher than 29%. With regard to use in the last year, the Balearic Islands is also in first place with a prevalence of 26.5%, followed by Extremadura, Murcia, Castilla la Mancha and the Canary Islands with figures of around 24%.

At the other end are Ceuta and Melilla, in the case of occasional use (once in a lifetime), with prevalences of 10.8% and 11.1% respectively; while, in the last 12 months, the lowest levels of use are found in the Basque Country and La Rioja, with figures of around 8%.

Regarding recent use (last month), once again the highest figures are found in the Balearic Islands (19%) and the lowest in Ceuta and Melilla (around 6%).

Table 7.11. Prevalence of cannabis use among secondary school students aged 14-18 by Autonomous Region/City (%). Spain, 2023.

		Lifetime			Last 12 months			Last 30 days		
	Sample size	Prevalence	LOWER IC95%	UPPER IC95%	Prevalence	LOWER IC95%	UPPER IC95%	Prevalence	LOWER IC95%	UPPER IC95%
ANDALUSIA	4,021	23.3	22.0	24.6	18.7	17.5	19.9	13.6	12.6	14.7
ARAGON	2,251	28.8	27.0	30.7	23.6	22.3	25.4	16.9	15.3	18.4
ASTURIAS	2,015	27.1	25.2	29.1	22.2	20.9	24.0	15.6	14.0	17.1
BALEARIC ISLANDS	2,207	31.4	29.4	33.3	26.5	25.2	28.4	19.0	17.4	20.7
CANARY ISLANDS	2,488	26.1	24.4	27.8	21.1	19.8	22.7	15.9	14.5	17.4
CANTABRIA	1,865	28.7	26.6	30.7	24.0	22.6	25.9	17.9	16.2	19.7
CASTILIA AND LEÓN	2,574	27.5	25.7	29.2	22,0	20.7	23.6	14.8	13.4	16.2
CASTILLA-LA MANCHA	2,110	26.2	24.3	28.1	20.4	19.1	22.1	14.4	12.9	15.9
CATALONIA	2,675	29.6	27.8	31.3	24.0	22.6	25.6	17.0	15.6	18.4
VALENSIA	3,636	29.0	27.6	30.5	22.3	21.0	23.6	15.5	14.3	16.7
EXTREMADURA	847	25.9	23.0	28.9	20.5	19.3	23.2	14.9	12.5	17.3
GALICIA	2,185	28.6	26.7	30.5	24.7	23.4	26.5	18.5	16.9	20.2
MADRID	3,901	26.9	25.5	28.3	21.8	20.5	23.1	15.1	14.0	16.3
MURCIA	2,100	22.0	20.2	23.8	17.6	16.4	19.2	12.4	1.,0	13.8
NAVARRE	2,151	28.0	26.2	29.9	23.4	22.1	25.2	16.9	15.3	18.4
BASQUE COUNTRY	1,184	28.7	26.2	31.3	24.1	22.7	26.5	19.3	17.1	21.5
RIOJA	1,586	24.8	22.7	26.9	20.3	19.1	22.3	14.4	12.7	16.1
CEUTA	682	11.1	8.7	13.4	7.8	7.0	9.8	5.6	3.8	7.3
MELILLA	1,730	10.8	9.3	12.3	8.3	7.4	9.6	6.1	4.9	7.2
TOTAL	42,208	26,9	26,5	27,4	21,8	20,5	22,1	15,6	15,3	16,0

SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).
*The values for these Autonomous Communities and Cities should be interpreted with caution due to the small sample size.

Figure 7.15. Prevalence of cannabis use in the last 30 days among secondary school students aged 14-18 by Autonomous Community/city (%). Spain, 2023.

SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

In most autonomous communities, use is more widespread among boys than among girls, with the highest differences being observed in Aragón for the time span of the last 12 months and Extremadura for occasional use (once in a lifetime).

Table 7.12. Lifetime and last 12-month prevalence of cannabis use in the population aged 15-64 by Autonomous Community/City and sex (%). Spain, 2023.

	Lifetime		Last 12 months	
	Men	Women	Men	Women
ANDALUSIA	24.7	21.8	20.0	17.2
ARAGON	30.6	26.8	26.2	20.6
ASTURIAS	26.9	27,5	22.1	22.3
BALEARIC ISLANDS	30,9	31.8	26.6	26.4
CANARY ISLANDS	26.9	25.3	21.8	20.3
CANTABRIA	29.4	28.0	23.8	24,1
CASTILA AND LEON	28.8	26.2	23.9	2.0,
CASTILLA-LA MANCHA	26.8	25.6	20.9	19.8
CATALONIA	29.3	29.8	24.0	23.9
VALENSIA	29.2	28.9	22.5	22.1
EXTREMADURA*	28.9	22.6	22.7	18.1
GALICIA	31.1	25.9	26.7	22.4
MADRID	26.1	27.6	20.7	22.8
MURCIA	24.5	19.5	20.0	15.2
NAVARRE	28.5	27.6	24.3	22.5

	Lifetime		Last 12 months	
	Men	Women	Men	Women
BASQUE COUNTRY	30.8	26.1	26.1	21.5
RIOJA	27.2	21.8	22.1	18.2
CEUTA*	10.6	11.4	8.5	7.3
MELILLA	12.8	9.1	10.6	6.4
TOTAL	27.6	26.2	22.5	21.0

SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).
*The values for these Autonomous Communities and Cities should be interpreted with caution due to the small sample size.

The first use of cannabis among the population is between 14.7 and 15.2 years of age. The autonomous community where cannabis use starts earliest is Catalonia (14.7 years), while the highest age of onset is in Ceuta and Melilla (15.2 years).

Table 7.13. Average age of onset of cannabis use among Secondary School students aged 14-18 by autonomous community/city (%). Spain, 2023.

	Sample size	Average age of onset of cannabis use
ANDALUSIA	4,021	15.1
ARAGON	2,251	14.9
ASTURIAS	2,015	14.9
BALEARIC ISLANDS	2,207	14.9
CANARY ISLANDS	2,488	14.8
CANTABRIA	1,865	14.9
CASTILA AND LEON	2,574	15.0
CASTILLA-LA MANCHA	2,110	14.9
CATALONIA	2,675	14.7
VALENSIA	3,636	14.9
EXTREMADURA*	847	15.0
GALICIA	2,185	15.0
MADRID	3,901	14.9
MURCIA	2,100	14.9
NAVARRE	2,151	14.8
BASQUE COUNTRY	1,184	14,9
RIOJA	1,586	14.8
CEUTA*	682	15.2
MELILLA	1,730	15.2
TOTAL	42,208	14.9

SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).
*The values for these Autonomous Communities and Cities should be interpreted with caution due to the small sample size.

7.2. Cannabis use among the population aged 15 to 64

The Survey on Alcohol and other Drugs in Spain (EDADES 2024) was conducted among the general population aged 15-64 living in households. It has been carried out every two years since 1995 and is promoted and financed by the DGPNSD and has the collaboration of the Autonomous Communities and Cities. The data collection period for the 2024 edition was from 12 February to 21 June. The questionnaire and methodology used for this survey are quite similar to those used in other EU countries and the United States, allowing for international comparisons.

More detailed information on this survey can be found at the following link:

https://pnsd.sanidad.gob.es/profesionales/sistemasInformacion/sistemaInformacion/encuestas_EDADES.htm

The main results concerning cannabis use are summarised below.

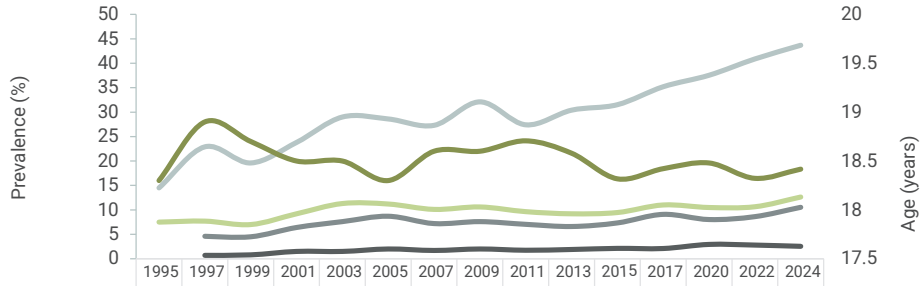
Prevalence of cannabis use

Cannabis is the drug with the highest prevalence of use in Spain among the population aged 15 to 64 years. In 2024, the lifetime prevalence of cannabis use was 43.7%, continuing the upwards trend which began in 2013 and reaching the highest in the historical series in this edition.

With regard to use in the last year, we find a prevalence of 12.6%, and 10.5% when the last-month use is analysed. In both scenarios the figure is higher than in 2022.

Finally, 2.5% of the population acknowledges having used cannabis daily in the last month. In contrast to the rest of the time ranges, this figure does not exceed the figure recorded two years ago.

Figure 7.16. Prevalence of cannabis use (%) and average age of onset of cannabis use (years) in the population aged 15-64 (%). Spain, 1995-2024.



	1995	1997	1999	2001	2003	2005	2007	2009	2011	2013	2015	2017	2020	2022	2024
Lifetime	14.5	22.9	19.6	23.8	29	28.6	27.3	32.1	27.4	30.4	31.5	35.2	37.5	40.9	43.7
Last 12 months	7.5	7.7	7.0	9.2	11.3	11.2	10.1	10.6	9.6	9.2	9.5	11.0	10.5	10.6	12.6
Last 30 days		4.6	4.5	6.4	7.6	8.7	7.2	7.6	7,0	6.6	7.3	9.1	8.0	8.6	10.5
Daily in the last 30 days		0.7	0.8	1.5	1.5	2.0	1.7	2.0	1,7	1.9	2.1	2.1	2.9	2.8	2.5
Average age of onset of use	18,3	18.9	18.7	18.5	18.5	18.3	18.6	18.6	18.7	18.6	18.3	18.4	18.5	18.3	18.4

SOURCE: OEDA Survey on Alcohol and Drugs in Spain (EDADES)

Average age of onset of use

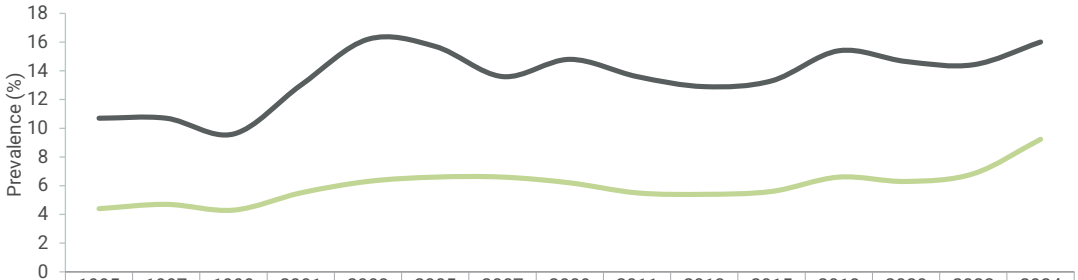
The average age of onset of use is slightly above 18 years, which has been stable throughout all editions. It is the illegal substance with the youngest age of onset of use (18.4 years). Men start using cannabis earlier than women (18.1 and 19 years respectively).

Prevalence of use by age and sex

In terms of **sex**, the last-year use of this substance is more common among men than among women (Figure 7.17), a situation that is repeated in all the time ranges analysed, and in all age ranges. The highest difference in prevalence between the sexes is found in lifetime cannabis use (in 2024, 51.3% of men have used cannabis compared to 36% of women), which translates into a difference of almost 15 percentage points.

Analysing prevalence by **age** of individuals, it can be observed that cannabis use decreases with increasing age. This is the case for both use in the last 12 months and in the last 30 days, and in both men and women (Figure 7.18 and 7.19).

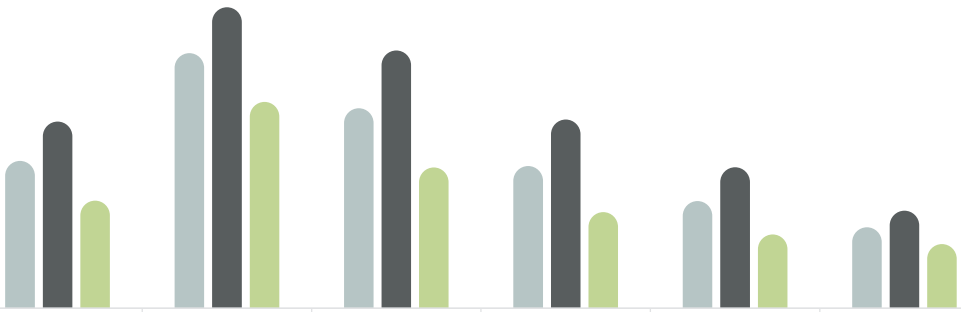
Figure 7.17. Prevalence of cannabis use in the last 12 months in the population aged 15-64, by sex (%). Spain, 1995-2024.



	1995	1997	1999	2001	2003	2005	2007	2009	2011	2013	2015	2018	2020	2022	2024
Men	10.7	10.7	9,6	13.0	16.2	15.7	13.6	14.8	13.6	12.9	13.3	15.4	14.6	14.4	16.0
Women	4.4	4.7	4.3	5.5	6.3	6.6	6.6	6.2	5.5	5.4	5.6	6.6	6.3	6.8	9.2

SOURCE: OEDA Survey on Alcohol and Drugs in Spain (EDADES)

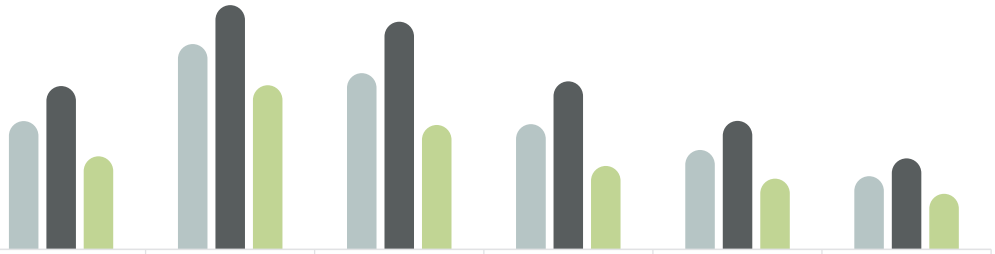
Figure 7.18. Prevalence of cannabis use in the last 12 months among the population aged 15-64, by sex and age (%). Spain, 2024.



	15-64	15-24	25-34	35-44	45-54	55-64
Total	12.6	21.9	17.1	12.2	9.2	6.9
Men	16.0	25.8	22.1	16.2	12.1	8.4
Women	9.2	17.7	12.1	8.2	6.3	5.5

SOURCE: OEDA Survey on Alcohol and Drugs in Spain (EDADES)

Figure 7.19. Prevalence of cannabis use in the last 30 days among the population aged 15-64, by sex and age (%). Spain. 2024.



	15-64	15-24	25-34	35-44	45-54	55-64
Total	10.5	16.9	14.5	10.3	8.2	6.0
Men	13.4	20.1	18.7	13.8	10.5	7.5
Women	7.6	13.5	10.2	6.8	5.8	4.6

SOURCE: OEDA Survey on Alcohol and Drugs in Spain (EDADES)

Characteristics of cannabis use

Looking at the **type of cannabis**, marijuana is historically more prevalent than hashish among those who have used cannabis in the last 30 days. 53.8% admitted to having smoked mainly marijuana, a percentage which shrinks notably for those who used mainly hashish (21.7%). Among women who have used marijuana, the predilection for marijuana is even more prominent (Table 7.14).

Regardless of sex, the **large majority** of cannabis users in the last month admitted to having mixed it with tobacco (90.6%). The **average number of joints** used in a single day is 2.6 joints, and this figure is somewhat higher among men (2.8) than among women (2.1) (Table 7.14). The **majority** (98.8%) **use cannabis in the form of joints**, and in much smaller proportions using water pipes (3.9%), orally (1.3%) or vaping (0.4%).

Table 7.14. Characteristics of cannabis use in the population aged 15-64 who have used cannabis in the last 30 days, by sex (%). Spain, 2015-2024.

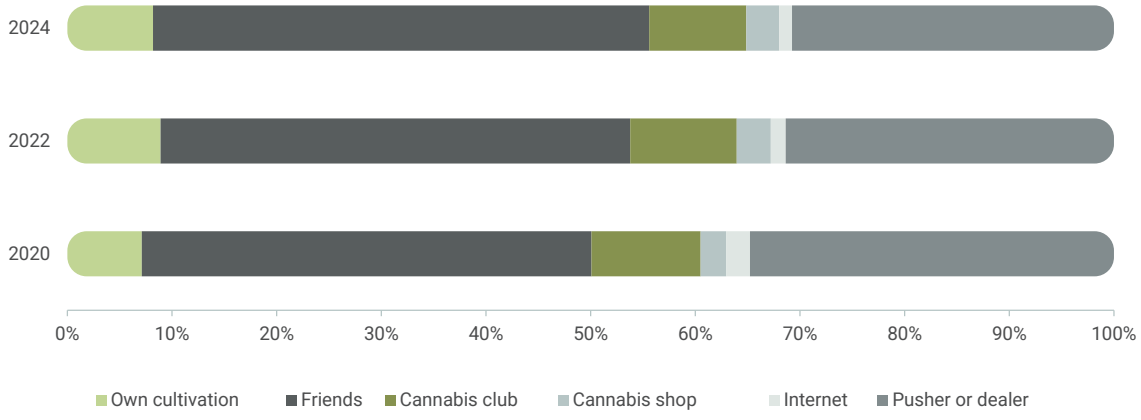
		2015			2018			2020		
		TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN
Cannabis use in the last 30 days	Mainly marijuana	52.7	50.5	59.3	48.3	47.7	50.0	48.7	48.9	48.0
	Mainly hashish	17.0	17.7	15.1	21.9	20.5	25.9	20.6	19.2	24.5
	Both types	30.3	31.9	25.7	29.8	31.8	24.2	30.8	31.9	27.5
Use of cannabis mixed with tobacco in the last 30 days	Yes	89.5	90.1	87.7	92.9	92.9	92.9	86.9	87.4	85.6
	No	10.5	9.9	12.3	7.1	7.1	7.1	13.1	12.6	14.4
Average number of joints used per day		2.5	2.6	2.1	2.7	2.7	2.6	2.9	2.9	2.8

		2022			2024		
		TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN
Cannabis use in the last 30 days	Mainly marijuana	49.0	47.9	51.9	53.8	51.3	59.7
	Mainly hashish	21.9	21.8	22.3	21.7	22.2	20.5
	Both types	29.1	30.4	25.8	24.5	26.5	19.9
Use of cannabis mixed with tobacco in the last 30 days	Yes	88.1	88.7	86.8	90.6	91.5	88.7
	No	11.9	11.3	13.2	9.4	8.5	11.3
Average number of joints used per day		2.7	2.8	2.5	2.6	2.8	2.1

SOURCE: OEDA Survey on Alcohol and Drugs in Spain (EDADES)

The most common **way of obtaining** cannabis in the last month among users has been through friends (Figure 7.20).

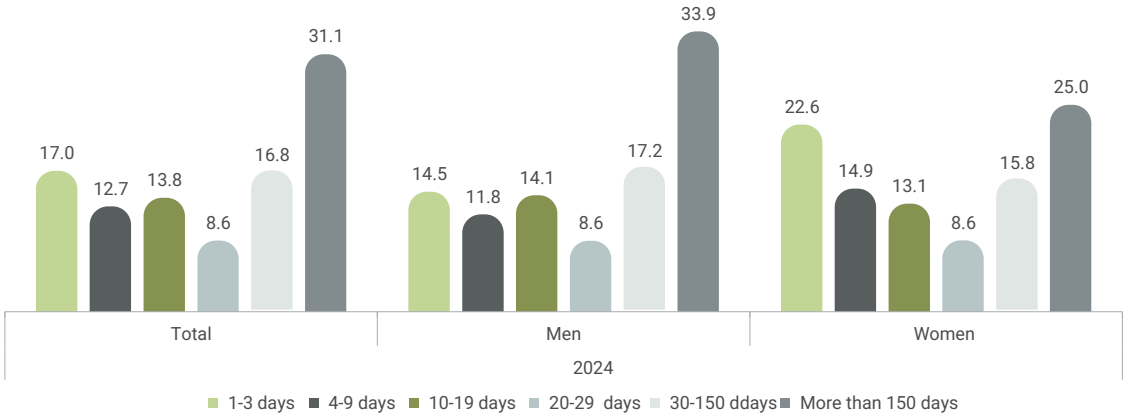
Figure 7.20. Places where persons aged 15-64 years who have used cannabis have obtained cannabis in the last 30 days, Spain, 2020-2024.



SOURCE: OEDA Survey on Alcohol and Drugs in Spain (EDADES)

Regarding the frequency of use among cannabis users in the last 12 months (Figure 7.21), the most common use among men is more than 150 days per year (33.9%). Women, however, report more sporadic use (37.5% use in 1 to 9 days per year).

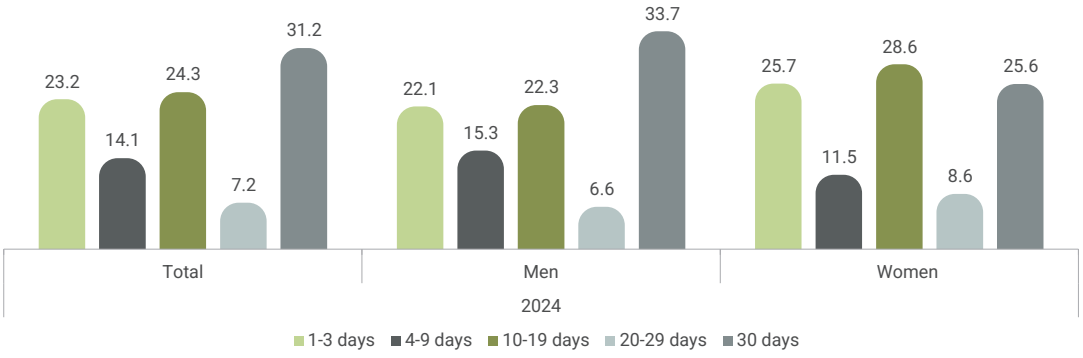
Figure 7.21. Frequency (days) of cannabis, marijuana or hashish use in the last 12 months among the population aged 15-64 that has used them in the last 12 months, by sex (%). Spain, 2022 - 2024.



SOURCE: OEDA Survey on Alcohol and Drugs in Spain (EDADES)

With regard to users in the last month (Figure 7.22), daily use is most common among this population as a whole, as well as among men (31.2% and 33.7%, respectively); however, among women, use for 10 to 19 days a month is more common (28.6%).

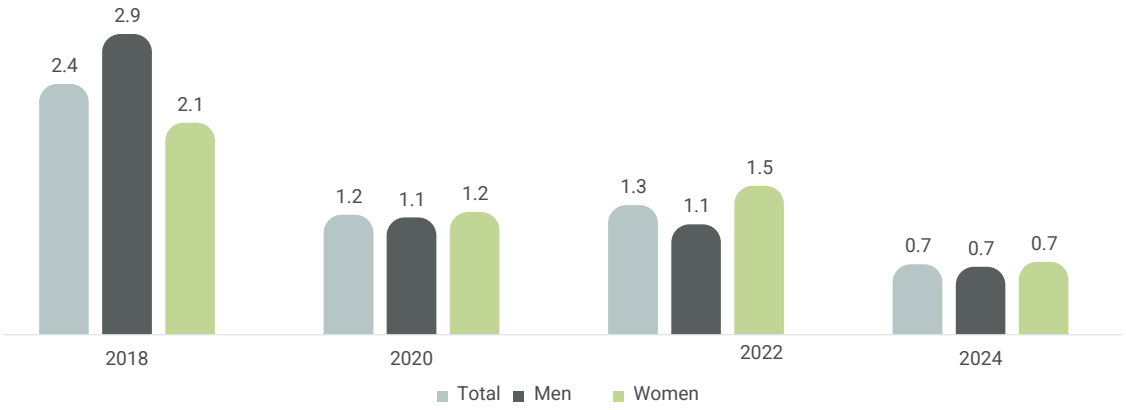
Figure 7.22. Frequency (days) of cannabis, marijuana or hashish use in the last 30 days among the population aged 15-64 that has used them in the last 30 days, by sex (%). Spain, 2022-2024.



SOURCE: OEDA Survey on Alcohol and Drugs in Spain (EDADES)

Among those who have never used cannabis in their lives, only 0.7% of respondents indicated that they would use cannabis if it were a legal drug, there being no differences according to sex (Figure 7.23).

Figure 7.23. Prevalence of individuals who say that if it were legal to use hashish or marijuana they would try it. Response among those who have never tried it among the population aged 15-64, by age and sex (%). Spain, 2018-2024.

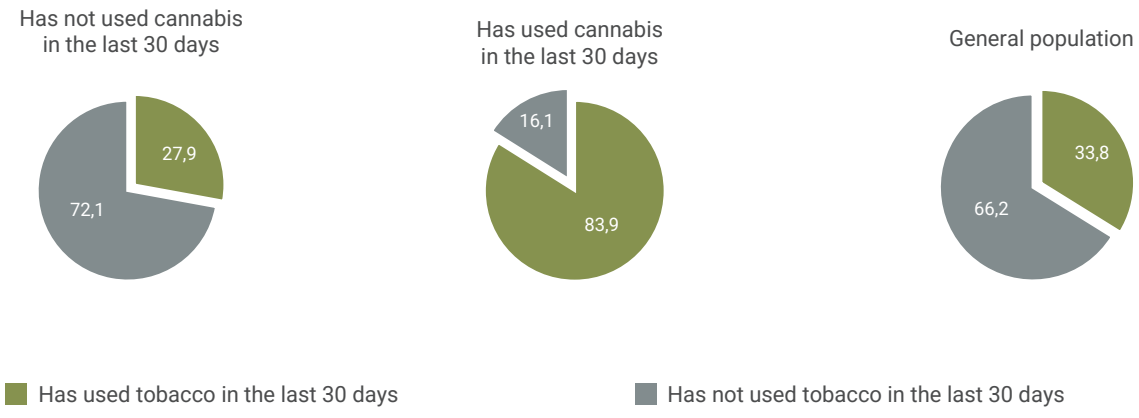


SOURCE: OEDA Survey on Alcohol and Drugs in Spain (EDADES)

Cannabis and tobacco use

83.9 % of the people who have used cannabis in the last month report having used tobacco in this period, with this proportion dropping to 27.9% among those who have not used cannabis, confirming the close relationship in terms of use between the two substances (Figure 7.24).

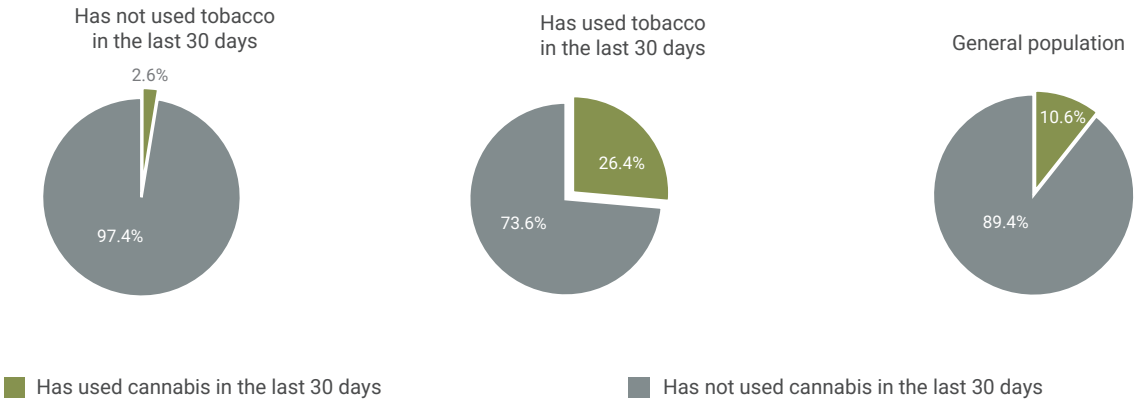
Figure 7.24. Prevalence of tobacco use in the last 30 days according to whether or not cannabis was used in the last 30 days and in the general population (%). Spain, 2024.



SOURCE: OEDA Survey on Alcohol and Drugs in Spain (EDADES)

Carrying out the opposite analysis, more than 25% of those who have used tobacco in the last 30 days reported having used cannabis in this time span, compared to 2.6% of those who have not smoked tobacco in the last month (Figure 7.25).

Figure 7.25. Prevalence of cannabis use in the last 30 days according to whether or not tobacco has been used in the last 30 days and in the general population (%). Spain, 2024.



SOURCE: OEDA Survey on Alcohol and Drugs in Spain (EDADES)

Polydrug use

Polydrug use refers to the use of two or more psychoactive substances within the same period of time. This pattern increases the risks of drugs, which can enhance their effects, reinforce addiction, interfere with diagnosis and hinder treatment.

Among users of one or two psychoactive substances in the last 12 months, the use of illicit drugs is very low, with cannabis being the most used substance (0.6 and 9% respectively).
Among people who used three, four or more psychoactive substances in the last 12 months, cannabis is almost always present (63.1% and 93.2% respectively).

Table 7.15. Prevalence of psychoactive substance use*, by substance used in the last 12 months. Spain, 2024.

	One substance	Two substances	Three substances	Four or more substances
Alcohol	87.2	93.5	98.1	99.8
Tobacco	8.0	77.5	96.5	98.2
Cannabis	0.6	9.0	63.1	93.2

* LEGAL AND ILLEGAL PSYCHOACTIVE SUBSTANCES (Alcohol, Tobacco, Hypnosedatives, Cannabis, Cocaine powder, Cocaine base, Ecstasy, Amphetamines, Hallucinogens, Heroin, Volatile inhalants).
SOURCE: OEDA Survey on Alcohol and Drugs in Spain (EDADES)

Use of new psychoactive substances and cannabis

New psychoactive substances (NPS) are considered to be those that imitate the effect of illegal drugs (cannabis, cocaine, ecstasy, etc.). These new substances (keta, spice, synthetic cannabinoids, synthetic marijuana, meow meow, flakka, superman, cathinone, mephedrone, fentanyl derivatives, methoxetamine, NBOMe, ayahuasca, kratom...) can come in the form of herbs, pills, powders, liquids, incense...

Eight out of ten people who have used new psychoactive substances at some time in their lives also admit to having used cannabis at some time in their lives (80.7%). 45.9% of those who have ever used new substances in their lifetime report having used cannabis in the 12 months prior to the survey, a prevalence that drops to 11.7% among those who have never taken new psychoactive substances.

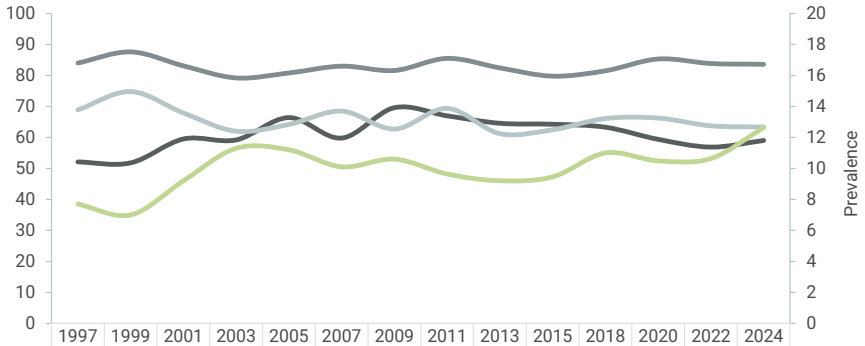
Perceptions and opinions of the population regarding cannabis

In addition to knowing the use of psychoactive substances, it is important to determine the extent to which citizens consider it easy or not to acquire them, i.e. their **perceived availability**. Considering different psychoactive substances, cannabis stands out from the rest of the substances with regard to its accessibility in 2024, 59.0% believe that it would be easy or very easy to obtain this substance within 24 hours. **Risk perception** on the other hand, considers the extent to which people think that certain drug-related behaviours may lead to problems. In this regards, considering that the use of psychoactive substances entails a risk and can be problematic is a deterrent to use.

With regard to sporadic cannabis use (once or less per month), a similar figure was obtained in 2024 as in the previous measurement, with 63.4% of people thinking that such use could be quite or very harmful to health (63.7% in 2022). The data on the perceived risk of regular cannabis use are also similar to the previous edition, with 83.6% of people thinking that regular cannabis use can cause problems (83.9% in 2022).

There is an increasing trend in perceived availability and a decreasing trend in perceived risk of both sporadic and regular use, which is consistent with the increase in prevalence observed since 2020.

Figure 7.26. Perceived availability and risk perception of use (%). Spain 1997-2024.



	1997	1999	2001	2003	2005	2007	2009	2011	2013	2015	2018	2020	2022	2024
Perceived availability	52.1	51.8	59.5	59.2	66.4	59.8	69.6	67.0	64.6	64.3	63.3	59.4	56.9	59.0
Risk of sporadic use	68.9	74.8	67.9	62,0	64.2	68.5	62.7	69.4	61.2	62.5	66.1	66.3	63.7	63,4
Risk of regular use	84.0	87.6	83.1	79.2	80.8	83.0	81.6	85.5	82.4	79.8	81.5	85.3	83.9	83,6
Prevalence of use in last 12 months	7.7	7.0	9.2	11.3	11.2	10.1	10.6	9.6	9.2	9.5	11.0	10.5	10.6	12,6

SOURCE: OEDA Survey on Alcohol and Drugs in Spain (EDADES)

Perception of the importance of the problem of cannabis use and visibility of the problem

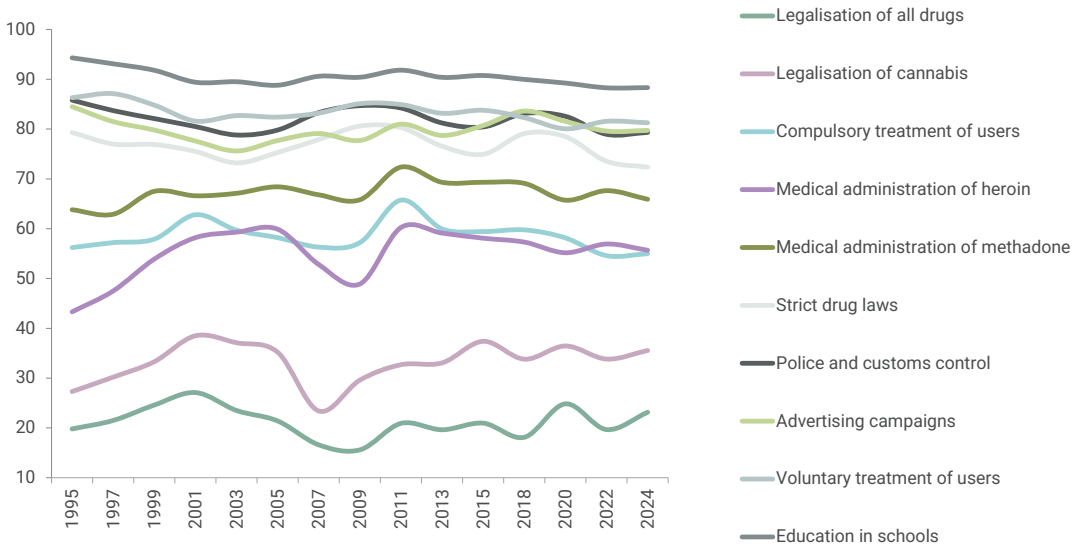
In relation to the visibility of certain scenes related to drug use, a situation similar to that already described for the perception of availability is recorded. The most common situations encountered by individuals are those related to cannabis and alcohol use, with 51.9% saying that they frequently encounter people smoking joints, and with regard to alcohol use, around 42% of individuals say that they have regularly encountered people who are drunk or doing botellón (gathering in public spaces to drink store-bought alcohol).

In terms of the visibility of drug dealers offering drugs, there is a slight decrease with regard to the figures for 2022, the percentage of people who encounter these individuals on a frequent basis decreasing from 13.1% to 12.2%.

Views on the importance of various actions to try to solve the drug problem

Respondents are asked to give their opinions on a series of actions to address the problem of drug use among the population. The measures with the highest levels of support are education in schools, and voluntary treatment of users, as 88.3% and 81.3% of the population think that these measures are very important to solve the drug problem in our country. Other actions, which are also considered very important, are advertising campaigns and police and customs control (79.7% and 79.3% respectively). Finally, actions related to legalisation seem to be important for a smaller proportion of the population. 35.5% of individuals think that the legalisation of cannabis would be an important solution to solve the drug problem.

Figure 7.27. Rating as "very important" of various actions to solve the drug problem among the population aged 14-64 (%). Spain, 1995-2024.



SOURCE: OEDA Survey on Alcohol and Drugs in Spain (EDADES)

The proportion of women who consider these measures important is higher than men for all actions except for cannabis legalisation (36.1% for men vs. 35% for women), and police and customs control which is the same for both sexes (79.3%).

Prevalence of cannabis use by Autonomous Communities and Cities

This section presents cannabis use in the different Autonomous Communities and Autonomous Cities in the different time ranges. It should be borne in mind that the sample corresponding to Extremadura, the Balearic Islands, Cantabria, La Rioja, Ceuta and Melilla was small and the margin of error high, so that comparisons between the different Autonomous Communities should be made with caution.

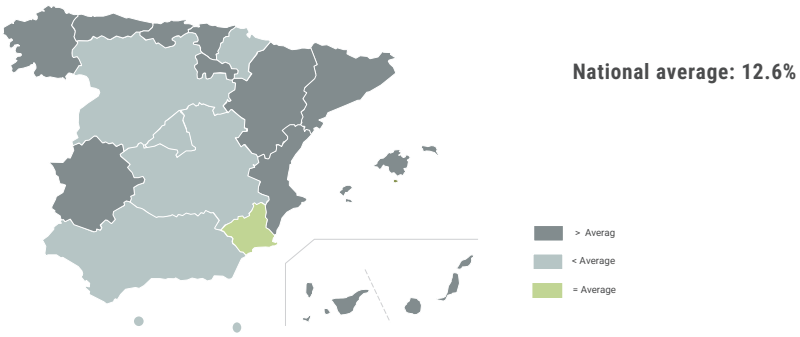
The Autonomous Communities with the highest prevalence of lifetime cannabis use are Valencia and Cantabria, with prevalence rates above 55%. On the other hand, use is somewhat less widespread in the communities of Andalusia, Melilla and Ceuta, with prevalences of less than 30%. Within the time frame of the last 12 months, the communities with the highest prevalence of cannabis use are Extremadura, the Canary Islands and Aragón, with prevalence rates above 15%. The lowest prevalences are found in Andalusia, Madrid, Ceuta and Melilla, equal to or below 10%.

Table 7.16. Prevalence of cannabis use by autonomous communities and cities. Spain 2024.

	Lifetime			Last 12 months		
	Prevalence	Lower 95%CI	Upper 95%CI	Prevalence	Lower 95%CI	Upper 95%CI
ANDALUSIA	27.1	25.2	28.9	10	8.8	11.3
ARAGON	45.9	43.2	48.6	15.6	13.7	17.6
ASTURIAS	51.8	49	54.6	14.5	12.5	16.4
BALEARIC ISLANDS	52.4	49	55.8	14.9	12.5	17.3
CANARY ISLANDS	44.9	42.5	47.2	16.1	14.3	17.9
CANTABRIA	56.8	53.7	59.9	13.8	11.6	15.9
CASTILE AND LEON	43.1	40.8	45.4	10.9	9.4	12.4
CASTILLA-LA MANCHA	44.7	42.2	47.1	10.5	9	12
CATALONIA	52.7	50.6	54.9	14.3	12.8	15.8
VALENCIA	60.5	58.5	62.5	14.2	12.8	15.7
EXTREMADURA	48.7	45.2	52.3	23.1	20.1	26
GALICIA	40.4	38.1	42.8	13	11.4	14.6
MADRID	35.9	34	37.7	9.7	8.5	10.8
MURCIA	36.8	34.4	39.3	12.5	10.8	14.2
NAVARRE	45.7	42.8	48.6	10.8	9	12.6
BASQUE COUNTRY	54.9	52	57.9	14.1	12.1	16.2
RIOJA	43.6	40.5	46.7	13.7	11.6	15.9
CEUTA	30	26.4	33.6	8.2	6	10.4
MELILLA	28.3	24.8	31.9	9.4	7.1	11.7
TOTAL	43.7	43.1	44.3	12.6	12.2	13

SOURCE: OEDA Survey on Alcohol and Drugs in Spain (EDADES)

FIGURE 7.28. Prevalence of cannabis use in the last 12 months by Autonomous Community/City. Spain 2024.



SOURCE: OEDA Survey on Alcohol and Drugs in Spain (EDADES)

The first use of cannabis among the population is between 17.7 and 19 years of age. The Autonomous Community where cannabis use starts earliest is the Castilla la Mancha (17.7 years), while the highest age of onset is in Castile and Leon(19 years).

TABLE 7.17. Average age of onset of cannabis use in the population aged 15-64 years by Autonomous Community/City (%). Spain, 2024.

	Average age of onset of cannabis use
ANDALUSIA	18.1
ARAGON	18.7
ASTURIAS	18.6
BALEARIC ISLANDS	19
CANARY ISLANDS	18.5
CANTABRIA	18.4
CASTILE AND LEON	19
CASTILLA-LA MANCHA	17.7
CATALONIA	18.3
VALENCIA	18.8
EXTREMADURA	17.9
GALICIA	18.5
MADRID	18.3
MURCIA	18.4
NAVARRE	18.7
BASQUE COUNTRY	18.4
RIOJA	18.3
CEUTA	18.8
MELILLA	18.9
TOTAL	18.4

SOURCE: OEDA Survey on Alcohol and Drugs in Spain (EDADES)

In all Autonomous Communities/Cities, lifetime prevalence of cannabis use is higher among men than among women.

TABLE 7.18. Lifetime prevalence of cannabis use in the population aged 15-64 by Autonomous Community/City and sex (%). Spain, 2020.

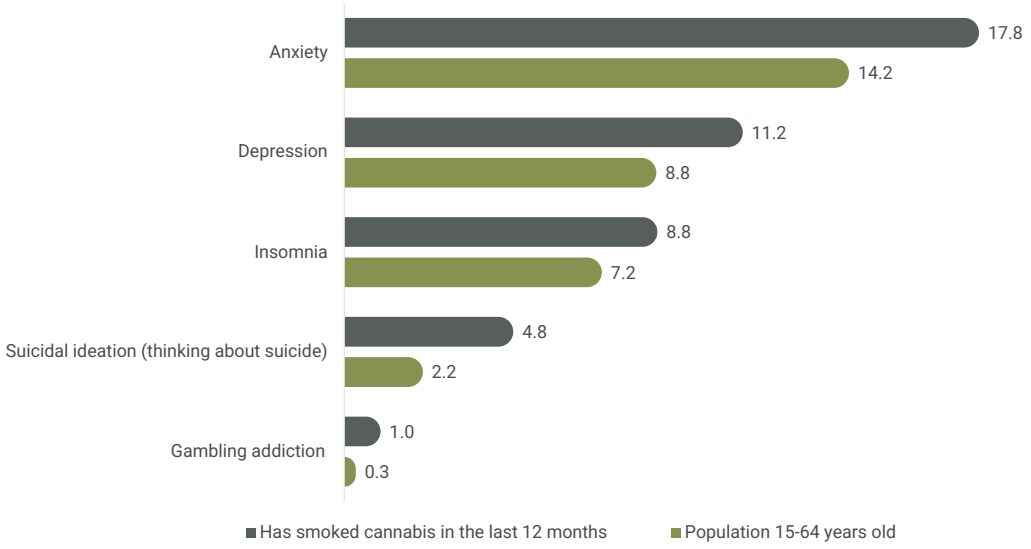
	MEN	WOMEN
ANDALUSIA	33.1	20.9
ARAGON	53.6	37.8
ASTURIAS	61.4	42.4
BALEARIC ISLANDS	60.9	43.6
CANARY ISLANDS	52.5	37.1
CANTABRIA	66.1	47.6
CASTILE AND LEON	50.9	35.1
CASTILLA-LA MANCHA	54.4	34.4
CATALONIA	59.5	45.8
VALENCIA	70.1	50.8
EXTREMADURA	57.6	39.6
GALICIA	44.9	36
MADRID	44.2	27.9
MURCIA	45.6	27.6
NAVARRE	53	38.1
BASQUE COUNTRY	62.3	47.4
RIOJA*	52.4	34.6
CEUTA*	38.7	20.8
MELILLA*	32.2	24.2
TOTAL	51.3	36

*The values for these Autonomous Communities and Cities should be interpreted with caution due to the small sample size.
SOURCE: OEDA Survey on Alcohol and Drugs in Spain (EDADES)

Mental health and cannabis use

In 2022, a series of questions were incorporated into the EDADES questionnaire with the aim of finding out about the mental health of the population aged 15 to 64. Comparing the self-reported prevalence of different pathologies and suicidal ideation in the general population aged 15-64, and in the population aged 15-64 years who have used cannabis, it is observed that in all cases higher prevalences are obtained in the population who have used cannabis in the last 12 months.

Figure 7.29. Self-reported prevalence of different pathologies and suicidal ideation in the general population aged 15-64, and in the population aged 15-64 years who have used cannabis in the last 12 months (%). Spain, 2024.



SOURCE: OEDA Survey on Alcohol and Drugs in Spain (EDADES)

7.3. Cannabis use in the working population aged 16 to 64

In the workplace, drug use can affect work, modifying the quality or performance at work, as well as causing accidents at work. In addition to this, there are the social and health consequences of the use of psychoactive substances that may have effects at the individual or social level, on the worker or on third parties, a clear example being the exposure of non-smokers to tobacco smoke. In order to address this issue, it is necessary to carry out studies to gain a better understanding of the situation of drug use in the workplace in Spain and to provide information for the development of interventions.

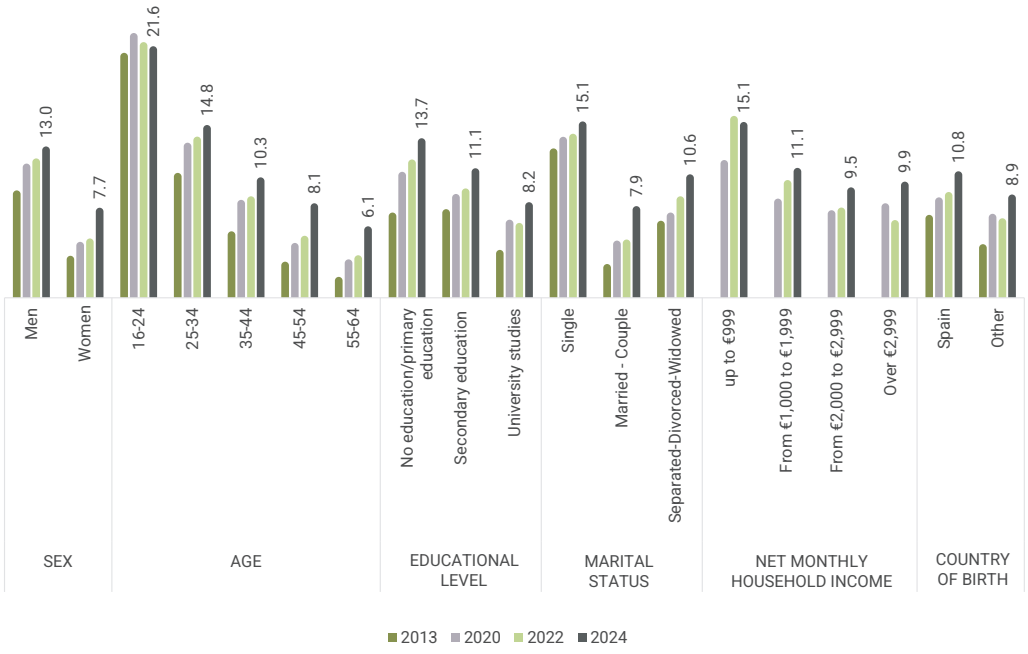
In this sense, the National Commission for the Prevention and Treatment of Drug Addiction in the Workplace, made up of representatives of workers, employers and the Government Delegation for the National Plan on Drugs (DGPNSD), agreed to include a specific module in EDADES to obtain information on the use of psychoactive substances among the working population in Spain. Thus, in 2007, this "*Survey on psychoactive substance use in the working population in Spain*" was carried out for the first time, and it was conducted again in 2013 and 2020; the next edition is planned for 2026. Additionally, on a biannual basis (in each edition of the EDADES survey), certain information is collected on the working life of the respondents which, although not as extensive as in the labour survey, provides knowledge of substance use in the population according to the different working characteristics. The main results and conclusions of the latest EDADES survey (2024) on cannabis use in the workplace are presented below.

In 2024, cannabis use has a prevalence of 10.5% in the working population, higher in men (13%), in people under 34 years of age (1 in 3 say they use this substance) and in people with no education or only primary education. In relation to marital status, there is a higher proportion of users among single people, possibly favoured by the higher presence of young people in this category, while people who are married/with partners report percentages below 8%..

There are statistically significant differences in cannabis use, depending on all the socio-demographic variables studied (Figure 7.30). Logistic regression confirms that age and sex influence cannabis use.

Compared to previous years, there is a generalised increase in the prevalence of use, with a growth of more than 3 percentage points in the working population reporting income of more than 2999 euros per month in their households. For those with an income of 999 euros or less, use is however slightly down compared to 2022 (a year in which a significant increase was observed). Likewise, in the 16-24 year age group, the figures have been on a downward trend since 2020 but are still higher than in 2013 and the highest in relation to the rest of the age groups.

Figure 7.30. Prevalence of cannabis use (last 30 days) in the working population according to socio-demographic variables (%). Spain 2013-2024.



Working population: Employed (currently working or temporarily absent) and unemployed (previously employed) 16-64 years old.
SOURCE: OEDA. Survey on Alcohol and Drugs in Spain (EDADES).

Analysing patterns of use according to the employment status of the population, significant differences are observed with a higher proportion of cannabis use in the last month among unemployed people. Logistic regression, controlling for the effect of age and sex, confirms that being unemployed is associated with a higher probability of using cannabis.

Table 7.19. Prevalence of cannabis use (last 30 days) in the population aged 16-64 by employment status (%). Spain 2013-2024.

	2013	2020	2022	2024
Employees (currently working or temporarily absent)	5.3	7.8	8.2	10.0
Employees currently working	5.3	7.9	8.2	10.0
Temporarily absent employees	4.6	6.4	8.1	8.5
Unemployed with previous employment	9.8	11.4	12.5	14.0

Working population: Employed (currently working or temporarily absent) and unemployed (previously employed) 16-64 years old.
SOURCE: OEDA. Survey on Alcohol and Drugs in Spain (EDADES).

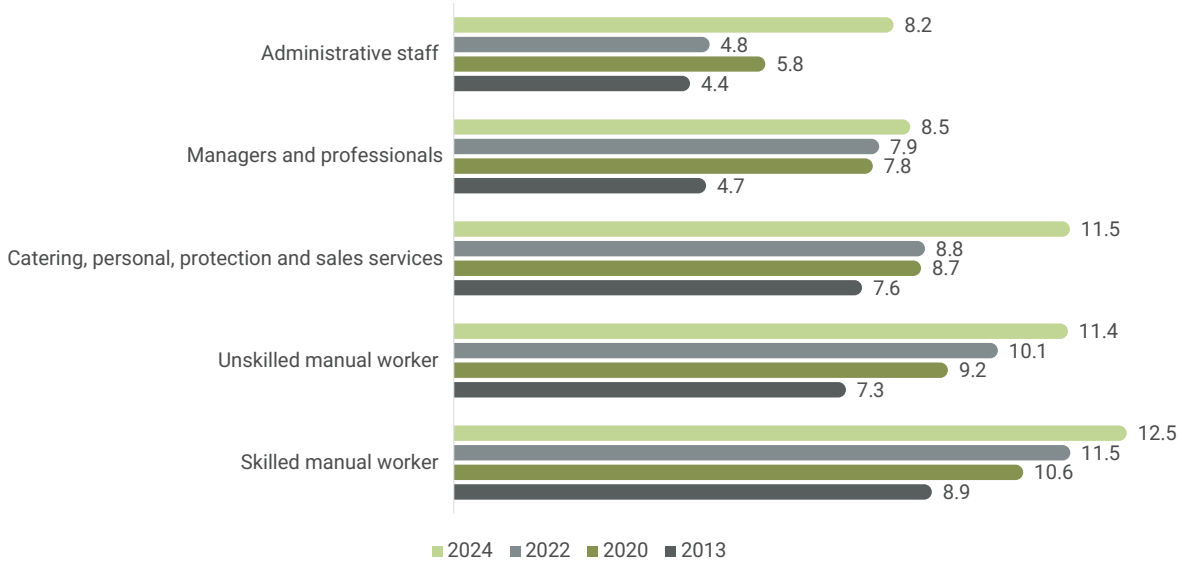
By sex, use is higher among men regardless of employment status.

Table 7.20. Prevalence of cannabis use (last 30 days) in the population aged 16-64 by employment status and sex (%). Spain 2024.

	MEN	WOMEN
Persons employed (currently working or temporarily absent)	12.2	7.5
Employees currently working	12.1	7.6
Temporarily absent employees	12.6	6.2
Unemployed persons with previous employment	19.7	8.9

Working population: Employed (currently working or temporarily absent) and unemployed (previously employed) 16-64 years old.
T=Total; M=Men; W=Women
SOURCE: OEDA. Survey on Alcohol and Drugs in Spain (EDADES).

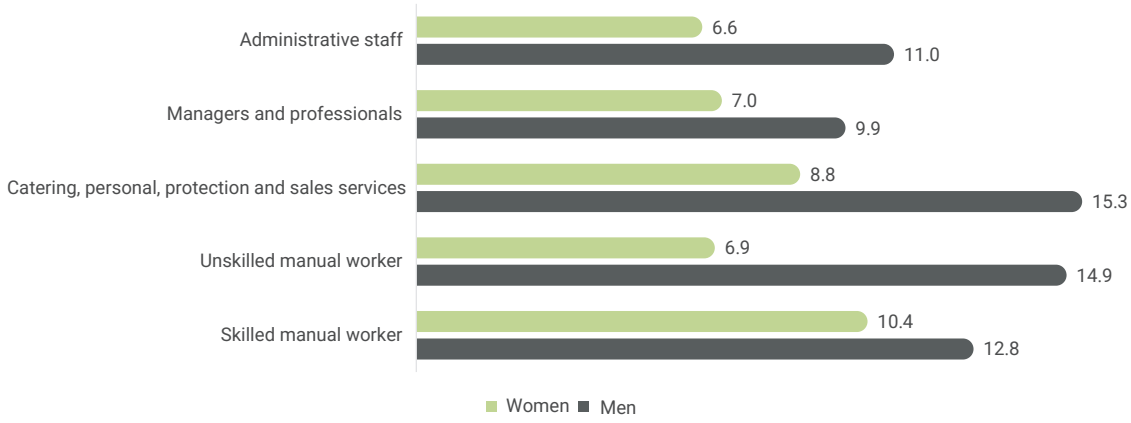
Figure 7.31. Prevalence of cannabis use (last 30 days) in the working population by occupational category (%). Spain 2013-2024.



Working population: Employed (currently working or temporarily absent) and unemployed (previously employed) 16-64 years old.
SOURCE: OEDA. Survey on Alcohol and Drugs in Spain (EDADES)

In 2024, skilled manual workers are the occupational category reporting the highest cannabis use, followed by catering, personnel, protection and sales workers, with unskilled manual workers in third place. In all categories, men have a higher prevalence of cannabis use than women.

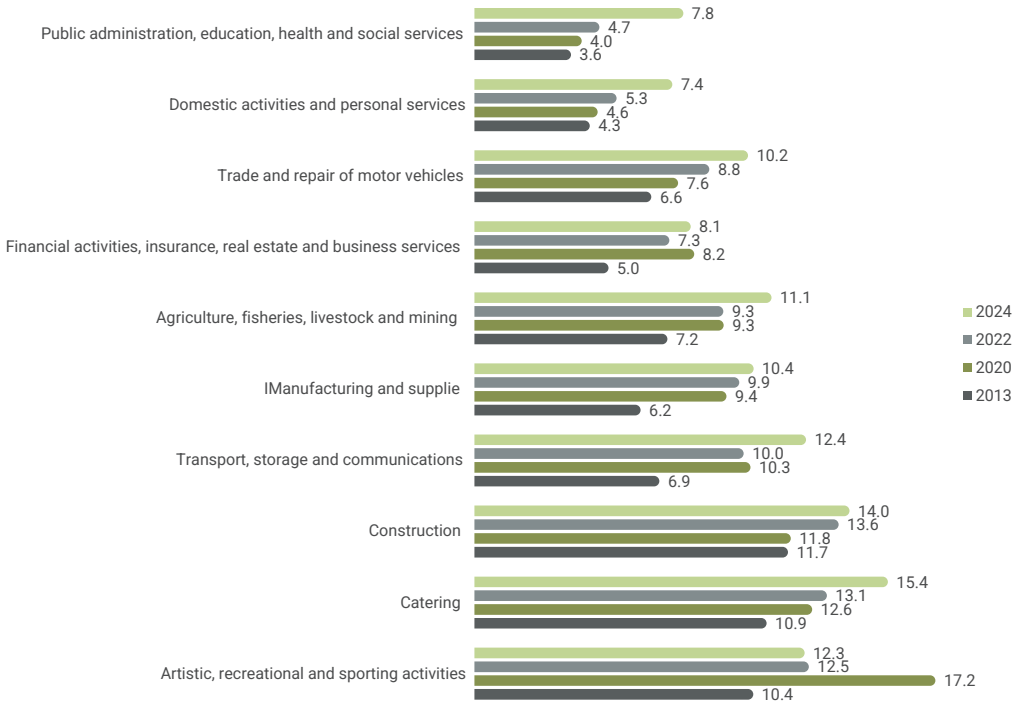
Figure 7.32. Prevalence of cannabis use (last 30 days) in the working population by occupational category and sex (%). Spain 2024.



Working population: Employed (currently working or temporarily absent) and unemployed (previously employed) 16-64 years old.
SOURCE: OEDA. Survey on Alcohol and Drugs in Spain (EDADES)

There are statistically significant differences in the percentage of users based on occupational category. Logistic regression analysis indicates that these differences hold when adjusting the model for age and sex.
Cannabis use is increasing in all segments, although substantially among administrative staff (4.7% in 2013 and 8.2% in 2024).

Figure 7.33. Prevalence of cannabis use (last 30 days) in the working population by sector of activity (%). Spain 2013-2024.

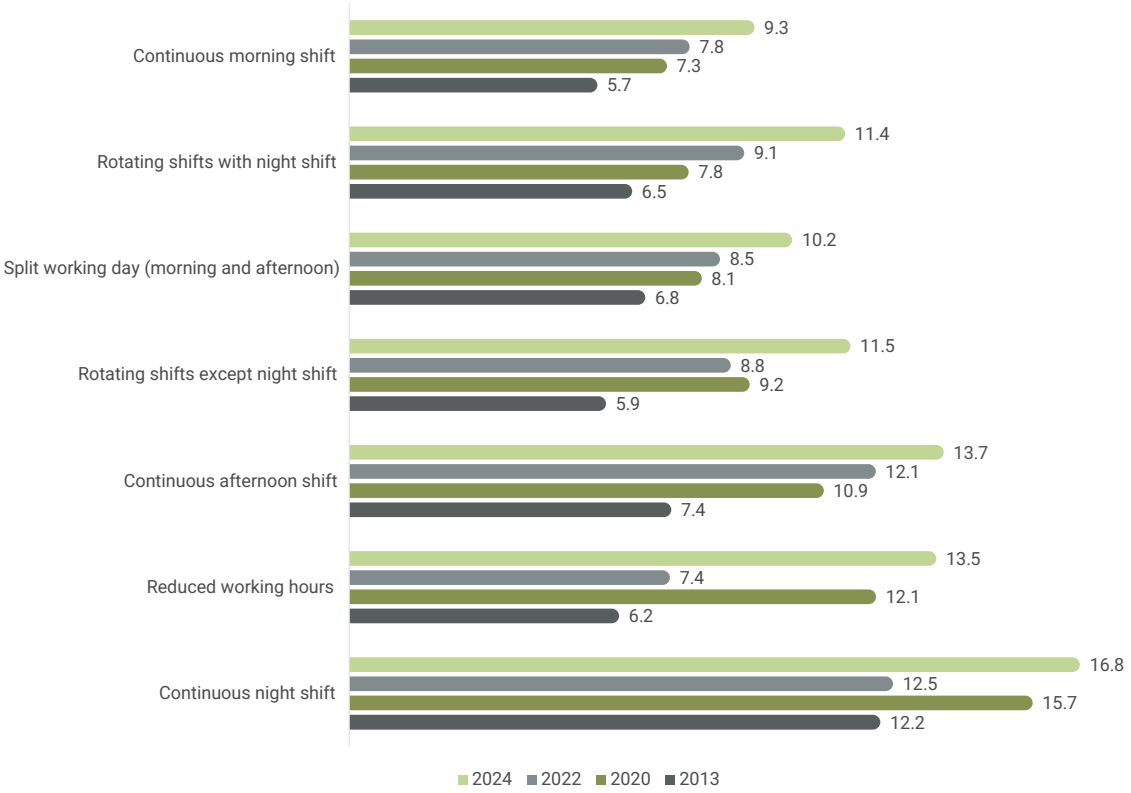


Working population: Employed (currently working or temporarily absent) and unemployed (previously employed) 16-64 years old.
SOURCE: OEDA. Survey on Alcohol and Drugs in Spain (EDADES)

In terms of sector of activity, the prevalence of recent use is highest in the hospitality sector, followed by construction. The observed differences in use according to sector of activity are statistically significant, which is confirmed by logistic regression analysis, after controlling for the effect of age and sex.

By sex, except in the arts and recreation sector, where the prevalence of cannabis use is slightly higher among women, higher levels of cannabis use are reported among men. Differences in prevalence between men and women are smaller in the Public Administration sector.

Figure 7.34. Prevalence of cannabis use (last 30 days) in the working population by working hours (%). Spain 2013-2024.



Working population: Employed (currently working or temporarily absent) and unemployed (previously employed) 16-64 years old.
SOURCE: OEDA. Survey on Alcohol and Drugs in Spain (EDADES)

In 2024, the highest prevalence of cannabis use is among workers who work continuous night shifts, followed by those who work continuous afternoon shifts and those with reduced working hours.

Significant differences are found in the percentage of cannabis users according to working hours, which is confirmed by logistic regression analysis after controlling for the effect of age and sex.

Compared to 2022, the largest increases in the prevalence of cannabis use are recorded among employees who have reduced working hours at their workplace. The sample size of some of the categories (such as continuous night shift or reduced working hours) requires caution in comparisons, as these are very volatile figures whose number of cases may show significant year-on-year changes.

Problematic cannabis use in the general population

In 2024, the prevalence of problematic cannabis use in the working population was 1.5%, very similar to that of the rest of the population studied in the EDADES survey (1.4%). By sex, problematic cannabis use is more prevalent among men than among women, with statistically significant differences between the sexes (p<0.001), which were confirmed in the logistic regression analysis.

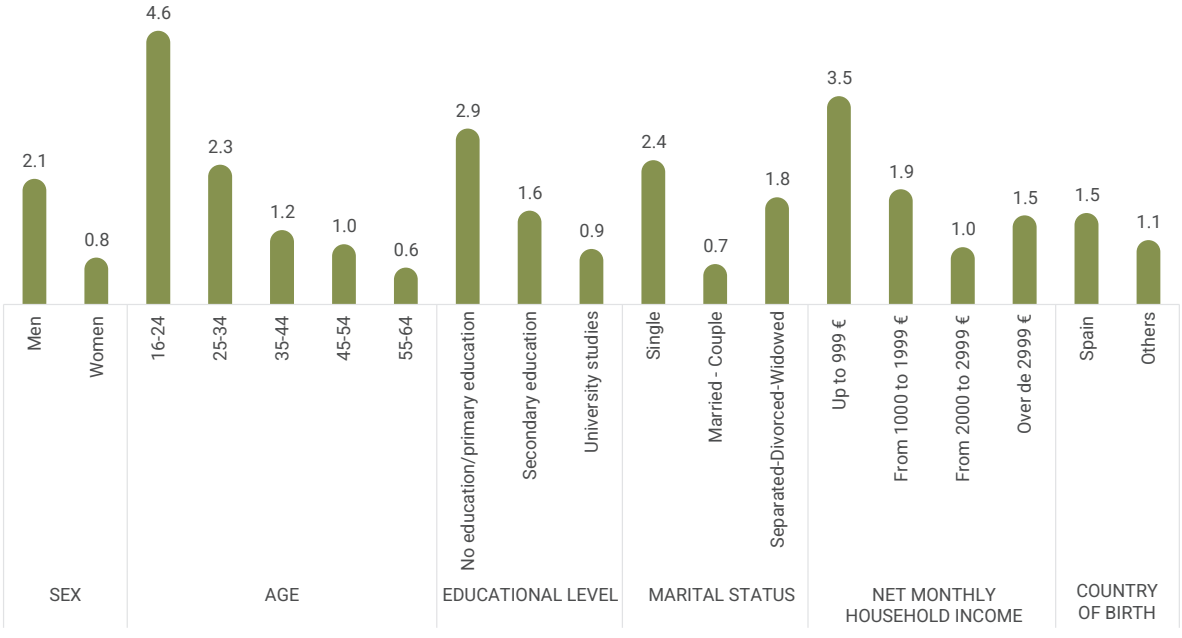
Table 7.21. Prevalence of problematic cannabis use in the last 12 months in the working population and in the rest of the population studied in the EDADES survey (non-working population aged 15-64). Spain, 2024.

	2024		
	TOTAL	MEN	WOMEN
Working population	1.5	2.1	0.8
Rest of the population	1.4	2.4	0.6

Working population: Employed (currently working or temporarily absent) and unemployed (previously employed) 16-64 years old.
Problematic cannabis use according to the Cannabis Abuse Screening Test scale (CAST≥4)
SOURCE: OEDA. Survey on Alcohol and Drugs in Spain (EDADES)

The analysis of problematic cannabis use in the working population according to socio-demographic characteristics shows that the profile of the problematic cannabis user is male, aged between 16 and 24, single, with a low level of education and a net monthly household income of €999 or less.

Figure 7.35. Prevalence of problematic cannabis use (last 12 months) in the working population by socio-demographic variables. Spain, 2024.



Working population: Employed (currently working or temporarily absent) and unemployed (previously employed) 16-64 years old.
Problematic cannabis use according to the Cannabis Abuse Screening Test scale (CAST≥4).
SOURCE: OEDA. Survey on Alcohol and Drugs in Spain (EDADES)

The unemployed population has a prevalence of problematic cannabis use that is almost 3 times higher than among those who are employed. Statistically significant differences are found in the study population according to employment status, which are confirmed in the logistic regression analysis after adjusting the model for age and sex. In both the employed and unemployed population, use is higher among men than among women, with these differences being maximised in the case of unemployed persons.

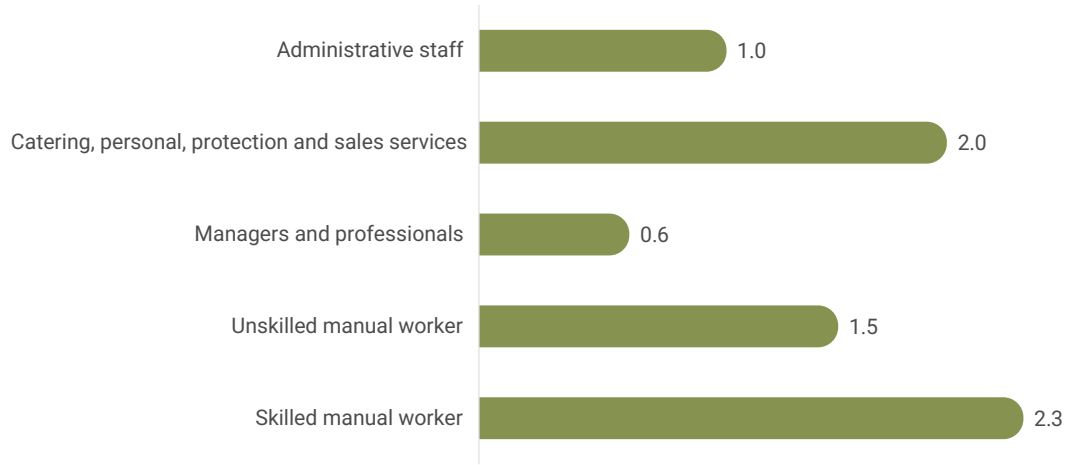
Table 7.22. Prevalence of problematic cannabis use (last 12 months) in the population aged 16-64 by employment status and sex (%). Spain, 2024.

	MEN	WOMEN	TOTAL
Persons employed (currently working or temporarily absent)	1.7	0.7	1.2
Employees currently working	1.7	0.7	1.2
Temporarily absent employees	1.2	0.4	0.7
Unemployed persons with previous employment	5.4	1.2	3.2

Working population: Employed (currently working or temporarily absent) and unemployed (previously employed) 16-64 years old.
Problematic cannabis use according to the Cannabis Abuse Screening Test scale (CAST≥4)
SOURCE: OEDA. Survey on Alcohol and Drugs in Spain (EDADES)

The occupational category reporting the highest prevalence of problematic cannabis use is skilled manual workers.
The differences found in problematic cannabis use by occupational category were found to be statistically significant and were confirmed in the logistic regression analysis when adjusting the model for age and sex.

Figure 7.36. Prevalence of problematic cannabis use (last 12 months) in the working population by occupational category. Spain, 2024.



Working population: Employed (currently working or temporarily absent) and unemployed (previously employed) 16-64 years old.
Problematic cannabis use according to the Cannabis Abuse Screening Test scale (CAST≥4)
SOURCE: OEDA. Survey on Alcohol and Drugs in Spain (EDADES)

Problematic cannabis use is highest among workers in the hospitality sector, with a higher prevalence among men than among women. Statistically significant differences in problematic cannabis use by sector of activity are found and confirmed in logistic regression analysis.

Figure 7.37. Prevalence of problematic cannabis use (last 12 months) in the working population, by sector of activity. Spain, 2024.

Working population: Employed (currently working or temporarily absent) and unemployed (previously employed) 16-64 years old.
Problematic cannabis use according to the Cannabis Abuse Screening Test scale (CAST≥4)
SOURCE: OEDA. Survey on Alcohol and Drugs in Spain (EDADES)

In terms of working hours, the highest prevalence of problematic cannabis use is found among those who work a continuous afternoon shift (4.3%). The observed differences are statistically significant, which is confirmed by logistic regression analysis, after controlling for the effect of age and sex.

Figure 7.38. Prevalence of problematic cannabis use (last 12 months) in the working population, by working hours. Spain, 2024.

Working population: Employed (currently working or temporarily absent) and unemployed (previously employed) 16-64 years old.
Problematic cannabis use according to the Cannabis Abuse Screening Test scale (CAST≥4)
SOURCE: OEDA. Survey on Alcohol and Drugs in Spain (EDADES)

7.4. Cannabis use in the prison population aged 18 and older

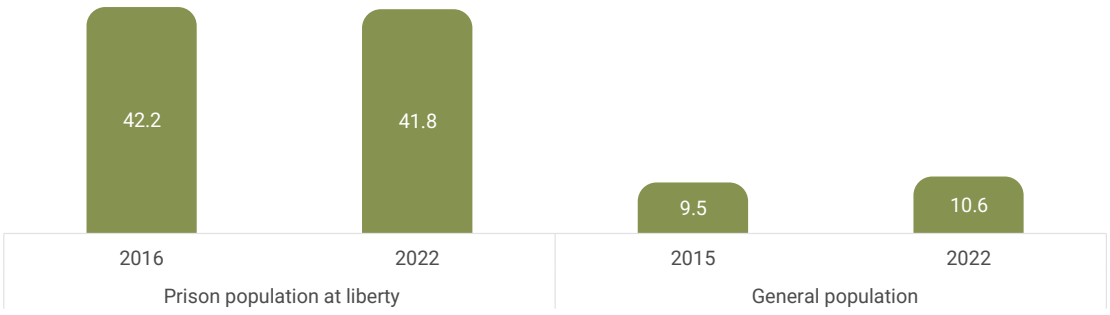
The Government Delegation for the National Plan on Drugs of the Ministry of Health, in collaboration with the General Secretariat of Penitentiary Institutions of the Ministry of the Interior, the Department of Justice, Rights and Memory of the Regional Government of Catalonia and the Directorate of Justice of the Regional Ministry of Equality, Justice and Social Affairs of the Basque Country, carries out, every five years (2006-2011-2011-2016-2022 editions) a survey on Health and Drug Use among Prisoners (ESDIP).

This survey is aimed at men and women over 18 years of age in all penitentiary centres in Spain whose penal classification is that of pre-trial detainees, 2nd grade prisoners, prisoners on remand and unclassified prisoners. Sampling was random and proportional to the number of persons in custody in each centre and their nationality, and proportional by gender, with women over-represented. A face-to-face personal interview was conducted through a digital, anonymous and pre-coded questionnaire (available in Spanish and Arabic), which was completed by the interviewer and lasted 30-45 minutes. In 2022, 5512 inmates were interviewed. The results obtained were nationally representative. The main data on cannabis use are summarised below.

Comparison between the general population and the prison population

Cannabis use in the last 12 months is four times higher in the prison population studied, prior to their incarceration, than in the general population aged 15-64. Compared to 7 years ago, the prevalence of drug use remains stable.

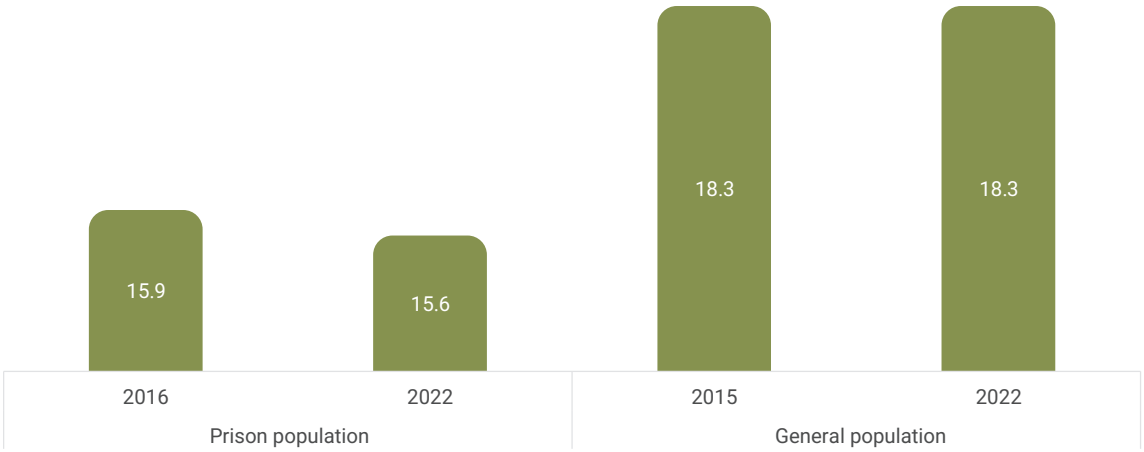
Figure 7.39. Prevalence of drug use within the last 12 months in the prison population prior to incarceration and in the general population (%). Spain, 2022.



Source: Survey on Health and Drug Use among Prisoners. ESDIP 2022. Survey on Alcohol and Drugs in Spain. EDADES 2022.

With regard to the **age of onset** of cannabis use, the prison population starts using cannabis at an earlier age compared to the general population between 15 and 64 years of age, approximately 3 years earlier.

Figure 7.40. Age of onset of drug use in the general population and in the prison population (years). Spain, 2015-2016 and 2022.



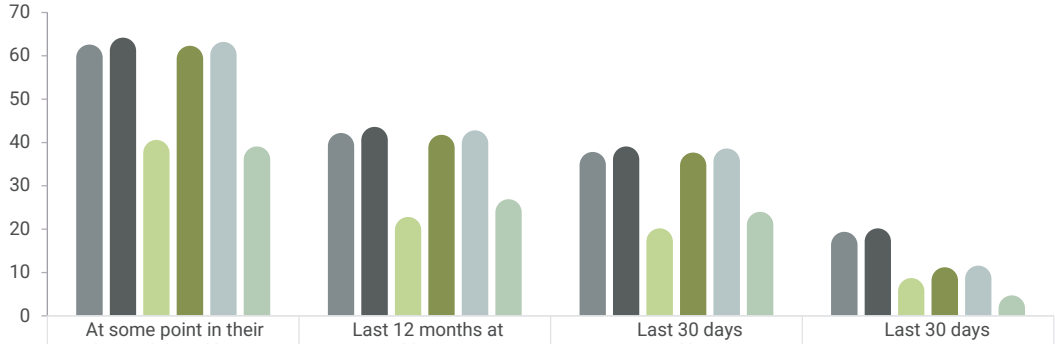
Source: Survey on Health and Drug Use among Prisoners. ESDIP 2022. Survey on Alcohol an d Drugs in Spain. EDADES 2022.

Compared to 2016, the average age of onset of cannabis use remains stable both in the prison population and in the general population aged 15 to 64.

Cannabis use in the prison population

Cannabis is the most widely used illegal drug both in prison and at liberty. In 2022, 62.3% of the prison population had used cannabis in their lifetime while at liberty, 41.8% had used it in the last year while at liberty and 37.7% in the last month while at liberty. Cannabis use drops to one-third once in prison, with 11.2% having used cannabis in the last 30 days in prison. Compared to 2016, cannabis use while at liberty has remained stable, but cannabis use in prison has decreased considerably.

Figure 7.41. Prevalence of cannabis use in the prison population (%). Spain, 2016- 2022.



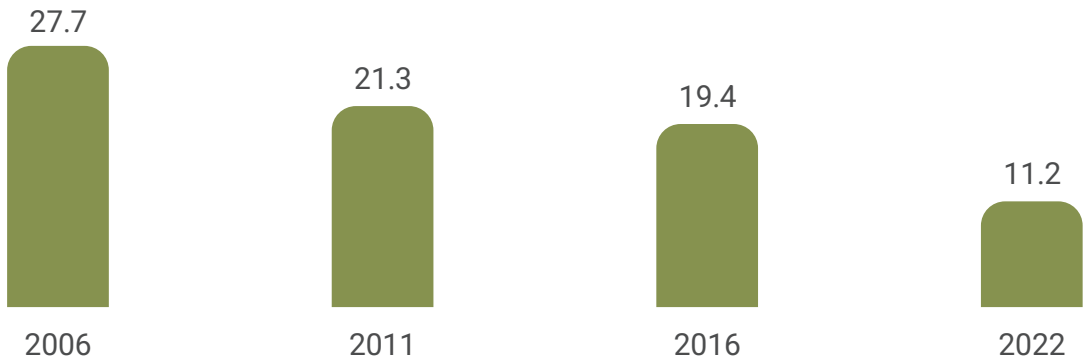
	At some point in their lives while at liberty	Last 12 months at liberty	Last 30 days at liberty	Last 30 days in prison
2016 Total	62.6	42.2	37.8	19.4
2016 Men	64.2	43.6	39.1	20.2
2016 Women	40.6	22.8	20.2	8,7
2022 Total	62.3	41.8	37.7	11.2
2022 Men	63.2	42.8	38.6	11.6
2022 Women	39.1	26.9	24.0	4.7

Source: Survey on Health and Drug Use among Prisoners. ESDIP 2016, 2022.

In terms of sex, the prevalence of cannabis use among men is almost twice as high as among women. The largest differences in drug use between men and women are found in prison because women reduce their use to a greater extent when they enter prison.

From 2006 to 2022 there is a downward trend in the prevalence of cannabis use in prison in the past 30 days. Cannabis, the most commonly used illegal drug in prison, shows a clear downward trend, with use falling to a third of what it was in 2006.

Figure 7.42. Prevalence of drug use in the prison population within the last 30 days in prison (%). Spain, 2006, 2011, 2016 and 2022.

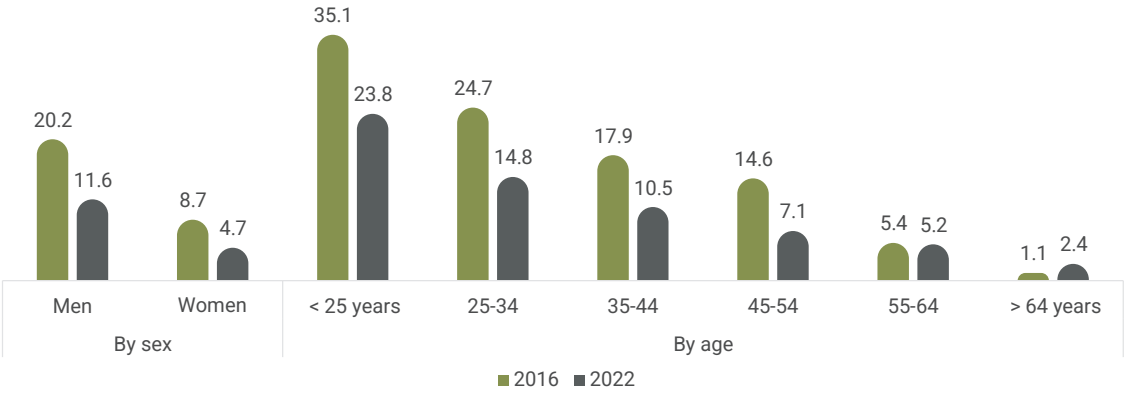


Source: Survey on Health and Drug Use among Prisoners. ESDIP 2016, 2022.

Characteristics of cannabis use in the prison population within the last 30 days

Cannabis is the most commonly used illegal drug among the prison population both inside and outside prison. 11.2% of the prison population reported having used this substance within the last 30 days in prison (in 2016 this indicator was 19.4%). Its use is more prevalent among men (more than twice that of women) and among the prison population under the age of 25. 1.6% of users report that they started using cannabis in prison (in 2016 this indicator was 1.8%).

Figure 7.43. Prevalence of cannabis use in prison within the last 30 days, by sex and age. Spain, 2016- 2022.



Source: Survey on Health and Drug Use among Prisoners. ESDIP 2016, 2022.

In 2022, the prevalence of cannabis use in the last 30 days in prison shows differences according to the **nationality** of the person in custody, with the prevalence of cannabis use being higher in the foreign population. Differences are also observed with regard to **procedural status**, with those in pre-trial detention showing higher prevalence of cannabis use in prison compared to convicted offenders.

Figure 7.44. Prevalence of cannabis use in the prison population within the last 30 days in prison, by nationality and procedural status (%). Spain, 2022.

Source: Survey on Health and Drug Use among Prisoners. ESDIP 2016, 2022.

Compared to 2016, there was a decline in the prevalence of cannabis use in both the Spanish and foreign population, with the reduction being much greater in the Spanish population. And with regard to the procedural situation, it is in convicted offenders where the prevalence of drug use decreases by more than 50%.

Table 7.23. Prevalence of cannabis use in the prison population within the last 30 days in prison, by nationality and procedural status (%). Spain, 2016- 2022.

		2016	2022
Nationality	Spanish	21.4	10.9
	Foreign	15.2	11.9
Procedural status	Sentenced	20.1	9.2
	Pre-trial custody	15.1	11.6

Source: Survey on Health and Drug Use among Prisoners. ESDIP 2016, 2022.

Treatment for cannabis use

31.2% of the prison population report having received treatment while at liberty to stop or control drug use (31.5% men and 26.1% women), compared to 24.1% who have sometime received treatment in prison during any incarceration (24.6% men and 17.1% women). In terms of the last treatment while at liberty, cannabis accounted for 11% of the treatments.

50.6% of the prison population (50.3% men and 56.2% women) who were in treatment at liberty reported having **continued to receive treatment** on entering prison. Those who stopped receiving treatment on admission mostly stopped voluntarily (45.6%) or with medical discharge (28.6%).

20.8% of the prison population has received treatment to stop or control drug use at the time of their **current imprisonment** (21.1% men, 15.5% women). In 2022, cannabis accounted for 10.1 per cent of prison treatment and prison treatment for cannabis doubled compared to 2016 (5.9 per cent in 2016). Furthermore, only 11.8% of the prison population not currently in treatment in 2022 **were interested in starting treatment,** this percentage being higher among men (17.4%) than among women (11.4%). The main reason given by the prison population not in treatment as to why they did not wish to start treatment was because they felt they did not need it.

08

HIGH RISK USE AND CONSEQUENCES OF CANNABIS USE

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8.1 High risk cannabis use

Cannabis use is associated with a number of adverse health effects, including increased risk of using o ther drugsand addictions, as well as mental health problems. Acute reactions in the cognitive-emotional sphere, including anxiety and attention problems, are also important and are related to an increased risk of accidents, therefore their link to road accidents is an especially relevant aspect. It has also been shown to be associated with respiratory diseases, including asthma and acute cardiovascular effects such as myocardial infarction and strokes[62,63.] Cannabis use is associated with an increased risk of behavioural disorders and psychosis[64,65]. The higher the frequency of use and the higher the potency of the cannabis used[66], the greater the risk, with seizure data in Spain and Europe indicating a progressive increase in the purity and potency of cannabis. It is also higher at earlier ages of use, which means that it is four times higher if it starts at 15 than if it starts at 26 years of age. It is estimated that up to 8% of the incidence of schizophrenia in the population may be related to cannabis use in young people[67,68]. It has even been shown that only occasional cannabis use can lead to structural and cognitive changes in adolescents' brains69[69,70,71,72].

There is a need to know about problematic cannabis use. To this end, and within the framework of a collaboration project with the EUDA (European Union Drugs Agency), a series of scales have been included since 2006 in successive editions of the ESTUDES survey (Survey on Drug Use in Secondary Education), aimed at assessing problematic cannabis use. In the 2023 survey, the CAST (Cannabis Abuse Screening Test) scale (Legleye et al. 2007), which was already introduced in the questionnaire ESTUDES 2006, 2008, 2010, 2012, 2014, 2016, 2019 and 2021 surveys, and in EDADES 2013, 2015, 2018, 2020, 2022 and 2024, allowing a temporal trend to be established. The CAST scale is a screening instrument consisting of 6 questions that seek to identify patterns or risky behaviours associated with cannabis use in the past year. Those with a score of 4 or more are classified as possible problematic users.

62 Shah S, Patel S, Paulraj S, Chaudhuri D. Association of Marijuana Use and Car diovascular Disease: A Behavioral Risk Factor Surveillance System Data Analysis of 133,706 US Adults. Am J Med. 2021;134(5):614. Epub 2020 No v 9.

63 National Academies of Sciences, Engineering, and Medicine. (2017). The health effects of cannabis and cannabinoids: The current state of evidence and recommendations for research. Washington, DC: The National Academies Press. https://doi.org/10.17226/24625.

64 Carvalho C, Vieira-Coelho MA. Cannabis induced psychosis: A systematic review on the role of genetic polymorphisms. Pharmacol Res. 2022;181:106258. Epub 2022 May 16.

65 Mustonen A, Niemela S, Nordstrom T, et al. Adolescent cannabis use, baseline pr odromal symptoms and the risk of psychosis. Br J Psychiatry 2018; 212: 227–33. 66 Di Forti M, Quattrone D, Freeman TP, et al, and the EU-GEI WP2 Group. The contribution of cannabis use t o variation in the incidence of psychotic disorder across Europe (EU-GEI): a multicentre case-control study. Lancet Psychiatry 2019.

67 Volkow ND, Swanson JM, Evins AE, DeLisi LE, Meier MH, Gonzalez R, Bloomfield M A, Curran HV, Baler R. Effects of Cannabis Use on Human Beha vior, Including Cognition, Motivation, and Psychosis: A Review. JAMA Psychiatry. 2016 Mar; 73(3):292-7.

68 Di Forti M, Quattrone D, Freeman TP, Tripoli G, Gayer-Anderson C, Quigley H, Rodriguez V, Jongsma HE, Ferraro L, La Cascia C, La Barbera D, Tarricone I, Berardi D, Szöke A, Arango C, Tortelli A, Velthorst E, Bernardo M, Del-Ben CM, Menezes PR, Selten JP, Jones PB, Kirkbride JB, Rutten BP, de Haan L, Sham PC, van Os J, Lewis CM, Lynskey M, Morgan C, Murray RM, EU-GEI WP2 Group. The contribution of cannabis use t o variation in the incidence of psy chotic disorder across Europe (EU-GEI): a multicentre case-control study. Lancet Psychiatry. 2019;6(5):427. Epub 2019 Mar 19.

69 Orr C, Spechler P, Cao Z, et al. Grey Matter Volume Differences Associated with Extremely Low Levels of Cannabis Use in Adolescence. J Neur osci. 2019 Mar 6;39(10):1817-1827.

70 Feeney, K.E., Kampman K. M.; Adverse effects of marijuana use. The Linacre Quarterly 83 (2) 2016, 174–178.

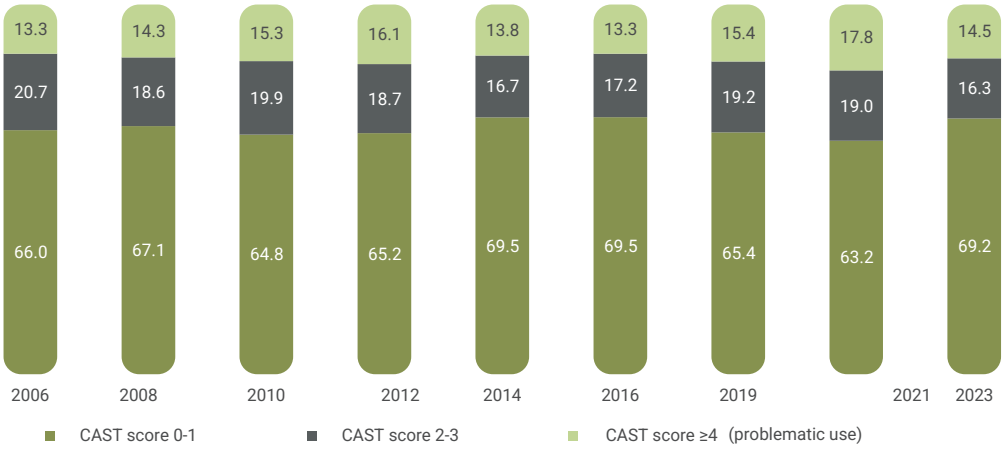
71 Suerken C.K., Reboussin B. A., Egan K. L., Sutfin E. L., Wagoner K. G., Spangler J., Wolfson M.; Marijuana use trajectories and academic outcomes among college students. Drug and Alcohol Dependence 162 (2016) 137–145.

72 Feeney, K.E., Kampman K. M.; Adverse effects of marijuana use. The Linacre Quarterly 83 (2) 2016, 174–178.

Throughout the report, this score will be used to classify problematic cannabis users, although there are other articles published subsequently that consider the possibility of setting the cut-off point when the CAST score is found to be 2 or 3[73,74,75].

High risk cannabis use among 14-18 year old students

Figure 8.1. Categorisation of CAST scale scores among secondary school students aged 14-18 who have used cannabis in the last 12 months (%). Spain, 2006-2023.



Source: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES)

Among students who have used cannabis in the last year and have answered the CAST scale, 69.2% have a score of 0-1 on the CAST scale, 16.3% have a score of 2-3 on the CAST scale and 14.5% have a score greater than or equal to 4 on the CAST scale that is related to problematic use. In terms of evolution, after two consecutive editions with an increase in the problematic use indicator, there seems to be a change in trend and this time the proportion is reduced by 3.3 percentage points with respect to the 2021 figure.

Taking into account the total number of students aged 14-18, the lower presence of problematic cannabis users is also confirmed, with a drop of 0.6 percentage points compared to the figure for 2021 (2.4%).

Table 8.1. Percentage and estimate of problematic cannabis users (according to CAST scale) in the population of secondary school students aged 14 -18. Spain, 2006-2023.

	2006	2008	2010	2012	2014	2016	2019	2021	2023
Population of students aged 14-18 (in thousands) with CAST score ≥ 4 (problem use)	52,468	55,025	78,572	65,239	37,238	43,844	55,387	51,788	43,429
Percentage among all students aged 14 to 18 years old	3.3	3.7	4.6	3.8	2.5	2.8	3.4	3.0	2.4

SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

73 Legleye S., Piontek D., Kraus L.; Psychometric properties of the Cannabis Abuse Screening Test (CAST) in a French sample of adolescents. Drug and Alcohol Dependence 113 (2011) 229–235.

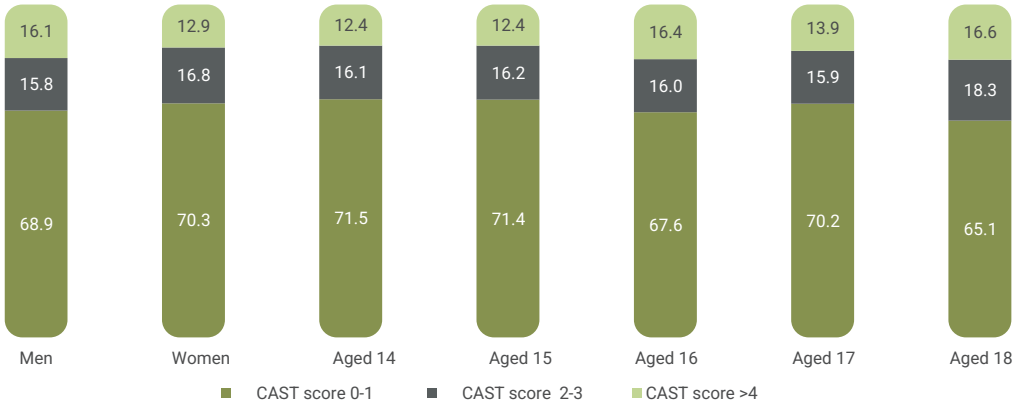
74 Legleye S., Kraus L., Piontek D., Phan O., Jouanne C.; Validation of the Cannabis Abuse Screening Test in a Sample of Cannabis Inpatients. Eur Addict Res 2012;18:193–200

75 Gyepesi A., Urban R., Farkas J., Kraus L., Piontek D., Paksi B., Horvath G., Magi A., Eisinger A., Pilling J., Kokonyei G., Kun B., Demetrovics Z.; Psychometric Properties of the Cannabis Abuse Screening Test in Hungarian Samples of Adolescents and Young Adults. Eur Addict Res 2014;20:119–128.

Considering students who have used cannabis in the last year and have answered the CAST scale, it is observed that the pattern reflecting problematic use is more widespread among boys.

In terms of age, problematic use stands at 12.4% among 14-year-olds, remains stable among 15-year-olds and increases by 4 percentage points among 16-year-olds, where it peaks among underage students. Among students aged 18, this pattern of problematic use is most widespread (16.6%).

Figure 8.2. Categorisation of secondary school students aged 14-18 who have used cannabis in the last 12 months, by their classification on the CAST scale, by sex and age (%). Spain, 2023.



CAST: Cannabis Abuse Screening Test
SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

There are no major gender differences in the type of cannabis use among problematic cannabis users.

Somewhat more than half of the students with problematic cannabis use report using marijuana and hashish interchangeably. Marijuana is slightly more prevalent among men, while hashish is more prevalent among women. Regardless of sex, for problem users, the most common way of using cannabis is by mixing it with tobacco. Where there is some gender difference is in the number of joints used per day. Among boys with problematic cannabis use, the average number of joints used per day is 7.5, almost 2.5 more than among girls (5.1). This shows a higher intensity of use among male students.

Table 8.2. Characteristics of problematic cannabis users (CAST≥4 score) in the population of students aged 14-18 who have used cannabis in the last 30 days, by sex (%). Spain, 2023.

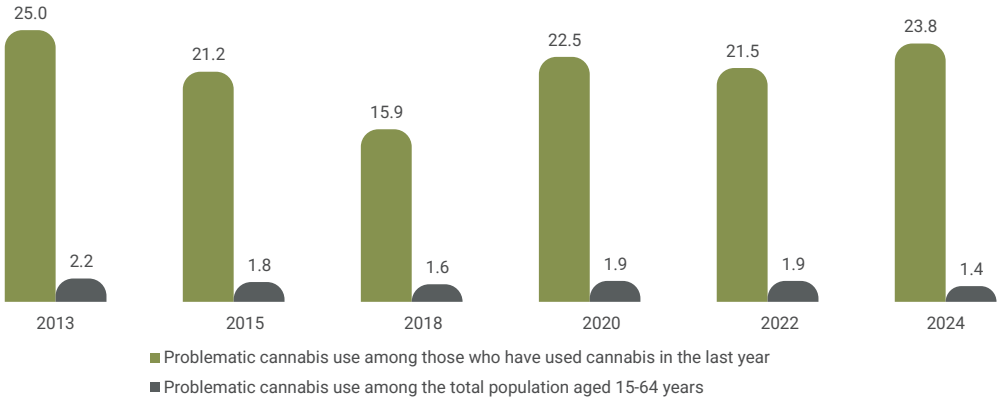
		Total	Men	Women
Cannabis use in the last 30 days	Mainly marijuana	13.9	16.1	11.0
	Mainly hashish	35.3	34.0	37.1
	Both types	50.8	50.0	51.8
Use of cannabis mixed with tobacco in the last 30 days	Yes	85.0	85.1	84.9
	No	15.0	14.9	15.1
Average number of joints consumed per day (No.)		6.4	7.5	5.1

SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES)

High-risk cannabis use in the general population aged 15-64

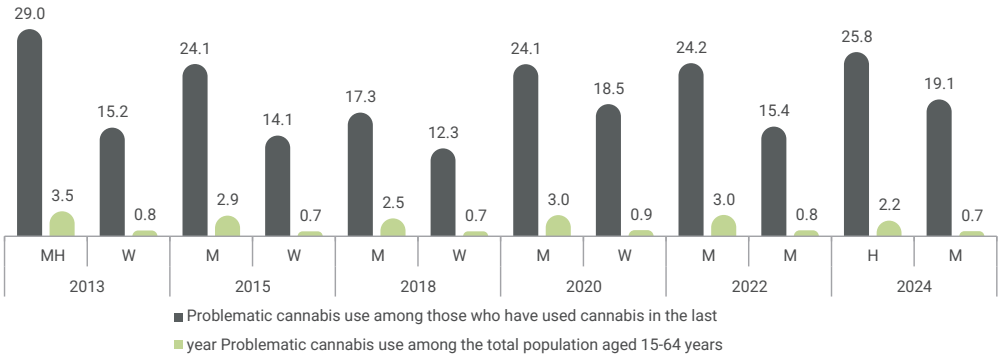
In 2024, the prevalence of problematic cannabis use among the population aged 15-64 was 1.4%, which rises to 23.8% if only those who have used cannabis in the last year are taken into account and is more than 2 percentage points higher than in 2022 (Figure 8.3.). By sex, problematic cannabis use is more prevalent among men than among women who use (25.8% versus 19.1%), although in evolutionary terms the prevalence of problematic use has increased more among women (+3.7 percentage points) than among men (+1.6 percentage points) in the last two years (Figure 8.4).

Figure 8.3. Prevalence of problematic cannabis use (CAST score ≥4) among the population aged 15-64 years and among the population aged 15-64 who have used cannabis in the last 12 months (%). Spain, 2013-2024.



CAST: Cannabis Abuse Screening Test
SOURCE: OEDA. Survey on Alcohol and Drugs in Spain (EDADES).

Figure 8.4. Prevalence of problematic cannabis use (CAST score ≥ 4) among the population aged 15-64 and among those who have used cannabis in the last 12 months, by sex (%). Spain, 2013-2024.



SOURCE: OEDA. Survey on Alcohol and Drugs in Spain (EDADES).

With regard to the use made by those who present a possible problematic use of cannabis, it can be observed that the use of marijuana has decreased and the use of resin has increased. They are using more and more on more days and each time they use they smoke more joints, however they mix it somewhat less with tobacco.

Table 8.3. Characteristics of cannabis use in the population aged 15-64 with problematic cannabis use (CAST≥4), by sex. (%) Spain 2015-2024.

		2015			2018			2020		
		T	M	W	T	M	W	T	M	W
Cannabis use in the last 30 days	Mainly marijuana	45.3	45.0	46.2	39.7	40.2	38.2	43.5	43.9	42.0
	Mainly hashish	18.1	18.0	18.6	26.0	21.1	43.1	20.2	19.3	23.1
	Both types	36.6	36.9	35.2	34.3	38.7	18.8	36.3	36.7	34.9
Cannabis use mixed with tobacco last 30 days	Yes	94.5	94.1	96.5	90.2	89.5	92.8	90.1	89.1	93.2
	No	5.5	5.9	3.5	9.8	10.5	7.2	9.9	10.9	6.8
Average number of days of use in the last 30 days		-	-	-	-	-	-	-	-	-
Average number of joints used per day		3.3	3.4	2.8	3.6	3.7	3.2	3.5	3.7	3.0

		2022			2024		
		T	M	W	T	M	WM
Cannabis use in the last 30 days	Mainly marijuana	38.3	39.4	34.3	38.7	38.3	39.9
	Mainly hashish	24.8	23.7	28.6	32.8	33.2	31.6
	Both types	36.9	36.8	37.1	28.5	28.5	28.5
Cannabis use mixed with tobacco last 30 days	Yes	90.1	89.4	92.8	87.4	88.4	84.6
	No	9.9	10.6	7.2	12.6	11.6	15.4
Average number of days of use in the last 30 days		19.8	19.9	19.6	22.6	23.0	21.5
Average number of joints used per day		3.6	3.8	2.8	4.2	4.5	3.3

SOURCE: OEDA. Survey on Alcohol and Drugs in Spain (EDADES).

Problematic cannabis users use cannabis mostly in the form of joints. There has been a decrease in problematic cannabis use through the use of e-cigarettes, as well as a decrease in oral cannabis use.

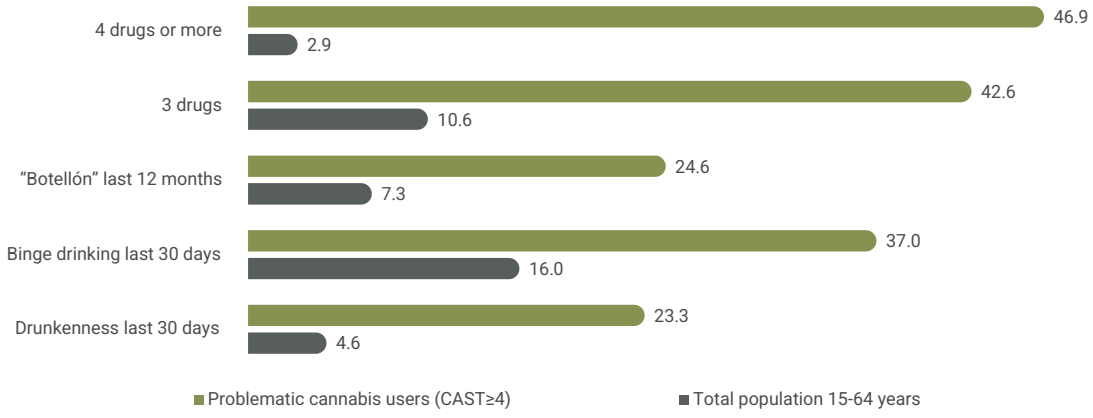
Table 8.4. Characteristics of cannabis use in the population aged 15-64 with problematic cannabis use (CAST≥4), by sex. (%) Spain 2018-2024.

	2018			2020			2022			2024		
	T	M	W	T	M	W	T	M	W	T	M	W
As a joint or spliff	95.0	94.7	96.4	96.6	96.7	96.5	95.7	94.9	98.4	93.1	93.8	91.2
Using waterpipes, bongs or hookahs	5.3	6.0	2.7	4.2	4.8	2.0	7.1	6.7	8.4	5.0	5.4	3.6
Orally: cakes, biscuits, etc.	2.9	2.9	3.0	2.5	3.2	0.5	2.2	2.1	2.5	0.3	0.4	0.0
Using electronic cigarettes	0.0	0.0	0.0	4.3	4.5	3.5	1.1	0.9	1.9	0.5	0.5	0.5

SOURCE: OEDA. Survey on Alcohol and Drugs in Spain (EDADES).

With regard to heavy drinking and polydrug use, these habits are more prevalent among problematic cannabis users than in the total population aged 15-64 (Figure 8.5.).

Figure 8.5. Prevalence of drunkenness and binge drinking in the last 30 days and prevalence of "botellón" and polydrug use of psychoactive substances in the last 12 months in the population aged 15-64 and in the population displaying problematic cannabis use (CAST≥4) (%). Spain, 2024.



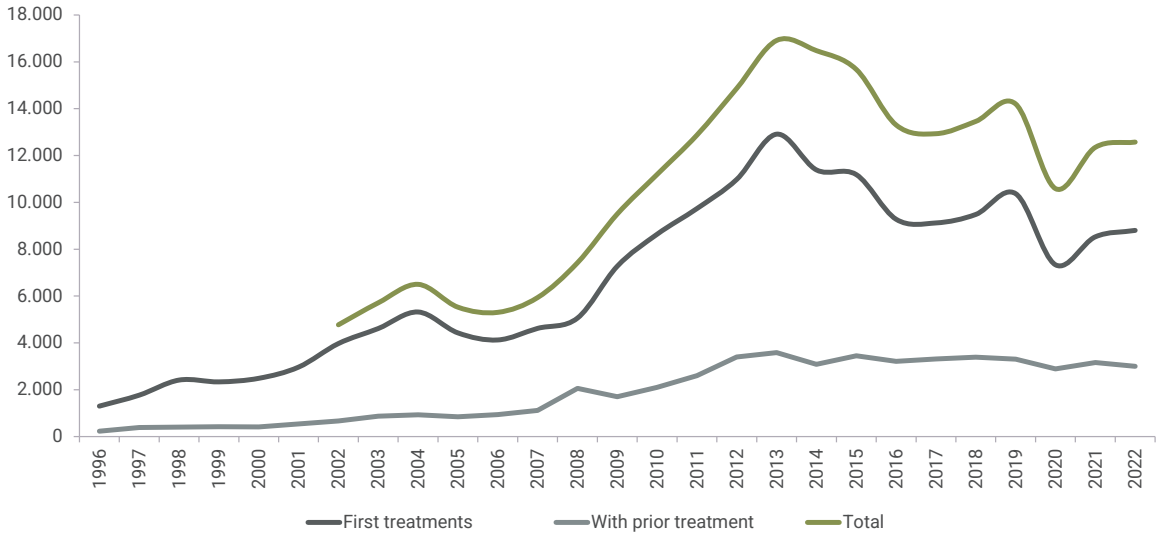
SOURCE: OEDA. Survey on Alcohol and Drugs in Spain (EDADES).

8.2 Admissions to treatment for cannabis use

The Admissions to treatment indicator is a register that collects individualised data on admissions to outpatient treatment for abuse or dependence on psychoactive substances (legal and illegal drugs, except tobacco) in an Autonomous Community/City and in a given year. This indicator became operational in 1987, but it was not until 1996 that the registration of cannabis treatment admissions began. A detailed protocol describes the variables to be included, the psychoactive substances collected and the inclusion and exclusion criteria. This information is available on the website of the National Plan on Drugs (PNSD).

A total of 45,853 admissions to treatment for psychoactive substance abuse or dependence (excluding alcohol and tobacco) were recorded in 2022, with 12,574 admissions generated by cannabis abuse or dependence.

Figure 8.6. Number of admissions to treatment for cannabis abuse or dependence. Spain, 1996-2022.



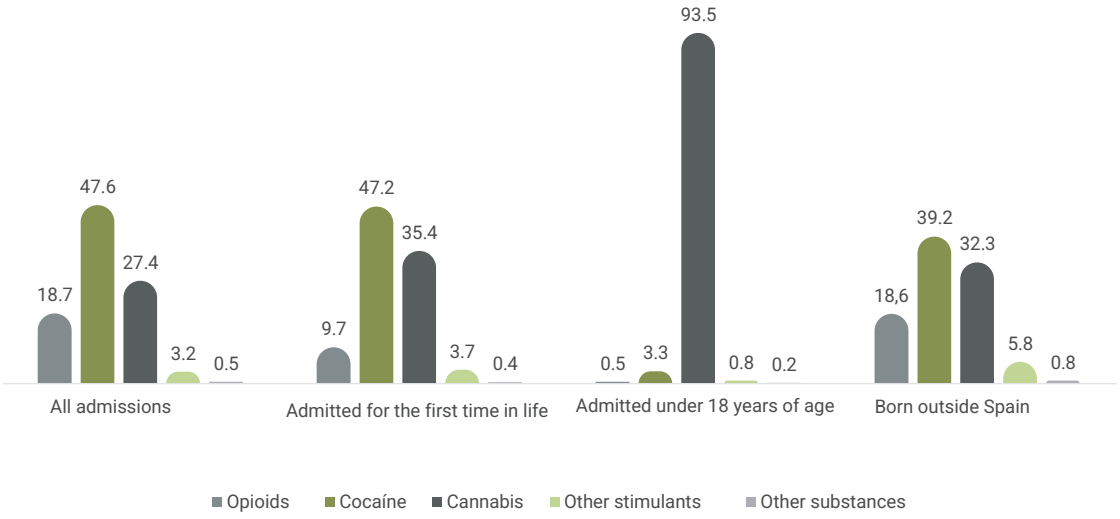
Source: OEDA. Treatment Demand Indicator for psychoactive substance use.

In 1996, admissions to treatment for cannabis use accounted for less than 5% of all admissions, but the share of cannabis in this indicator increased steadily, rising sharply from 2007 to 2013, surpassing admissions due to heroin for the first time in 2012.

Cannabis is currently the second substance (27.4%) responsible for treatment admissions in Spain, behind cocaine (47.6% of the total) and followed by opioids (18.7%), being in some Autonomous Communities (Aragón, La Rioja and Melilla) the top substance responsible for treatment admissions.

It is important to highlight that cannabis abuse or dependence is the leading cause among minors seeking treatment for psychoactive substance abuse or dependence in Spain. Thus, 93.5% of all under-18s who have been admitted to treatment for illegal drug use in 2022 in our country have done so for problems associated with cannabis use.

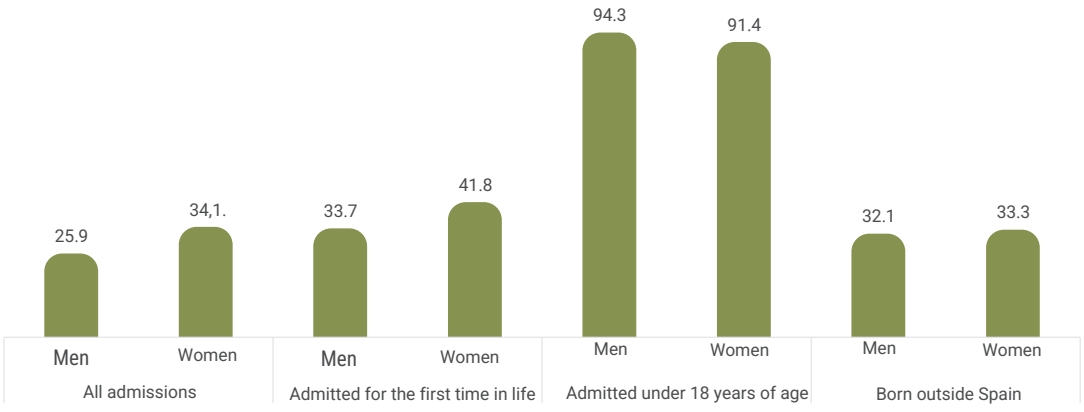
Figure 8.7. Percentage of admissions to treatment for psychoactive substance abuse or dependence, by main drug, excluding alcohol (total admissions, first-time admissions, under 18s and those born outside Spain) (%). Spain, 2022.



Source: OEDA. Treatment Demand Indicator for psychoactive substance use.

The proportion of women admitted to treatment who use cannabis is higher than that of men both in total admissions (34.1% for women and 25.9% for men), and when analysing first-time admissions (41.8% for women and 33.7% for men) or those admitted under the age of 18 (91.4% for girls and 94.3% for boys), although in the latter case the difference is small. However, among those born outside Spain, the weight of cannabis is also greater among women, who are the ones who most seek treatment, although the difference is minimal.

Figure 8.8. Percentage of admissions to treatment for cannabis abuse or dependence, as main drug, by sex (total admissions, first-time admissions, under 18 years old, and those born outside Spain) (%). Spain, 2022.



Source: OEDA. Treatment Demand Indicator for psychoactive substance use.

Men

Those admitted to treatment for synthetic cannabinoids account for 0.2% of admissions due to cannabis, so there are too few cases to draw definitive conclusions.

The profile of those admitted to treatment for cannabis is that of a 28.4 year-old male who is seeking treatment for cannabis for the first time, with secondary studies completed and who is employed. He comes mainly on his own initiative or on the advice of a primary care physician. Lives with his family of origin, in a stable home. They started using at the age of 15.8 years, they arrive at treatment using every day, and the route of use is pulmonary or smoked. 35.1% report having used other substances in the 30 days prior to the onset of use, with cocaine and alcohol being the most commonly used substances.

The specific profile of those admitted to treatment for synthetic cannabinoids is that of a 28.6 year-old male, with primary education. He comes on his own initiative or under advice from family and/or friends. Lives with his family of origin, in a stable home. He started using at the age of 19.5 years, using every day and the route of use being predominantly pulmonary or smoked.

Table 8.5. Characteristics of those admitted to treatment for cannabis abuse or dependence by sex (%). Spain, 2022.

		MEN	WOMEN	TOTAL
Number of cases		9,684	2,889	12,574
Percentage of cases (%)		77.0	23.0	100.0
Previously treated (%)		27.0	20.3	25.4
Calculated age		28.4	28.2	28.4
Maximum level of education completed (%)	No education	12.6	8.5	11.7
	Primary	40.0	36.0	39.1
	Secondary	42.7	47.7	43.8
	Higher education	4.7	7.7	5.4
Main employment status (%)	Working	32.9	27.8	31.7
	Unemployed, has not worked previously	8.8	8.2	8.7
	Unemployed, has worked previously	29.7	30.6	29.9
	Other situations	28.6	33.5	29.7
Born outside Spain (%)	Spanish	82.6	87.5	83.7
	Foreign	17.4	12.5	16.3
Primary source of referral for treatment (%)	Other drug treatment services	2.0	2.0	2,0
	General Practitioner, Primary Health Care	14.6	14.2	14.5
	Hospitals or other health services	9.5	14.0	10.5
	Social Services	5.1	13.0	6.9
	Prison, reform or internment centre for minors	5.7	1.8	4.8
	Legal or police services	11.9	7.1	10.8
	Companies or employers	0.1	0.0	0.1
	Family and friends	13.6	9.9	12.7
	Own initiative	31.3	29.5	30.9
	Education services	1.0	1.5	1.1
	Other	5.3	7.1	5.7
No. of children		0.5	0,7	0,5
Longest cohabitation in 30 days prior to admission to treatment (%)	Alone	12.3	12.3	12.3
	Only with a partner	8.4	11.0	9.0
	Only with children	0.6	6.2	1.8
	With partners and children	11.9	11.5	11.8
	With parents or family of origin	51.6	46.0	50.3
	With friends	3.4	3.4	3.4
	Detainee (e.g. prison, social integration centre)	4.2	1.6	3.6
	In non-detaining institutions (eg. Hostels)	4.8	4.4	4.7
	Others. Specify	2.9	3.8	3.1

		MEN	WOMEN	TOTAL
Main accommodation in 30 days prior to admission to treatment (%)	Houses, flats, apartments	87.6	91.4	88.5
	Prison, reform or internment centre for minors	4.7	1.9	4.1
	Other institutions	3.8	4.3	3.9
	Pensions, hotels, hostels	0.4	0.4	0.4
	Unstable/precarious housing	1.8	1.1	1.6
	Other places	1.7	0.9	1,5
Other psychoactive substances used in the last 30days	Opioids	2,8	2.4	2.8
	Cocaine	43.3	34.8	41.6
	Cocaine-free stimulants	10.5	12.7	10,9
	Hypnosedatives	8.4	8.2	8.3
	Hallucinogens	1.9	1.6	1.9
	Volatile Substances	0.4	0.6	0.4
	Cannabis	0.0	0.0	0.0
	Alcohol	68.9	68.8	68.9
	Other psychoactive substances	0.4	0.5	0.4
Age of onset of primary drug use		15.6	16.6	15.8
Frequency of use of main drug	Every day	70.0	68.4	69.6
	4-6 days per week	4.6	4.6	4.6
	2-3 days per week	6.2	5.9	6.1
	1 day per week	2.0	2.1	2.0
	Less than 1 day per week	3.0	4,1	3.3
	Did not use	14.1	15.0	14,3
Route of administration of main drug	Oral	1.6	1.4	1.5
	Pulmonary or smoked (spliff with cocaine, silver foil)	97.7	98.0	97.7
	Intranasal or snorted	0.6	0.4	0.5
	Injected or parenteral	0.0	0.0	0.0
	Other	0.2	0.2	0.2
Injected drugs at some time in life		1.7	1.1	1.5
Injected drugs in last 12 months with route of use		0.2	0.3	0.2
Injected last 30 days with route of use		0.1	0.1	0.1
Maximum HIV prevalence		3.9	1.4	3.3
Maximum Hepatitis C prevalence		4.1	2.4	3.6
Maximum Hepatitis B prevalence		1.5	0.7	1.3
Minimum HIV prevalence		0.9	0.4	0.8
Minimum Hepatitis C prevalence		0.9	0.6	0.8
Minimum Hepatitis B situation		0.3	0.2	0.3

Source: OEDA. Treatment Demand Indicator for psychoactive substance use.

The analysis by sex shows a similar profile, with a higher level of educational attainment among women admitted to treatment than among men (the percentage of people with primary education is higher among men and the percentage of people with secondary and university education is higher among women). A higher percentage of employees among men (32.9%) than among women (27.8%). No significant differences are found in terms of cohabitation patterns (except for a slightly higher percentage of women, 6.2%, living alone with their children compared to 0.6% of men) and type of accommodation by sex. There are also no sex differences in the frequency of cannabis use, but there is a higher prevalence of simultaneous use of other substances among men than among women.

8.3 Cannabis-related hospital emergencies

The indicator on Hospital emergencies due to acute reaction after non-medical use of psychoactive substances indicator collects a national sample of hospital emergencies related to non-medical or non-therapeutic use of psychoactive substances in Spain.

Information is collected for one week of each month, randomly selected from the Spanish Observatory on Drugs and Addictions; some Autonomous Communities carry out a continuous collection in some hospitals. This indicator is a sample-based indicator, which prevents a direct assessment of the number of cases reported, but it does provide information on the weight of different psychoactive substances in emergency episodes, as well as changes in trends. This indicator records substances for which the practitioner states in the medical record a direct link to the emergency. Additionally, according to the reporting protocol, information on alcohol-related emergency episodes is only collected if alcohol is present together with another psychoactive substance. More detailed information on the inclusion and exclusion criteria, as well as the data collection form, can be found on the website of the National Plan on Drugs[76].

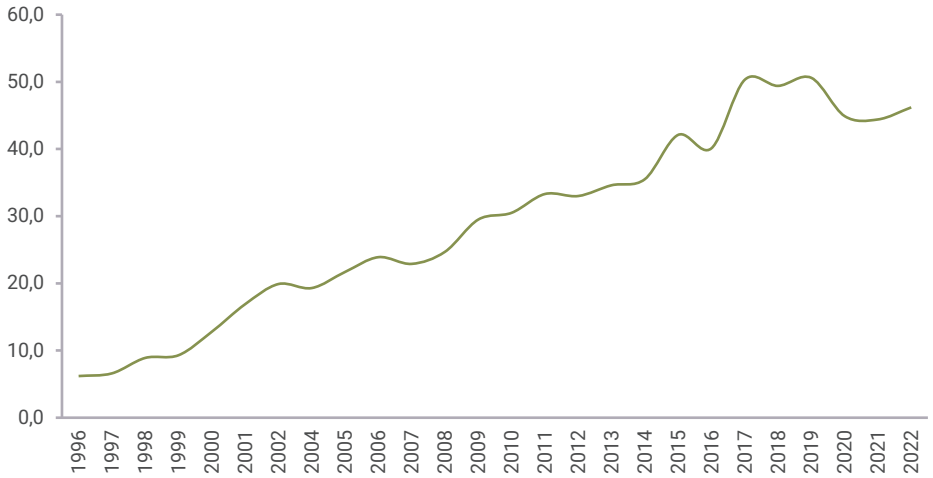
In 2022, 6,627 hospital emergency episodes related to non-medical or non-therapeutic use of psychoactive substances were recorded in the sample[77], a stable sample size since 2010. In these 6,627 episodes, cannabis and cocaine were the substances with the highest presence, accounting for 46.2% and 46.1%, respectively, of the emergency episodes analysed. By sex, cannabis was found to be present in almost the same percentage of episodes among men (32.9%) as among women (30.2%).

As can be seen in the figure below, concerning the evolution over time of substance use-related emergencies between 1996 and 2022, it is worth noting the continued increase in the percentage of episodes related to cannabis use, which went from being related to 6.2% of episodes in 1996 to 46.2% in 2022. This represents a clear upward trend in cannabis-related emergencies over the entire historical series of the indicator. This continued increase in cannabis-related emergencies has not been observed for any of the other illegal psychoactive substances detected in this indicator.

76 https://pnsd.sanidad.gob.es/profesionales/sistemasInformacion/sistemaInformacion/indicador es.htm

77 In accordance with the protocol for this indicator, this figure corresponds to the episodes found in the review of emergencies occurring during a randomly selected week for each month of the year in the hospitals selected by the Autonomous Regions that participated in the data collection in 2022.

Figure 8.9. Percentage of episodes in a sample of hospital emergencies related to drug use that are related to cannabis use. Spain, 1996-2022.



Source: OEDA. Indicator Hospital emergencies in users of psychoactive substances.

In general, the results of the emergencies indicator are consistent with those observed in the other indicators and in national surveys, where cocaine and cannabis occupy an important share of drug use in Spain.

With regard to the usual profile of emergency episodes, in general it is a man (67.7%), average age 35.8 years, who has used more than one substance (67.3%), and it is usually resolved with medical discharge (77%). In emergency episodes related to cannabis use, the usual profile is that of a man (74.4%) with an average age of 32.2 years. 77.1% of these episodes end with medical discharge, 13.5% with hospital admission and 3.8% are transferred to another centre. The average age of cannabis-related emergency episodes is lower than that found for other substances, although it has shown a clear upward trend, which seems to be stabilising in recent years. With regard to synthetic cannabinoids, the number of cases is very small, representing only 0.3% of all cannabis cases. The usual profile continues to be male (75%), with an average age of 32.

Table 8.6. Characteristics of hospital emergency episodes related to the use of any psychoactive substance and to cannabis use. Total and by sex. Spain, 2022.

	2022					
	Any substance			Cannabis		
	Total	Men	Women	Total	Men	Women
Number of episodes	6,627	4,487	2,135	2,862	2,128	733
Percentage of emergencies (%)	100	67.7	32.2	43,2	74.4	25.6
Average age (years)	35.8	36,5	34.5	32.2	32.9	30.2
Sex (%) women	32.2			25.6		
Resolution of urgency (%)						
Medical discharge	77.0	77.2	76.7	77.1	76.7	78.2
Voluntary discharge	6.3	6.6	5.6	5.6	5.6	5.5
Hospital admission	12.9	12.4	13.8	13.5	13.4	13.8
Death in the emergency department	0.0	0.0	0.0	0,0	0.0	0.0
Transfer to another centre	3.8	3.7	3.9	3,8	4.2	2.5

Source: OEDA. Indicator Hospital emergencies in users of psychoactive substances.

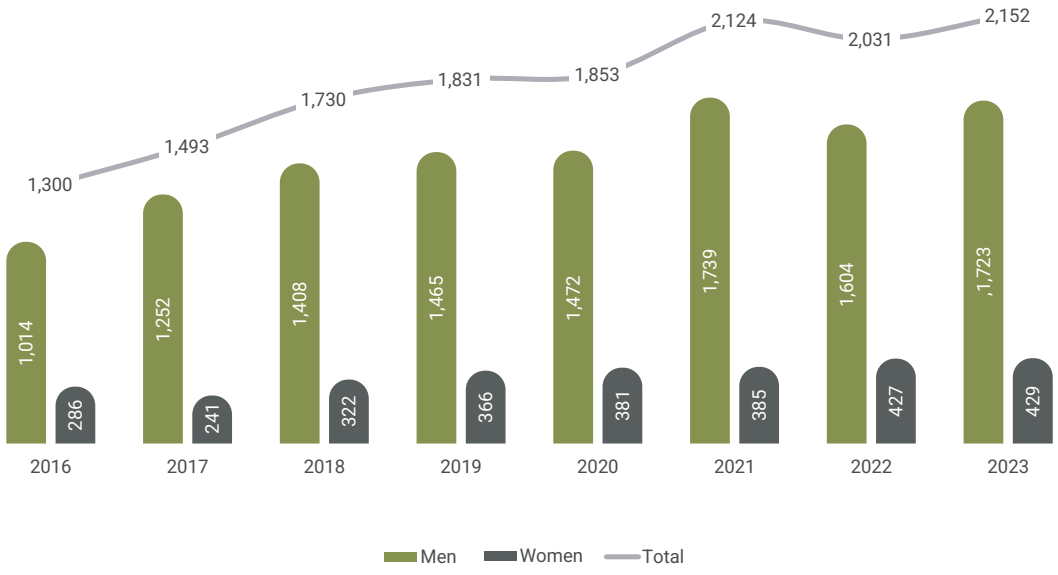
The profile has changed over time, with increases, in addition to the average age of those treated, in the weight of women, who have gone from accounting for less than 17% in 1997 to 25.6% in 2022. Likewise, the percentage of cannabis emergencies resulting in hospital admission has also increased over time.

8.4. Cannabis-related hospitalisations

The RAE-CMBD indicator was implemented in 2016 as a new data model of the Minimum Basic Data Set for Hospital Discharges, extending the register to areas other than hospitalisation (outpatient ward, highly complex technical and procedural departments and emergency departments) and to the private sector. Its structure, format and contents, as well as the rules for recording and sending information are set out in Royal Decree 69/2015 of 6th February, which regulates the Specialised Care Healthcare Activity Register.

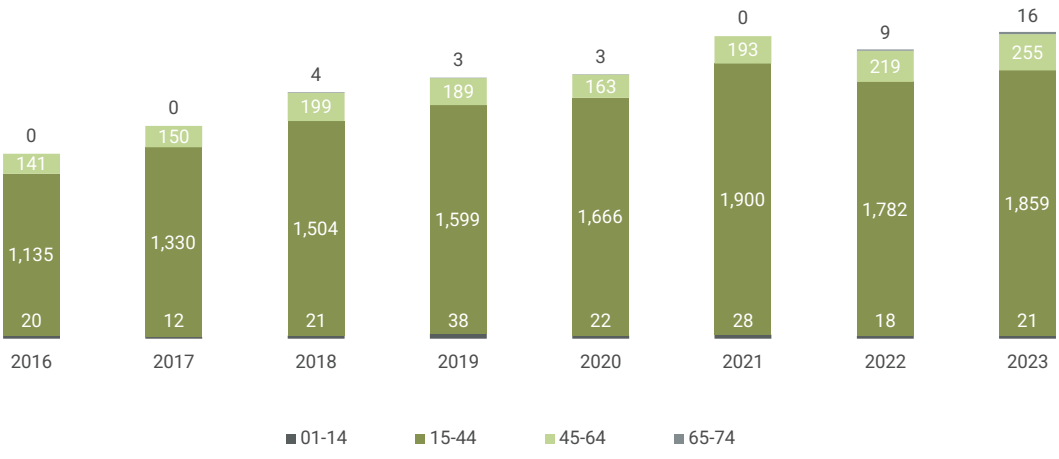
According to this indicator, in 2024, 2,152 people were hospitalised for a cannabis use disorder, mainly people aged 15-44. In the last 7 years these admissions have almost doubled.

Figure 8.10. Number of people hospitalised for a cannabis use disorder, by sex and total. Spain 2016-2023.



Source: RAE-CMBD.

Figure 8.11. Number of people hospitalised for cannabis use disorder, by age. Spain 2016-2023.



Source: RAE-CMBD.

8.5. Mortality related to cannabis use

Mortality related to psychoactive substance use is a relevant indicator of the magnitude and health and social impact of this important public health problem.

Spain currently has two main sources of information that allow data on secondary mortality due to drug use to be compiled: the Specific Register of Mortality due to acute drug reactions of the Spanish Observatory on Drugs and Addictions (OEDA) of the Government Delegation for the National Plan on Drugs[78] which provides information on the drugs present in the deceased, and the General Register of Mortality of the National Statistics Institute (INE)79 which does not provide information by type of drug. The methodology and main results of cannabis-related mortality in Spain collected from the Specific Register of Mortality due to acute drug reaction are described below.

The **Specific Register of Mortality** due to acute drug reactions aims to collect information on deaths with judicial intervention in which the direct and fundamental cause of death is an acute adverse reaction following the use of non-medical psychoactive substances (substances that have not been prescribed by a doctor or, if prescribed, have been administered incorrectly), and intentional (induced by the search for psychological effects or the existence of dependence or those carried out with suicidal intent).

The term **acute reaction** is used rather than "overdose", because it is not always certain that the cause of death is a pharmacological overdose, and various pathophysiological mechanisms of a toxic, allergic or other nature may be involved.

The **primary source of information** comes from the Forensic Anatomical Institutes, Forensic Doctors, National Institute of Toxicology and Institutes of Legal Medicine and Forensic Science, which report the data to the Autonomous Community or City in which they are located.

The **population coverage** on a geographical level has been progressively increasing. In 2022, all the judicial districts of all the autonomous communities and cities (CCAA) have notified. The coverage of this indicator in 2022 is practically 100% of the Spanish population (99.4% in 2021).

In recent years there has been a **rise in the number of deaths** associated with drug use in Spain, mainly for three reasons:

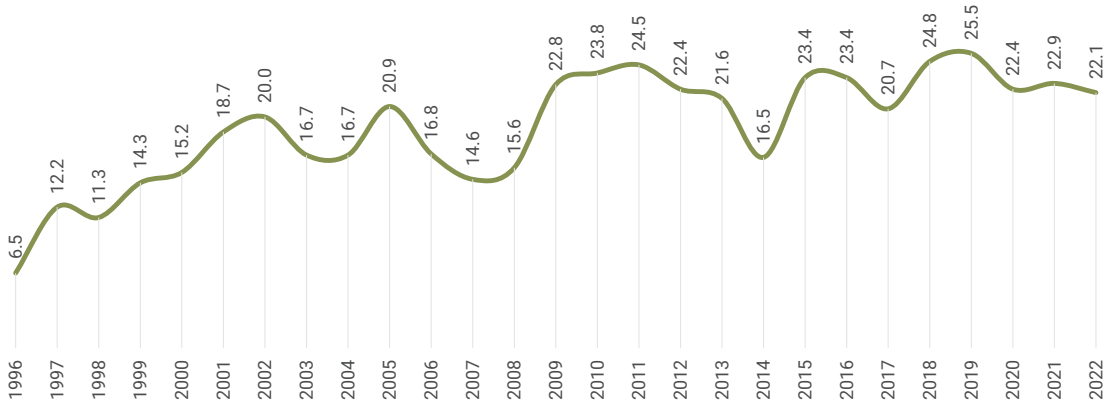
- Increased national coverage of the indicator to 100% in 2022,
- Improved reporting of suicides and
- Increasing the age range that includes all ages from 2020.

In 2022, 1266 deaths were reported nationally, although toxicological information disaggregated by type of substance is available for only 1,037 cases.

78 https://pnsd.sanidad.gob.es/
79 INE. Instituto Nacional de Estadística

In 2022, the main substances detected in the 1,037 deaths due to acute reactions following the use of psychoactive substances for which toxicological information is available were hypnosedatives in 66.0% of cases (62.8% in men and 76.8% in women), of which 63,0% were benzodiazepines (653 deaths), opioids in 51.2% (49.6% in men and 56.1% in women), cocaine in 59.9% (64.2% in men and 45.1% in women) and cannabis in 22.1% (24.3% in men and 14.3% in women). Alcohol is only recorded when it appears together with another substance and never when it appears as a single substance, having been detected in 36.8% of cases (38.6% in men and 30.8% in women), breaking the downward trend started in 2019 and remaining stable since 2021. In terms of trends, there has been a certain increase in cocaine, stabilisation of hypnosedatives and alcohol, and a slight decrease in opioids.

Figure 8.12. Percentage of deaths due to acute reaction after the use of psychoactive substances in which cannabis is present (%). Spain*, 1996 - 2022.



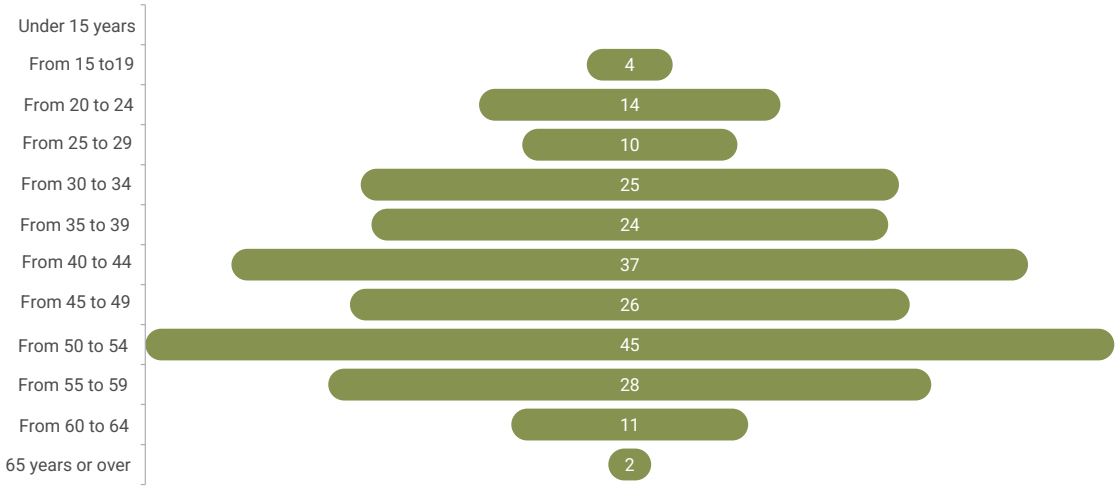
Source: OEDA. Indicator on Mortality due to acute reaction to psychoactive substances. Specific Mortality Register.

Cannabis has shown an increasing presence among fatalities in recent years, reaching its highest value in 2019, when cannabis was detected in 25.5% of all fatalities, usually in combination with other substances (hypnosedatives, opioids, cocaine and alcohol). In 2022, it was detected in 229 fatalities, in 14 cases as a single substance and, irrespective of the detection of other substances, with hypnosedatives in 68.1%, with opioids in 59.0%, with cocaine in 58.5% and with alcohol in 27.9% of these cases.

In terms of **sex**, cannabis was detected in 24.3% of all male fatalities and 14.3% of all female fatalities.

In terms of **age** , the highest presence of cannabis was detected in the 40-54 age range. Only one child under 15 years of age died among the total number of deaths due to an acute reaction to psychoactive substances and no cannabis was detected in this child. Of the 11 fatalities aged 15-19, cannabis was detected in 4 of them. Likewise, among the 54 deaths due to acute reaction to psychoactive substances aged 65 years and older, cannabis was detected in only two of them.

Figure 8.13. Number of deaths due to acute reactions to psychoactive substances in which cannabis is present, by age (%). Spain*, 1996 – 2022.



Source: OEDA. Indicator on Mortality due to acute reaction to psychoactive substances. Specific Mortality Register.

The profile of people who died from **acute reactions to psychoactive substances** in whom **cannabis** was detected is that of an adult male, aged 43.7 years, single, who did not die at home, whose death was not due to previous pathologies aggravated by the use of psychoactive substances, with negative HIV serology, who had recently used a substance but who did not show recent signs of venipuncture, nor evidence of suicide.

Gender differences show that the deceased **women** in whom cannabis was detected on average are younger than men, more of them are foreign, more of them are separated or divorced. In women, the presence of the corpse is mostly in the home, there is a higher percentage of women who present evidence of suicide and there is a lower percentage of women whose death is related to a previous pathology complicated by drug use.

Table 8.7. Profile of persons who died due to acute reaction to psychoactive substances in whom cannabis was detected, by sex (%). Spain, 2022.

		TOTAL	MEN	WOMEN
Average age (years)		43.7	44.0	42.0
Nationality	Spain	87.1	89.4	74.2
	Foreign	12.4	10.1	25.8
Marital Status	Single	71.2	71.9	66.7
	Married	12.5	13,5	6.7
	Legally separated/Divorced	13.5	12.4	20.0
	Widower	2.9	2.2	6.7

		TOTAL	HOMBRE	WOMEN
Provenance of the corpse	Address	67.3	65.9	75.0
	Hotel/Hostel	4.2	4.4	3.1
	Street	12.6	13.7	6.3
	Public establishment	1.9	2.2	0.0
	Hospital	3.3	2.2	9.4
	Prison	5.6	6.6	0.0
	Other place	5.1	4.9	6.3
Evidence of recent psychoactive substance use	Yes	81.5	81.2	83.3
	No	18.5	18.8	16.7
Evidence of Suicide	Yes	9,9	8.4	20.0
	No	90.1	91.6	80.0
Death due to previous pathology complicated by use	Yes	36.3	38.6	24.0
	No	63.7	61.4	76.0
HIV antibodies	Positive	20.5	19.4	27.3
	Negative	79.5	80.6	72.7

Source: OEDA. Indicator on Mortality due to acute reaction to psychoactive substances. Specific Mortality Register.

8.6. Road accidents related to cannabis use

The INTCF together with the IMLCFs equipped with a chemical-toxicological analysis laboratory (IMLCFC, IVML, IMLCFA, IMLCFM, IMLCFV, IMLCFIB and INCIFOR) published in 2024 the annual report on the deaths that occurred in traffic accidents during the year 2023 and which have been investigated from a forensic toxicological point of view throughout the national territory. The data presented in relation to toxicological findings come from requests made by the various judicial bodies.

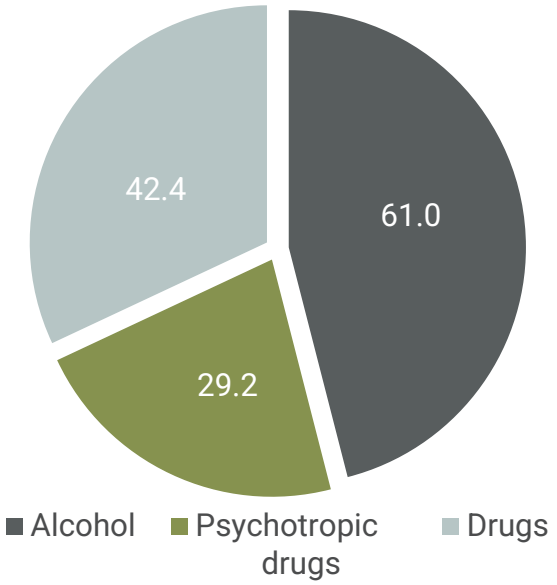
The information presented in this monograph refers to toxicological analyses from post mortem samples of 862 drivers and 200 pedestrians killed in road accidents during the year 2023. Its aim is to show the results of toxicological analyses concerning the presence of alcohol, drugs of abuse and psychotropic drugs and the incidence of use of each of these three groups of intoxicants, either in isolation or in combination. The study also relates these toxicological findings to several epidemiological variables, such as sex, age, type of vehicle or the day of the week on which the fatal accident occurred[80].

Analyses carried out on road traffic fatalities in 2023 show that among the 462 drivers who died in road traffic accidents and underwent autopsy and toxicological analyses, 282 (61%) showed positive toxicological results for alcohol, 196 (42.4%) for drugs of abuse, and 135 (29.2%) for psychotropic drugs, either alone or in combination. (Figure 8.14).

80 https://www.mjusticia.gob.es/es/ElMinisterio/OrganismosMinisterio/Documents/HallazgosToxicologicosVictimasMortales2023.pdf

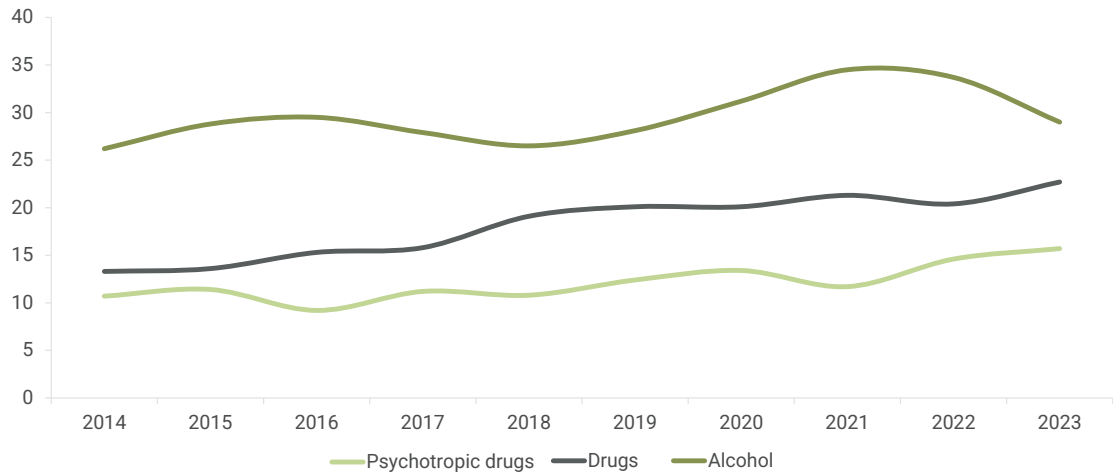
The **comparative study of the last ten years** of the number of drivers with positive toxicological results shows an increase of 10.9% in 2023 compared to 2014. With regard to alcohol consumption, a decrease of 4.7% in the number of drivers killed in traffic accidents is observed in 2023 compared to 2022. With regard to drug use, there is an upward trend, with an increase of 9.4 % compared to 2014 and an increase of 2.3 % compared to 2022. Finally, for psychotropic drugs there is an increase of 1.1% compared to 2022 (Figure 8.15).

Figure 8.14. Percentage of drivers killed out of a total of 462 in whom substances (alcohol, drugs and/or psychotropic drugs) are detected. Spain, 2023.



*Positive for alcohol: Blood alcohol concentration of 0.10 g/L or more.
Source: Toxicological Findings in Traffic Accident Fatalities (2023) National Institute of Toxicology and Forensic Sciences. Ministry of Justice.

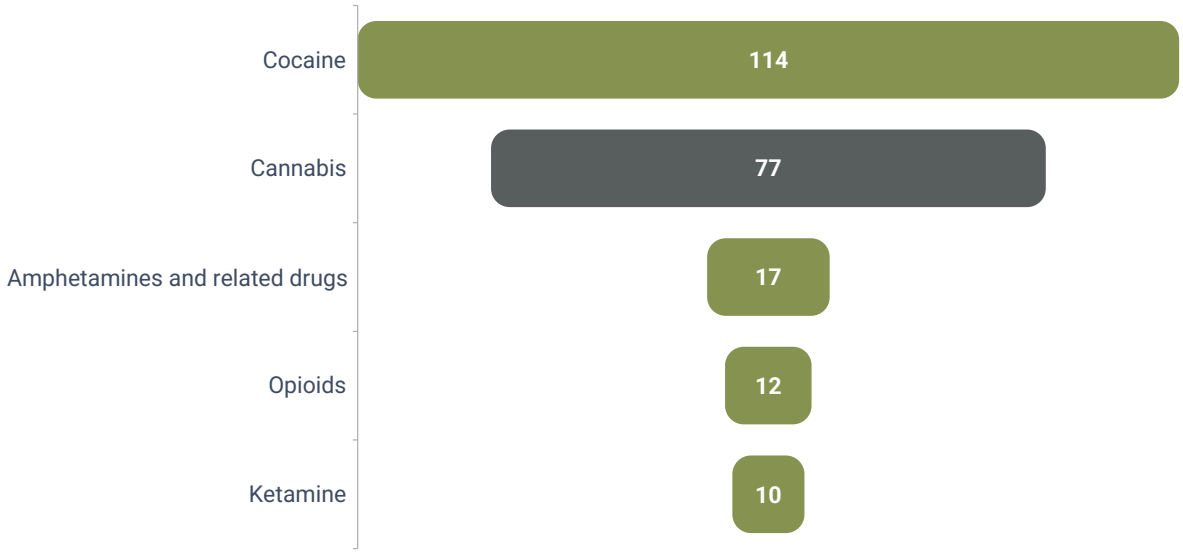
Figure 8.15. Percentage of drivers killed by toxicological result. Spain, 2014-2023.



*Positive for alcohol: Blood alcohol concentration of 0.10 g/L or more.
Source: Toxicological Findings in Traffic Accident Fatalities (2023) National Institute of Toxicology and Forensic Sciences. Ministry of Justice.

Regardless of whether there was associated use of drugs of abuse, alcohol and/or psychotropic drugs, by itself the most commonly used drug in 2023 was cocaine (58.2 %), followed by cannabis (39.3 %). In terms of age, cannabis was the most commonly used drug up to the age of 34, while cocaine was the most commonly used drug in the 35-64 age range..

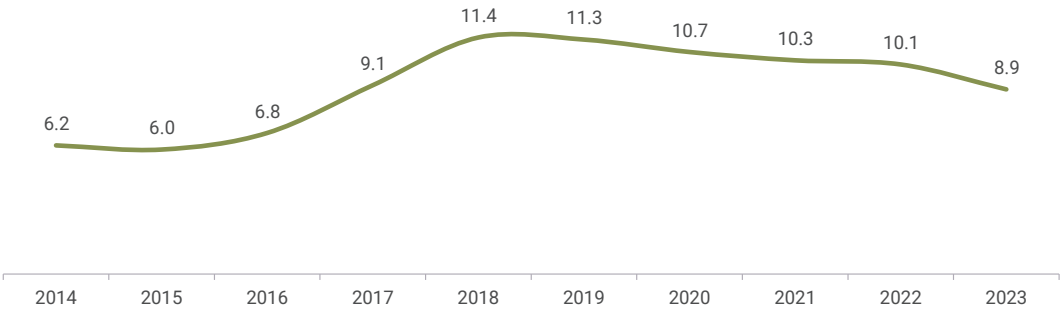
Figure 8.16. Number of drivers killed who tested positive for drugs, by drugs detected*. Spain, 2023.



*More than one drug may be detected in the same deceased.
Source: Toxicological Findings in Traffic Accident Fatalities (2023) National Institute of Toxicology and Forensic Sciences. Ministry of Justice.

From 2019 onwards, there is a progressive decrease in the presence of cannabis in drivers killed in traffic accidents in 2023.

Figure 8.17. Percentage of drivers killed who tested positive for cannabis. Spain, 2014-2023.



Source: Toxicological Findings in Traffic Accident Fatalities (2023) National Institute of Toxicology and Forensic Sciences. Ministry of Justice.

09

SYNTHETIC CANNABIOIDS

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Explanatory note: To simplify the exposition and reading of this chapter, the term synthetic cannabinoids also includes semi-synthetic cannabinoids. Unlike synthetic cannabinoids, semi-synthetic cannabinoids are mainly produced from low-THC cannabidiol extracted from cannabis (hemp), the production and availability of which has proliferated in recent years in the United States and Europe.

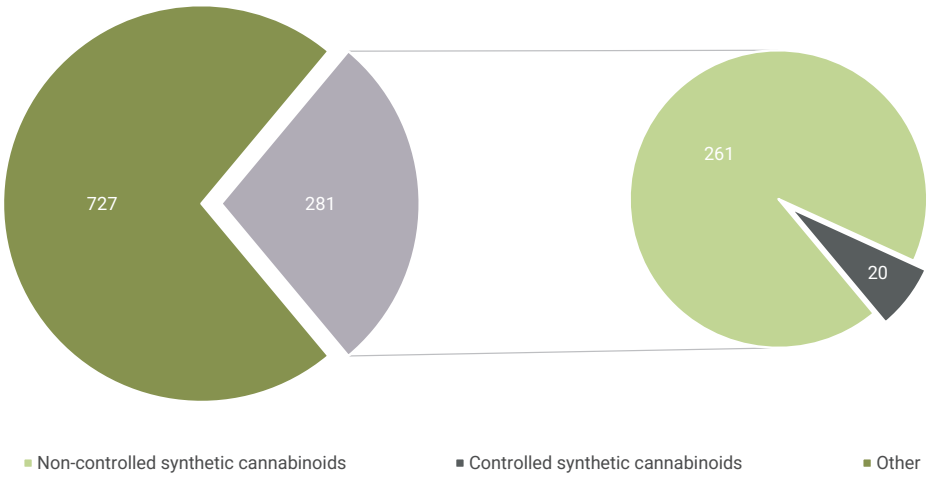
Despite their relatively infrequent use, synthetic cannabinoids have been included in this report because of their emerging nature and the concerns they raise due not only to the effects of these substances, but also to the great diversity and expansion in the market of products containing them.

9.1. General characteristics

The following general information on synthetic cannabinoids has been compiled taking into account some publications of the European Union Drugs Agency (EUDA)[81,82]. Synthetic cannabinoids are a group of substances that mimic the effects of (−)-trans-Δ9-tetrahydrocannabinol (THC), which is the main substance responsible for the most important psychoactive effects of cannabis. Like THC, synthetic cannabinoids bind to the body's cannabinoid receptors. Scientists originally developed synthetic cannabinoids to study the body's endocannabinoid system, as well as to provide information about diseases and help develop new drugs. In the mid-2000s, they began to appear in Europe as "legal" substitutes for cannabis. Initially, these substances are not controlled, but if there is evidence of health damage caused by their use, they are considered as new psychoactive substances (NPS) by the EUDA and are subject to monitoring in the EU. This control is usually also maintained after the audit. Cannabinoids constitute the largest group of NPS monitored by the EUDA. This monitoring is carried out through EU's Early Warning System (EWS)[83].

According to the data available as of 25 March 2025, the EUDA monitors a total of 1008 different substances, of which 281 are synthetic cannabinoids. Of these 281 synthetic cannabinoids, 20 are already controlled substances.

Figure 9.2. Number of substances monitored by the EUDA



Source: Authors' own based on EUDA data. Data query 25-03-2025

81 https://www.emcdda.europa.eu/system/files/publications/2753/Synthetic cannabinoids_2017_ES.pdf
82 https://www.emcdda.europa.eu/system/files/publications/14035/Synthetic-cannabinoids-in-Europe-EMCDDA-technical-report.pdf
83 EWS. Early Warning System. http://www.emcdda.europa.eu/publications/topic-overviews/eu-early-warning-system

Synthetic cannabinoids are usually packaged in "herbal smoking blends", which are sold under common names such as Spice. They have also been distributed in products in the form of powders, tablets and cannabis resinlike products. In recent years, new dosage forms containing cannabinoids have appeared on the drug market, such as e-liquids, as well as paper impregnated with synthetic cannabinoids, and more recently, edible products such as sweets or snacks. These products are readily available on the Internet and, in some countries, in physical shops (“head shops” and “smart shops”).

9.2. Legal status of synthetic cannabinoids

The market for synthetic cannabinoids, and drugs in general, is constantly changing to adapt to the control measures that are being implemented. Like any other substance, synthetic cannabinoids may be controlled at the international level, at the EU level, or only at the national level. There are also substances that are not yet controlled but which, due to the problems they cause, are considered NPS and are under surveillance by the EUDA as a step prior to their control. In response to these control measures, the market drifts towards other substances that are neither monitored by the EUDA nor, of course, controlled.

Newly emerging synthetic cannabinoids are, in principle, considered NPS and as such are kept under surveillance at national and international level through early warning systems. At a later stage, if continued circulation and significant potential risks are identified for any of them, a formal assessment of the situation is made with regard to that or those particular substance(s). Depending on the results of this evaluation, it may propose to the European Commission that they be included in the list of controlled substances.

International control of substances is exercised by the International Narcotics Control Board (INCB), which updates the list of narcotic drugs under international control according to the 1961 Single Convention on Narcotic Drugs (yellow list[84]) and the list of psychotropic substances under control according to the 1971 United Nations Convention on Psychotropic Substances (green list[85]). The latest synthetic cannabinoids under international control are CUMYL- PEGACLONE and MDMB-4en-PINACA, added to Schedule II of the 1971 Convention in 2021, and ADB- BUTINACA, which was added to Schedule II of the 1971 Convention in 2023[86]. The addition of hexahydrocannabinol (HHC) to Schedule II of the Convention is currently under consideration, and the EU position is to support its inclusion[87].

At EU level, the competent authority for auditing is the European Commission, with the approval of the European Parliament and on the basis of EUDA reports. The list of EU-controlled substances, which includes synthetic cannabinoids, is included in the Annex to the Framework Decision 2004/757/JHA of 25 October 2004 laying down minimum provisions on the constituent elements of criminal acts and penalties in the field of illicit drug trafficking. The latest synthetic cannabinoids to be controlled in the EU are the substances MDMB-4en-PINACA and 4F-MDMB- BICA, which were added to the list in 2021[88].

At the national level, Spain has ratified the international treaties for the control of substances, but it also has the capacity to control at the national level. National control competences lie with the Spanish Agency for Medicines and Health Products (AEMPS).

84 https://www.incb.org/incb/en/narcotic-drugs/Yellowlist/yellow-list.html
85 https://www.incb.org/incb/en/psychotropics/green-list.html
86 https://www.incb.org/documents/Psychotropics/PSY_New_Substances_2023_ENG.pdf
87 Council Decision (EU) 2025/493 of 5 March 2025 on the position to be adopted on behalf of the European Union in the sixty-eighth session of the Commission on Narcotic Drugs on the scheduling of substances under the Single Convention on Narcotic Drugs of 1961, as amended by the 1972 Protocol, and the Convention on Psychotropic Substances of 1971..
88 https://eur-lex.europa.eu/legal-content/ES/TXT/PDF/?uri=CELEX:32021L0802

Recently, 12 synthetic cannabinoids have been placed under control, resulting in the inclusion of these substances in Schedule II of Annex 1 of Royal Decree 2829/1977 of 6 October, regulating psychotropic medicinal substances and preparations[89]. This process was initiated, among other factors, due to the wide availability of some of these substances, which are being included in foodstuffs, as well as poisonings related to the use of these products. The DGPNSD and the Spanish Agency for Food Safety and Nutrition (AESAN) have also collaborated in the national control process of these synthetic cannabinoids. It is worth noting that HHC has already been included in the list of controlled drugs in at least 23 European countries.

Table 9.1. Synthetic cannabinoids included in the latest amendment to Royal Decree 2829/1977*

Synthetic cannabinoids included in the latest amendment to Royal Decree 2829/1977
Hexahydrocannabinol (HHC)
Hexahydrocannabinol acetate (HHC-O; HHC-acetate)
Hexahydrocannabiforol (HHCP)
Hexahydrocannabiforol acetate (HHCP-O; HHCP-O acetate)
Delta-8-tetrahydrocannabiforol (delta-8-THCP; JWH 091)
Tetrahydrocannabiforol (delta-9-THCP; THCP)
Tetrahydrocannabiforol acetate (THCP-O; delta-9-THCP-O acetate)
Tetrahydrocannabiforol acetate (THC-O; delta-8-THC-O acetate)
Delta-8-tetrahydrocannabinol-C8 (delta-8-THC-C8)
Delta-9-tetrahydrocannabinol-C8 (delta-9-THC-C8)
Hydrocannabinol (H4-CBD; tetrahydrocannabidiol)
Delta-9-THCA (THCA)

*Ministry of Health Order SND/380/2025
Source: OFFICIAL STATE GAZETTE (BOE): RD 2829/1977

9.3. Synthetic cannabinoid use and related problems in Europe

Since 2008, a large number of synthetic cannabinoids have been detected in hundreds of different products in Europe, although their effects are often very similar. The number of synthetic cannabinoids, their chemical diversity and their speed of emergence make detection, monitoring and response to this group of compounds particularly difficult challenges. When a synthetic cannabinoid is, or is about to be, legally controlled, manufacturers have one or more substitute substances ready for sale.

Information on the level of use of synthetic cannabinoid products is limited; however, knowledge of the situation is improving as more countries include questions on their use in general population surveys.

89 Royal Decree 2829/1977 of 6 October regulating psychotropic medicinal substances and preparations, as well as the control and inspection of their manufacture, distribution, prescription and dispensation.

From the available information, it appears that the prevalence of use in the general population is low in Europe, but may be higher in socially marginalised populations, such as homeless people and the prison population. In general population-based studies, the prevalence of current use of synthetic cannabinoids is generally less than 1%[90]. However, recent evidence suggests that the production and distribution of synthetic cannabinoids in edible products, such as jelly beans, which are readily available to the general population in cannabis shops or via the internet, is becoming more widespread. In the latest edition of the European School Survey on Alcohol and Other Drugs (ESPAD), in 2019, 3.1 % of students (average calculated in 20 out of 35 countries) reported having used synthetic cannabinoids at least once in their lifetime, ranging from 1.1 % in Slovakia to 5.2 % in France (ESPAD Group, 2020)[91].

As examples of problems related to the use of these substances in Europe, already in 2015, more than 200 people were hospitalised for a few days in Poland after smoking a product distributed under the name "Mocarz" (herbal mixture containing synthetic cannabinoids) (EU EWS alert [Alert message on Mocarz PL]). In 2020, a total of 21 4F-MDMB-BICA-related deaths were reported in Hungary over a four-month period ((EU-EWS-RCS-AL-2020-0002). In May 2023, an unusual and unexpected outbreak of non-fatal poisonings affecting more than 20 people was reported in Paris (France), caused by heroin adulterated with synthetic cannabinoids (EU-EWS-RCS-AD-2023-0003). More recently, in June 2024, Hungary reported an outbreak with 30 non-fatal acute intoxications associated with jelly beans containing synthetic cannabinoids. Preliminary results indicate that the product contained delta-9-THC-C8 and delta-8-THC-C8, substances not yet monitored by the EU Rapid Alert System (EU-EWS-RCS-AD-2024-0001). In Spain, according to data reported to the Spanish Observatory on Drugs and Addictions, at least 14 cases of acute intoxications related to the consumption of jelly beans or candies containing synthetic cannabinoids were treated in hospital emergency rooms in 2024. It is worth highlighting that many of the synthetic cannabinoids on the drug market are more potent than THC. This may explain why the harmful effects of synthetic cannabinoids, such as severe and fatal intoxications, may be more frequent than in the case of cannabis. Another important factor may be the large doses to which the user may be exposed, or that the person may consume them inadvertently, especially when it comes to jelly beans or other edible products containing these substances.

Smoking blends are made by spraying synthetic cannabinoids on plant material. This crude process can result in mixtures containing large amounts of very potent cannabinoids, as well as “hot pockets” within individual products where the cannabinoid is highly concentrated. These factors make it difficult for users to control their dosage and they may take a toxic amount without realising it. Smoking blends have caused several mass poisonings in the U.S. Synthetic cannabinoid-impregnated paper, also called Dutch paper, can pose an equally high risk of poisoning as smoking blends since the amount of synthetic cannabinoid may be unevenly distributed. As for jelly beans and other edible products with synthetic cannabinoids, these are products that have the same physical appearance as regular edible products that do not contain them, and therefore, even if the packaging indicates the name or acronym of one of these substances, most people are unaware that they are consuming a synthetic cannabinoid, and suffer intoxications that require emergency medical attention.

The potential for outbreaks of poisoning and other harms caused by these substances underlines the importance of maintaining and strengthening the identification, reporting and monitoring of any serious adverse events associated with their use. In this respect, early warning systems play an essential role in identifying and responding to the harms caused by synthetic cannabinoids.

90 https://www.euda.europa.eu/publications/pods/synthetic-cannabinoids_en
91 https://www.euda.europa.eu/publications/joint-publications/espad-r eport-2019_en

The EUDA has issued a series of risk communications addressing a range of public health concerns related to synthetic cannabinoids and, since 2016, has subjected a number of synthetic cannabinoids to a formal risk assessment. It is important to recognise that the needs of people using synthetic cannabinoids may differ significantly from those of cannabis users.

9.4. Synthetic cannabinoid use and related problems in Spain

Available information on the use of synthetic cannabinoids in our country comes from three sources:

- Surveys of the Spanish Observatory on Drugs and Addictions (OEDA)[92].
- Indicators of the Spanish Observatory on Drugs and Addictions (OEDA)[93].
- Spanish Early Warning System (SEAT) on the use of new psychoactive substances (NPS)[94].

Surveys of the Spanish Observatory on Drugs and Addictions (OEDA)

The information obtained in the surveys is provided directly by the person interviewed. It is important to clarify that the person using plant material with cannabis-like effects may know the name under which the product they are using is marketed (typically Spice), but they do not know exactly what psychoactive substances they are using. For this reason, surveys ask directly about the use of Spice, specifying that Spice drugs, synthetic cannabinoids or synthetic marijuana are also included in this group. So far, surveys have not asked about the consumption of other products containing synthetic cannabinoids, such as jelly beans and other edible products.

Survey on alcohol and other drugs in Spain (EDADES) in the population aged 15 to 64 years old

In 2024, the lifetime prevalence of Spice use stands at 0.4% in the population aged 15-64. With regard to sex, it is observed that use is higher among men than among women.

Table 9.2. Lifetime prevalence of Spice use in the population aged 15-64, by sex (%). Spain, 2024.

	TOTAL	MEN	WOMEN
Lifetime consumption of Spice	0.4	0.6	0.2

SOURCE: OEDA. Survey on Alcohol and Drugs in Spain (EDADES).

According to age, Spice use is highest among those under 35 years of age (0.6%).

92 https://pnsd.sanidad.gob.es/profesionales/sistemasInformacion/sistemaInformacion/encuestas.htm
93 https://pnsd.sanidad.gob.es/profesionales/sistemasInformacion/sistemaInformacion/indicador es.htm
94 https://pnsd.sanidad.gob.es/profesionales/sistemasAler ta/home.htm

Table 9.3. Lifetime prevalence of Spice use in the population aged 15-64, by age (%). Spain, 2024.

Age (years)	15-24	25-34	35-44	45-54	55-64	15-34	35-64
Lifetime consumption of Spice	0.6	0.6	0.5	0.3	0.1	0.6	0.3

SOURCE: OEDA. Survey on Alcohol and Drugs in Spain (EDADES).

With regard to the evolution of Spice use, since 2011, the prevalence of use has remained stable at values below 1%, with a slight decrease since 2020.

Table 9.4. Lifetime prevalence of Spice use in the population aged 15-64 (%). Spain, 2011-2020.

	2011	2013	2015	2017	2020	2022	2024
Lifetime consumption of Spice	0.8	0.5	0.8	0.4	0.6	0.5	0.4

SOURCE: OEDA. Survey on Alcohol and Drugs in Spain (EDADES).

Spice users often have other risky patterns of use, such as polydrug use. 90.0% of those who have used Spice have used 4 or more legal or illegal psychoactive substances in their lifetime compared to 21.9% of the total population aged 15-64. Among Spice users, a higher prevalence of use of all substances (both legal and illegal) is found. It is worth highlighting that 96.1% of Spice users have also used cannabis, a figure that drops to 43.7% among the general population.

Table 9.5. Prevalence of lifetime use of psychoactive substances in people aged 15 to 64 and among lifetime Spice users (%). Spain, 2024.

	General population 15-64 years old	Spice users
Alcohol	92.9	99.5
Tobacco	66.6	95.4
Amphetamines/speed	4.5	58.1
Hallucinogens	5.6	75.4
Prescription/non-prescription hypnosedatives	27.4	55.5
Cannabis	43.7	96.1
Ecstasy	5.1	67.8
Cocaine powder and/or base	13.3	80.4

SOURCE: OEDA Survey on Alcohol and Drugs in Spain (EDADES)

Survey on drug use in Secondary Education in Spain (ESTUDES) in students aged 14 to 18.

In 2023, the lifetime prevalence of Spice use stands at 0.9% among students aged 14-18. In general, this use is more frequent among boys (1.1%) than among girls (0.7%), and the highest prevalence occurs at the age of 18 in the case of both boys (1.9%) and girls (1.2%).

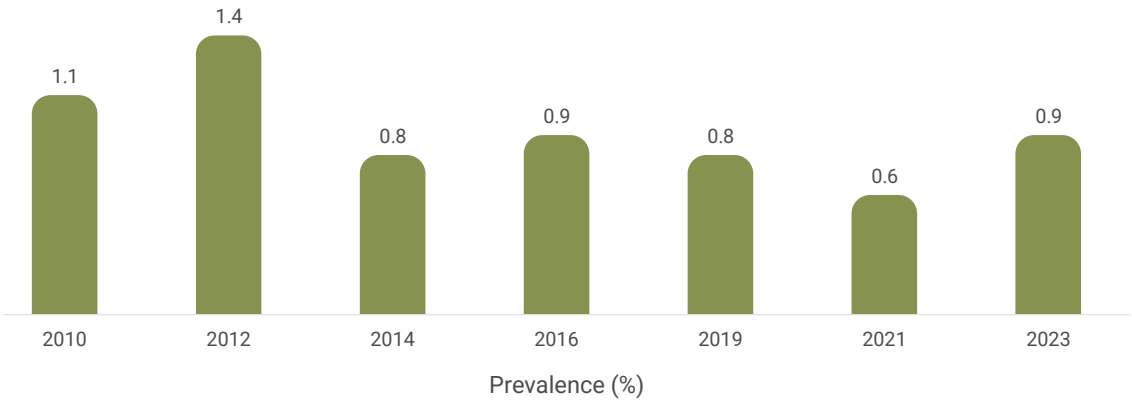
Table 9.6. Lifetime prevalence of Spice use among secondary school students aged 14 - 18, by sex and age (%). Spain, 2023.

	TOTAL			BY AGE AND SEX														
	T	M	W	14 T	14 M	14 W	15 T	15 M	15 W	16 T	16 M	16 W	17 T	17 M	17 W	18 T	18 M	18 W
Lifetime	0.9	1.1	0.7	0.7	0.5	0.9	0.8	1.1	0.5	0.8	1.0	0.6	1.0	1.4	0.5	1.6	1.9	1.2

T: Total; M: Men; W: Women
SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

Regarding the evolution of the prevalence of Spice use among students aged 14-18, since 2014, its use has stabilised at figures below 1%. In 2023 there has been a slight upturn compared to the prevalences recorded in previous editions of the survey, but still very low.

Figure 9.2. Lifetime prevalence of Spice use among secondary school students aged 14-18 (%). Spain, 2010-2023.



SOURCE: OEDA. Survey on Drug Use in Secondary Education in Spain (ESTUDES).

Indicators of the Spanish Observatory on Drugs and Addictions (OEDA)

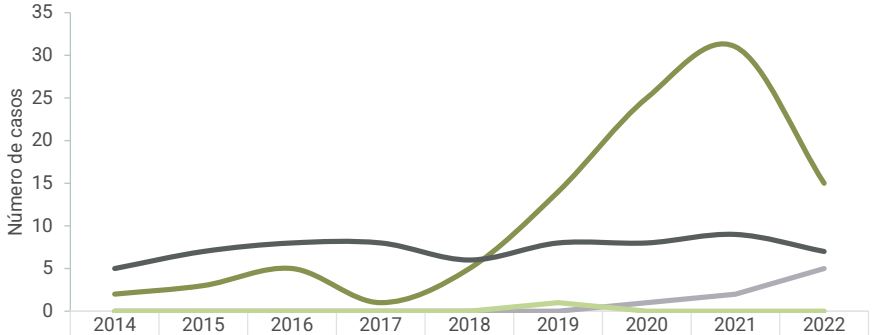
The following indicators report on some of the consequences of Spice use, and indirectly provide information on the status and trends of *spice* use.

Spice started to be specifically recorded in the indicators in 2014. Since it started to be recorded, it has had a low presence, being responsible for 15 admissions to treatment in 2022, appearing in 7 admissions

to treatment as a secondary drug in 2019 and being detected in 5 emergency episodes recorded. Among fatalities, Spice was only recorded in one case in 2019, with other substances found in the deceased, namely opioids, cocaine, hypnosedatives and cannabis. The route of administration reported by those admitted for treatment is the pulmonary or smoked route.

The profile of the person admitted for Spice treatment is that of a 28.2-year-old male, living in the family home with the family of origin, with a primary school education and who is unemployed, having worked before.

Figure 9.3. Number of admissions to treatment for Spice abuse or dependence, cases seen in hospital emergency departments related to spice use, and deaths in which spice is detected. Spain, 2014-2022.



	2014	2015	2016	2017	2018	2019	2020	2021	2022
Treatment (main drug)	2	3	5	1	5	14	25	31	15
Treatment (secondary drug)	5	7	8	8	6	8	8	9	7
Related emergencies	0	0	0	0	0	0	1	2	5
Mortality	0	0	0	0	0	1	0	0	0

Source: OEDA. Indicators of use of psychoactive substances

Spanish Early Warning System (SEAT)

The continuous emergence of NPS in the different substance markets which attempt to circumvent the regulations governing the circulation of the classic controlled substances, has challenged international Conventions and European policy makers and legislators and has prompted the development of surveillance and early warning systems at both national and international levels. The aim of these early warning systems is to share rapidly the information available in the different territories on new substances, or new risks to known substances, and to streamline and coordinate the response to these new threats.

The European Union Early Warning System (EWS) was established in 1997 by the EMCDDA and the European Police Office (Europol) in cooperation with the EU Member States, in the framework of the Joint Action of 16 June 1997 concerning the information exchange, risk assessment and the control of new synthetic drugs. Each EU Member State articulates its national system according to its internal organisation.

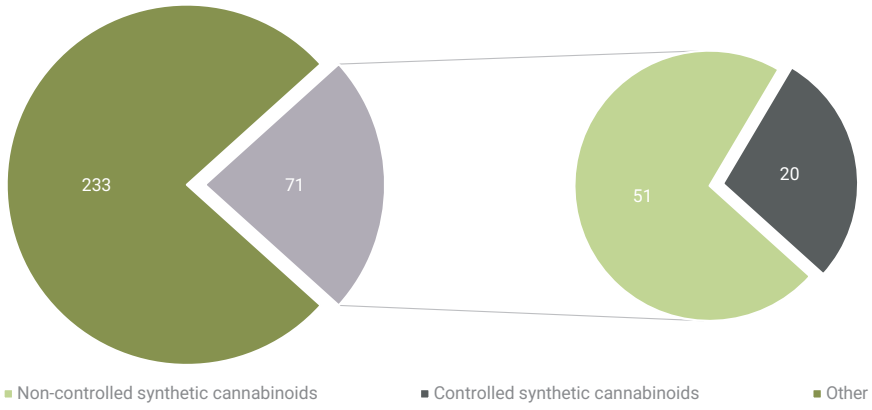
The purpose of the EWS is the notification of NPS and it offers a mechanism for the exchange of information and rapid response to the appearance of “new drugs” or “new psychoactive substances”, meaning synthetic or natural substances not controlled by international law and often produced to mimic the effects of controlled drugs. It is also possible to use the network to alert on major drug-related events, e.g. deaths or poisonings associated with the adulteration or contamination of drugs.

The Spanish Early Warning System (SEAT) is the rapid information exchange system on the use of NPS in our country. Through SEAT, the Autonomous Communities communicate information on NPS to the central point, the OEDA, which in turn circulates all information of interest on NPS at the national level. Additionally, SEAT is part of the EWS and is therefore in permanent contact with the EUDA.

It is important to clarify that notification to early warning systems normally involves the identification by analytical techniques of specific substances contained in a sample of a product. Therefore, synthetic cannabinoids are reported directly, and not the material containing them, which is usually an impregnated plant material (Spice) or to a lesser extent, impregnated paper or certain oils or fluids for vaping, smoking or otherwise using. As a new development in the presentation of these substances, the detection of synthetic cannabinoids in edible products, mainly in jelly beans, has been reported with increasing frequency in recent years.

In Europe, each EU country notifies the EWS of the movement of NPS detected in its territory, including synthetic cannabinoids. According to EUDA data, as of 25 March 2025, Spain has reported the detection of a total of 304 different NPS, including 71 synthetic cannabinoids. Of these 71 synthetic cannabinoids, 20 are already controlled and the rest are considered NPS (Figure 9.4).

Figure 9.4. Number of synthetic cannabinoids and other NPS notified by Spain to the EUDA



Source: Authors' own based on EDND data. Query date 25-03-2025.

To this end, the EUDA, through the EWS, has two main NPS reporting systems in place:

- **Annual Situation Report (ASR)**
  It is a system that provides timely country-specific information to the EWS once a year. This is a document that each country completes with aggregated information on all NPS reported throughout the year in its territory. This document provides information, for each substance, on the format or formats in which it is submitted, the number of seizures or samples collected in that year, the total amount of substance, and the entity reporting it.
- **European Database on New Drugs (EDND).**
  It is a system for the continuous reporting of NPS on a case-by-case basis. It is a digital platform that allows detailed information to be provided at any time on a specific event involving the identification of one or more NPS in any EU country. While the platform is open to the reporting of any NSP-related event, it is requested to prioritise the reporting of particularly relevant events, taking into account their potential risk, for example:

- NPS detected for the first time in the country, or in Europe.
- NPS subjected to intensive monitoring by the EUDA.
- Serious adverse events related to NPS (deaths, acute poisonings).
- NPS-related outbreaks.
- Information on NPS obtained from biological samples.
- NPS in adulteration or counterfeiting of other substances.
- New routes of administration of NPS or known substances.

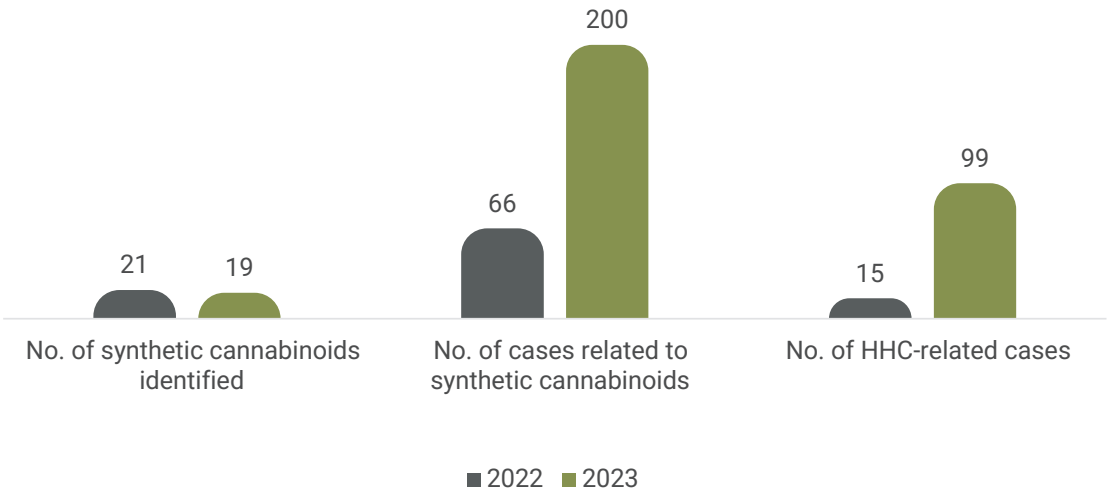
The EDND platform allows very detailed information to be included in the notification, such as the date and type of event, the entities involved in the sample collection and analysis, the physical description of the sample and the chemical characterisation of the substance(s) detected, including the analytical techniques used and reports of analytical results.

Data on synthetic cannabinoids reported to the EMCDDA by Spain in recent years are presented below.

Synthetic cannabinoids reported through the Annual Situation Report in 2022 and 2023

In 2022, Spain reported 66 cases related to 21 different synthetic cannabinoids to the EUDA through the Annual Situation Report. The most frequently reported synthetic cannabinoids in 2022 were ADB-BUTINACA, with 17 cases, and HHC, with 15 cases. In 2023, it reported 200 cases related to 19 different synthetic cannabinoids, of which the most reported was HHC, with a total of 99 cases.

Figure 9.5. Notification of synthetic cannabinoids from Spain to the EUDA through the Annual Situation Report, 2022 and 2023.



Source: OEDA. Spanish Early Warning System Data

Comparing both years, there is a similar number of different synthetic cannabinoids but a large increase in the number of notifications in 2023 compared to 2022. It should be noted that overall the volume of reports of all NPS (not only synthetic cannabinoids) in 2023 was 38% higher than the volume of reports in 2022: a total of 9087 cases on 149 different substances were reported in 2023, compared to 6551 cases on 135 substances in 2022.

The following table presents the synthetic cannabinoids reported by Spain to the EUDA through the Annual Situation Reports for 2022 and 2023, as well as the number of detections of each of them.

Table 9.7. Synthetic cannabinoids reported by Spain to the EUDA via the Annual Situation Report in 2022 and 2023.

2022		2023	
	No. of cases		No. of cases
4F-ABINACA (4F-ABUTINACA)	1	4F-ABINACA (4F-ABUTINACA)	2
4F-MDMB-BICA (4F-MDMB-BUTICA)	1	4F-MDMB-BICA (4F-MDMB-BUTICA)	2
4F-MDMB-BINACA (4F-MDMB-BUTINACA)	1	5F-MDMB-P7AICA	1
5F-CUMYL-PEGACLONE	6	5F-MDMB-PICA	1
5F-EMB-PICA	2	5F-MDMB-PINACA (5F-ADB)	1
5F-MDMB-PICA	1	AB-FUBINACA	1
5F-MDMB-PINACA (5F-ADB)	1	ADB-B-5BR-INACA	2
ADB-BUTINACA	17	ADB-BUTINACA	28
ADB-FUBIACA	4	ADB-FUBIACA	1
ADB-PINACA	2	ADB-FUBINACA	1
AMB-FUBINACA	1	A-FUBIACA	3
CH-FUBIACA	1	HEXAHYDROCANNABINOL (HHC)	99
CH-PIACA	2	HEXAHYDROCANNABIPHOROL (HHC-P)	1
CUMIL-CN-BINACA	2	JWH-081	1
CUMYL-CBMICA	2	JWH-210	4
CUMYL-CH-MEGACLONE	1	MDMB-4EN-PINACA	37
EDMB-PINACA	1	MDMB-BINACA	6
EG-018	1	MDMB-CHMICA	1
HEXAHYDROCANNABINOL (HHC)	15	MDMB-INACA	8
JWH-210	1		
MDMB-4EN-PINACA	3		
Total, 21 synthetic cannabinoids	**66 Cases**	**Total, 19 synthetic cannabinoids**	**200 Cases**

SOURCE: OEDA. Spanish Early Warning System Data

Synthetic cannabinoids reported via EDND

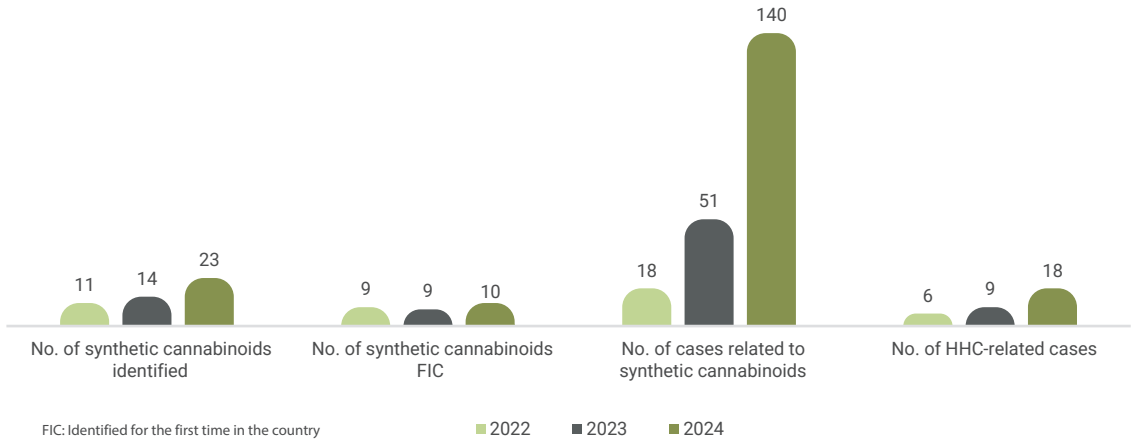
The figure below presents reporting data for Spain via EDND in the years 2022 to 2024.

In 2022, Spain reported 18 cases of 11 different synthetic cannabinoids in the EDND, of which 9 were substances identified for the first time in Spain. HHC was the most frequently reported synthetic cannabinoid reported in EDND in 2022, with 6 reports. The others were reported only once or twice.

In 2023, Spain reported 51 cases related to 14 different synthetic cannabinoids in the EDND, of which 9 were identified for the first time in Spain. The most reported synthetic cannabinoids were MDMB-BINACA with 10 reports, HHC with 9 reports, and ADB-BUTINACA reported 8 times.

In 2024, Spain reported 140 cases related to 23 different synthetic cannabinoids in the EDND, of which 10 were identified for the first time in Spain. The most reported synthetic cannabinoids were ADB-BINACA, with 21 reports, and HHC reported on 18 occasions.

Figure 9.6. Reporting of synthetic cannabinoids in the EDND by Spain, 2022-2024.



Source: OEDA. Spanish Early Warning System Data

This 3-year series shows a clear increase in both the number of synthetic cannabinoids detected and the total number of synthetic cannabinoid reports. To correctly interpret this increase in the reporting of synthetic cannabinoids, one has to consider that overall reporting has increased in this time period motivated, among other things, by the addition of new reporters. Even so, the reporting of synthetic cannabinoids has increased more than the overall reporting of all NPS. This reflects the expansion of synthetic cannabinoids in the Spanish drug market between 2022 and 2024. On the other hand, with regard to HHC, the proportion of reports of this particular synthetic cannabinoid in relation to synthetic cannabinoids overall has been decreasing over these three years, which may be related to the control measures that have been implemented in different EU states over this period. As of 25 March 2025, HHC is already controlled at national level in 23 countries in Europe, according to EUDA data.

Table 9.8. Reporting of synthetic cannabinoids in relation to the reporting of all new psychoactive substances (NPS) in Spain (%) 2022-2024.

	2022	2023	2024
N° of synthetic cannabinoids detected /Total N° of NPS detected	13.75	15.22	18.70
Synthetic cannabinoid cases/all NPS cases	3.29	8.76	11.75
HHC cases/synthetic cannabinoid cases	33.33	17.65	12.86

Source: OEDA. Spanish Early Warning System Data

The list of synthetic cannabinoids reported by Spain via EDND in the years 2022 to 2024, as well as the number of reports for each of them, is presented below.

Table 9.9. Synthetic cannabinoids reported by Spain via EDND in the years 2022 to 2024.

2022		2023		2024	
Name	Nº of cases	Name	Nº of cases	Name	Nº of cases
5F-EMB-PICA*	1	4F-ABINACA (A-4F-BINACA)*	1	4F-MDMB-BICA	1
ADB-B-5BR-INACA*	1	4F-MDMB-BICA*	4	5-CHLORO-APINACA (5C-APINACA, 5C-AKB48) *	1
ADB-FUBIACA*	2	5F-MDMB-P7AICA (7'N-5F-ADB) *	1	ADB-5BR-INACA*	1
AMB-FUBINACA	1	5F-MDMB-PICA*	1	ADB-B-5BR-INACA	17
CH-FUBIACA**	1	5F-MDMB-PINACA (5F-ADB)	1	ADB-BUTINACA (ADB-BINACA)	21
CH-PIACA**	2	ADB-B-5BR-INACA	1	ADB-D-5BR-INACA*	1
CUMYL-CBMICA	1	ADB-BUTINACA (ADB-BINACA)	8	ADB-FUBIACA	6
EDMB-PINACA*	1	A-FUBIACA*	6	ADB-P-5BR-INACA*	2
EMB-FUBINACA*	1	HEXAHYDROCANNABINOL (HHC)	9	A-FUBIACA	12
HEXAHYDRO-CANNABINOL (HHC)*	6	HEXAHYDROCANNABINOL ACETATE (HHC ACETATE) *	1	CH-FUBBMPDORA*	3
JWH-210*	1	HEXAHYDROCANNABIPHOROL (HHC-P) *	2	CH-FUBIACA	2
		JWH-210	5	CH-PIACA	6
		MDMB-BINACA*	10	CUMYL-CBMICA	1
		TETRAHYDROCANNABIDIOL (H4-CBD)*	1	HEXAHYDROCANNABINOL (HHC)	18
				HEXAHYDROCANNABINOL ACETATE (HHC ACETATE)	2
				JWH-018 INDAZOLE ANALOGUE*	1
				JWH-210	17
				MDA-19 4EN-PENTYL ANALOGUE (BZO-4EN-POXIZID)*	1
				MDMB-4EN-PINACA (MDMB-PENINACA)	2
				MDMB-7BR-INACA*	5
				MDMB-BINACA	13
				MDMB-INACA*	1
				NMDMSB*	6
Total: 11 synthetic cannabinoids	Total: 18 cases	Total: 14 synthetic cannabinoids	Total: 51 cases	Total: 23 synthetic cannabinoids	Total: 140 cases

*NPS detected for the first time in Spain
**NPS detected for the first time in Europe
Source: OEDA. Spanish Early Warning System Data

Acute intoxications reported to SEAT related to the use of synthetic cannabinoids:

Not only is the detection of substances in analysed samples reported through SEAT, but also other situations indicating potential risk to the population, such as the occurrence of serious adverse events related to the use of NPS. Recently, a number of clinical partners from the emergency departments of large hospitals have joined the SEAT network and are starting to report on acute NPS-related poisoning that is treated in hospital emergency departments.

In relation to synthetic cannabinoids, the SEAT records so far show that 14 cases of acute intoxications have been reported between April and December 2024, all of them related to the consumption of gummies or sweets containing cannabis derivatives. This information has been transmitted to the EUDA. Additionally, SEAT has issued 6 alerts in the second half of 2024 to inform the entire national network about this problem.

Communication through early warning systems for NPS detection and NPS-related problems is the basis for preparedness and rapid response to potential public health risks posed by NPS.

Table 9.10. Intoxication related to the consumption of edible cannabis products. Spain 2024.

DATE OF REPORT	AUTONOMOUS COMMUNITY	Nº OF CASES	PRODUCT CONSUMED	SUBSTANCE SUSOECTED OF BEING REPONSIBLE
29/04/2024	CATALONIA	3	JELLY BEANS	HHC (HEXAHYDROCANNABINOL)
13/06/2024	MADRID	1	JELLY BEANS	HHC (HEXAHYDROCANNABINOL)
21/06/2024	CATALONIA	3	JELLY BEANS	THCP (TETRAHYDROCANNABIPHOROL)
16/08/2024	CATALONIA	2	JELLY BEANS	NO CONSTA
04/11/2024	CATALONIA	1	JELLY BEANS	THCP (TETRAHYDROCANNABIPHOROL)
15/11/2024	CATALONIA	2	CANDIES	NO RECORD
09/12/2024	CATALONIA	1	JELLY BEANS	NO RECORD
10/12/2024	CATALONIA	1	JELLY BEANS	NO RECORD
		TOTAL: 14 CASES		

Source: OEDA. Spanish Early Warning System Data

10

CONTROL MEASURES

GO TO INDEX

10.1. Number of seizures and quantities of cannabis seized

In 2022, there were an estimated one million drug seizures in the European Union, with cannabis products being the most seized, accounting for 71% of the total number of seizures[1].

Specifically, in 2022, EU member states reported 243,000 seizures of cannabis resin (468 tonnes) and 234,000 seizures of cannabis herb (265 tonnes).

Overall, seizures of cannabis products in Europe remained at historically high levels in 2022, indicating the high availability of the drug. However, the total amount of cannabis resin seized in the European Union fell significantly, largely due to a decrease in seizures reported by Spain. It is possible that this reflects an adaptation of supply routes by those involved in trafficking cannabis resin from North Africa to Europe in response to anti-drug trafficking measures taken by the Spanish authorities. In this context, it is also interesting to note that, from 2019 to 2022, the volume of herbal cannabis seized has increased significantly in Spain, decreasing drastically in 2023.

In 2022, Spain accounted for 69% of all resin seized, 47% of all herbal cannabis seized and 81% of the total number of cannabis plants seized in the European Union, underlining the important role Spain plays both as a transit country for cannabis trafficking and as a production area. However, it is important to note that significant cannabis production also takes place elsewhere in the European Union. Recent large seizures highlight Spain's continuing role as a transit country for resin destined for the European market. In 2023, for example, Spanish authorities seized 22 tonnes of cannabis resin hidden in fake tomato packaging suspected to be intended for trafficking in France[95].

The quantities of cannabis seized can be indirect indicators of the availability of the drug on the market, provided that it is borne in mind that their evolution is often affected by various factors such as the increase or decrease in the activity of supply control services and the proportion of the drug going to the external market, as well as the occurrence of large seizures, which can lead to significant year-to-year fluctuations.

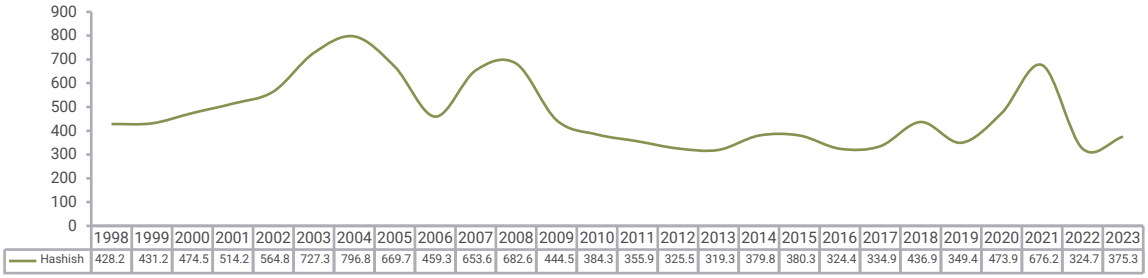
Figure 10.1. Operation "Cabalgata/Califa-Trucks" - Spanish authorities seized 22 tonnes of cannabis resin hidden in fake tomato packaging.

Source: Guardia Civil and National Police.

95 https://www.euda.europa.eu/publications/european-drug-report/2024/cannabis_es

In Spain, the quantities of **hashish** seized between 1998 and 2023 has undergone significant changes, which are summarised below. A significant increase in the quantities of hashish seized began in 1998, reaching an all-time high in 2004 (796.8 tonnes). From 2005 onwards, there was a steady decline until 2013, the year with the lowest volume of seizures in the entire series (319.3 tonnes) despite small upsurges in 2007 and 2008. Since 2014, the volume of seizures has remained between 350-450 tonnes with little variation outside that range, except for the 676.2 tonnes seized in 2021. The most recent data refer to 2023, when 375.3 tonnes of hashish were seized.

Figure 10.2. Quantity of hashish seized (tonnes) in Spain, 1998-2023.

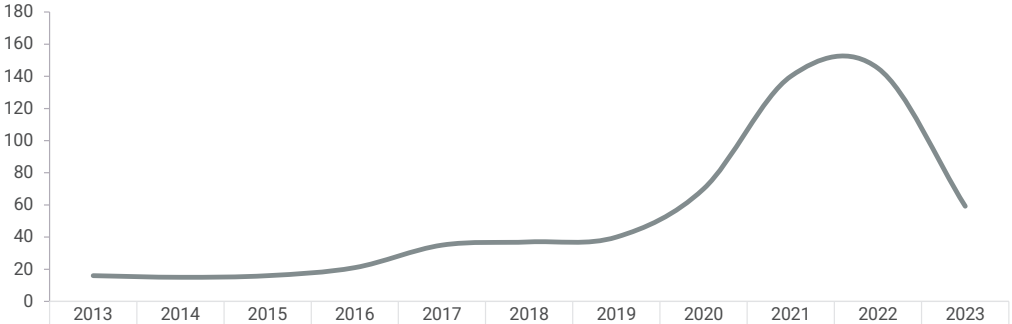


	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Hashish	428.2	431.2	474.5	514.2	564.8	727.3	796.8	669.7	459.3	653.6	682.6	444.5	384.3	355.9	325.5	319.3	379.8	380.3	324.4	334.9	436.9	349.4	473.9	676.2	324.7	375.3

Source: Figure produced by the Spanish Observatory on Drugs and Addictions (OEDA) based on data from the Statistical Yearbooks of the Ministry of the Interior. Statistical System for Analysis and Evaluation of Organised Crime (SENDA).

With regard to **marijuana**, there is an increasing trend in the quantities seized from 2013 to 2022, with especially high seizures in 2021 and 2022 (140 and 145 tonnes, respectively). In 2023 it returned to pre-surge levels, with 59.2 tonnes of marijuana seized. The amount of marijuana seized is approximately 7 times less than the amount of hashish seized.

Figure 10.3. Quantity of marijuana seized (tonnes) in Spain, 2013-2023.



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Marihuana	16	15	16	21	35	37	40	70	140	145	59.2

Source: Figure produced by the Spanish Observatory on Drugs and Addictions (OEDA) based on data from the Statistical Yearbooks of the Ministry of the Interior. Statistical System for Analysis and Evaluation of Organised Crime (SENDA).

10.2. Price and THC content of seized cannabis

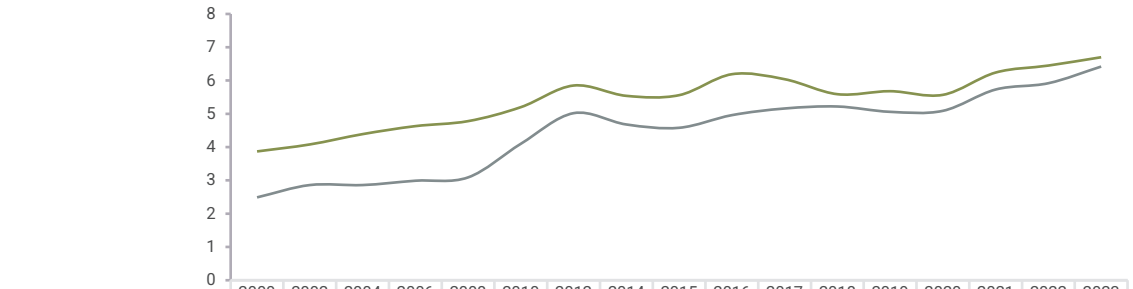
Price

The data presented in this section refer to the national average price for cannabis, as this fluctuates depending on various circumstances such as quality and purity, volume of transaction, population demand or level of supply.

Analysing the evolution of the price of cannabis on the illicit market in the medium term, an upward trend can be observed in the average price per gram of **hashish resin**, which, was 3.87 euros in 2000, and reached 6.70 euros in 2023. This has also been the case for **grass/marijuana** which, in the same period, has risen from 2.49 euros to 6.42 euros..

In any case, the average price of a gram of hashish resin is always higher than the price of grass/ marijuana.

Figure 10.4. Average prices of cannabis (both resin and marijuana) on the illicit market (euros). Spain, 2000- 2023.



	2000	2002	2004	2006	2008	2010	2012	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Hashish resin (gram)	3.87	4.08	4.39	4.63	4.78	5.20	5,85	5.54	5.56	6,19	6.04	5.59	5.68	5.57	6.24	6,45	6.7
Marijuana (gram)	2.49	2.86	2.86	2.99	3.09	4.10	5.02	4.68	4.58	4.96	5.16	5.22	5.06	5.09	5.73	5.92	6.42

Source: Figure produced by the Spanish Observatory on Drugs and Addictions (OEDA) based on data from the Statistical Yearbooks of the Ministry of the Interior. Statistical System for Analysis and Evaluation of Organised Crime (SENDA).

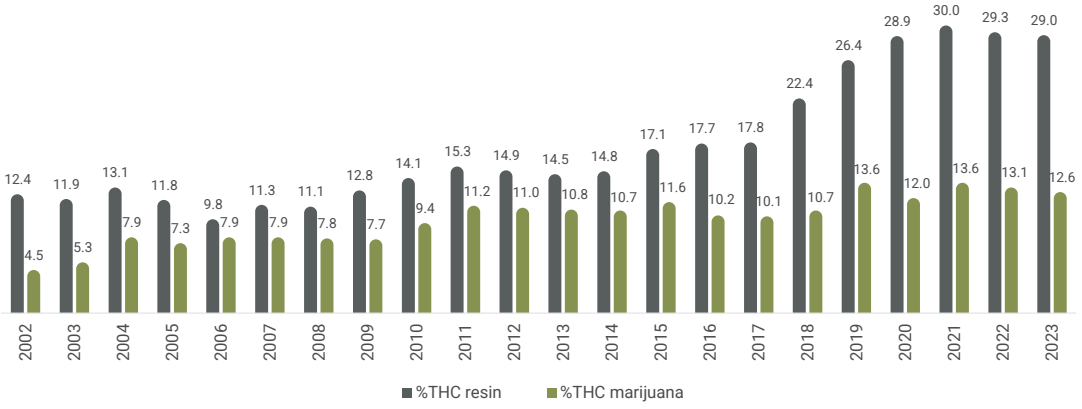
THC concentration

In relation to the average THC (tetrahydrocannabinol) concentration of seized cannabis, over the whole period 2002-2023, it can be observed that it is always higher in resin than in herbal cannabis. In fact, in 2023, the THC concentration of the resin was 29.0% while that of the grass was 12.62% (less than half).

In terms of evolution over time, between 2002 and 2014 the THC concentration of resin remained around 10-15% (with a historic low of 9.8% in 2006). Subsequently, the concentration increases to around 30% THC in the years 2021 to 2023.

In the case of the evolution over time of the THC concentration of grass, it increased from 2002 until 2011, when it can be said to have more or less stabilised. The highest THC concentration in marijuana, 13.6%, was recorded in 2019 and 2021.

Figure 10.5. Percentage of THC (tetrahydrocannabinol) present in cannabis according to the type of presentation tested; THC contained in cannabis resin and THC contained in herbal cannabis or marijuana. Spain, 2002-2023.



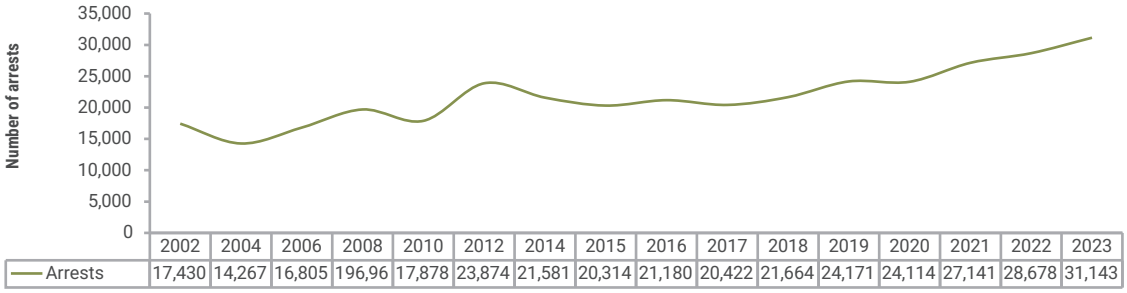
Source: Center for Intelligence against Terrorism and Organized Crime (CITCO)

In 2022, the average THC content of cannabis resin in the EU was 24.8%, more than double that of herbal cannabis at 10.1%. Indexed trends show that the average THC content of resin has doubled over the last ten years and continues to increase, while that of herbal cannabis has remained broadly stable for most of that time.

10.3. Arrests for cannabis trafficking and charges for illicit use and/or possession of cannabis

The data referring to the total number of arrests have been provided by the Center for Intelligence against Terrorism and Organized Crime (CITCO), and come from the State Security Forces and Corps, the Customs and Excise Department and the Police Corps of the Autonomous Communities of Catalonia, the Basque Country and the Region of Navarre.

Figure 10.6. Arrests for drug trafficking (absolute numbers). Spain, 2002-2023.



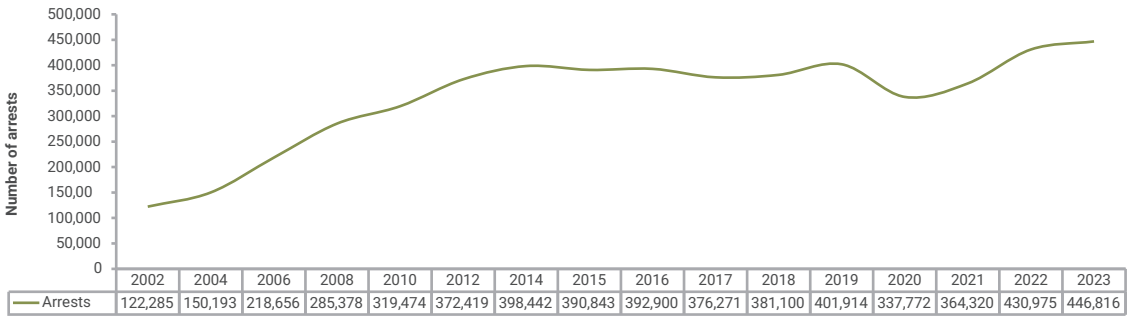
	2002	2004	2006	2008	2010	2012	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Arrests	17,430	14,267	16,805	196,96	17,878	23,874	21,581	20,314	21,180	20,422	21,664	24,171	24,114	27,141	28,678	31,143

Source: Figure produced by the Spanish Observatory on Drugs and Addictions (OEDA) based on data from the Statistical Yearbooks of the Ministry of the Interior. Statistical System of Analysis and Evaluation on Organised Crime (SENDA)

According to these data, **arrests** for drug trafficking show a general upward trend between 2002 and 2023, with the latter year recording the highest number of arrests for this crime: 31.143.

With regard to charges for illicit use or possession of drugs in public spaces, based on Organic Act 4/2015, of 30 March, on the protection of public safety, the data referring to the total number of charges have been provided by the Center for Intelligence against Terrorism and Organized Crime (CITCO), and come from the State Security Forces and Corps, the Customs and Excise Department and the Police Corps of the Autonomous Communities of Catalonia, the Basque Country and the Region of Navarre. According to these data, and except for the marked decrease in reporting related to the Covid-19 pandemic, we can distinguish 3 clear periods in terms of the number of charges between 2002-2023. In a first period, between 2002 and 2014, charges progressively increased to 398,442. They then remained stable at around 400,000 charges per year until 2019, and finally increased again to 446,816 charges recorded in 2023.

Figure 10.7. Charges for possession and use of drugs in public places based on Organic Laws 1/1992 and 4/2015 (absolute numbers). Spain, 2002-2023.



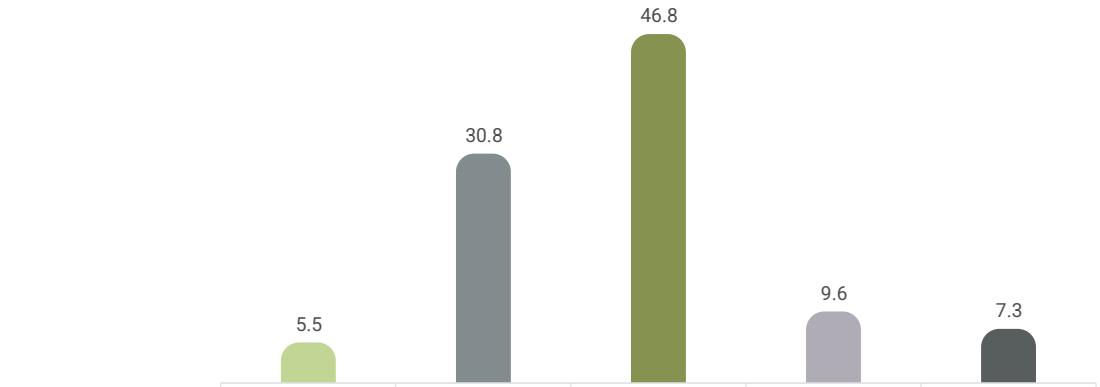
	2002	2004	2006	2008	2010	2012	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Arrests	122,285	150,193	218,656	285,378	319,474	372,419	398,442	390,843	392,900	376,271	381,100	401,914	337,772	364,320	430,975	446,816

Source: Figure produced by the Spanish Observatory on Drugs and Addictions (OEDA) based on data from the Statistical Yearbooks of the Ministry of the Interior. Statistical System of Analysis and Evaluation on Organised Crime (SENDA)

In the distribution of arrests by type of drug, it should be noted that arrestees are counted for each of the substances/families of drugs seized. Therefore, the total number of arrests is not the sum of the arrests for the different substances, as the same arrest may be linked to more than one substance. Furthermore, it should be taken into account that the number of arrests by drug groups only includes data from SENDA (PN, GC and DAVA) and not from the Autonomous Community Police Forces, as these bodies only provide the total number of arrests and not broken down by substance. The same considerations apply to the data on charges by drug type.

Keeping in mind these methodological considerations, it is observed, as in previous years, that in 2023, most arrests and charges were related to cannabis derivatives (46.8% and 78.7%, respectively).

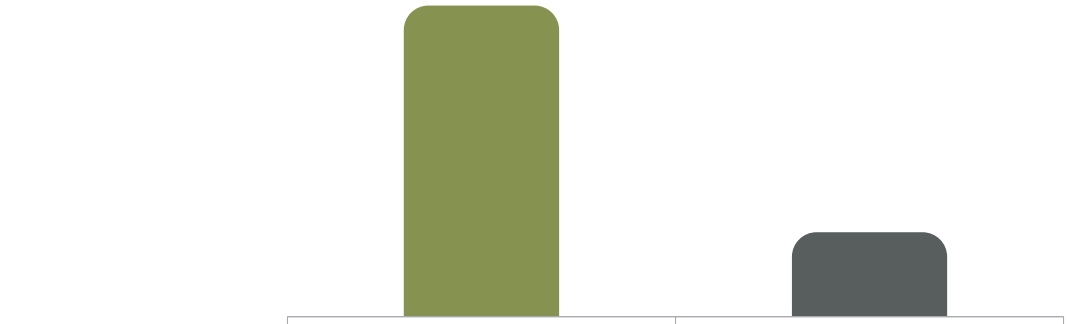
Figure 10.8. Distribution of arrests by type of substance (percentage). Spain, 2023.



	Opioids	Cocaine	Cannabis	Amphetamines and derivatives	Other substances*
Arrests (n= 31,143)	5.5	30.8	46.8	9.6	7.3

* Other substances include: benzodiazepines, tryptamines, cathinones and others
Note: Arrests involving different families of drugs are counted once for each family. Data from the autonomous community police forces are not included. Source: Figure produced by the Spanish Observatory on Drugs and Addictions (OEDA) based on data provided by the Center for Intelligence against Terrorism and Organized Crime (CITCO).

Figure 10.9. Distribution of charges by type of substance (percentage). Spain, 2023.

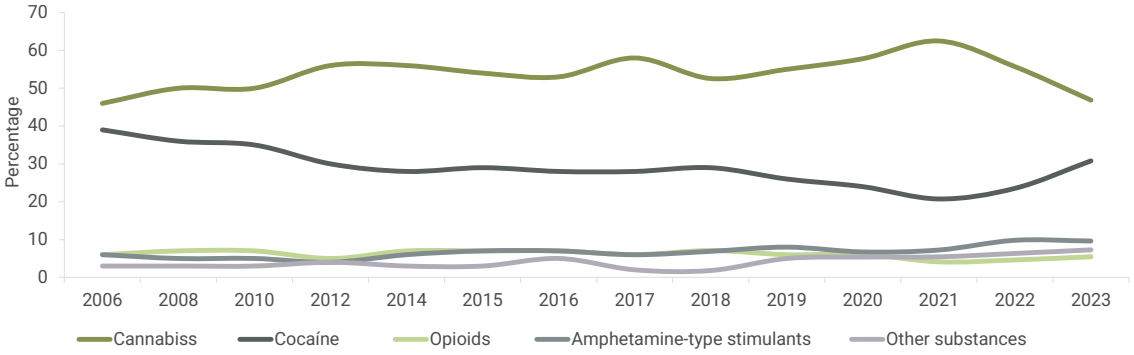


	Cannabis	Other substances*
Charges (n= 446,816)	78.7	21.3

* Other substances include: benzodiazepines, tryptamines, cathinones and others
Note: charges involving substances from different drug families are counted once for each family. Data from the autonomous community police forces are not included.
Source: Figure produced by the Spanish Observatory on Drugs and Addictions (OEDA) based on data provided by the Center for Intelligence against Terrorism and Organized Crime (CITCO).

Looking at the evolution over the years, the percentage of arrests related to the different types of substances shows opposite trends in arrests related to cannabis and those related to cocaine. There is a general upward trend in cannabis-related arrests from 2006 to 2021, peaking in that year at 62.5 per cent, and then falling to 46.8 per cent in 2023. In terms of charges by type of substance, the percentage of cannabis-related charges has remained largely unchanged in the time series up to 2021, and from then onwards a slight decrease is observed.

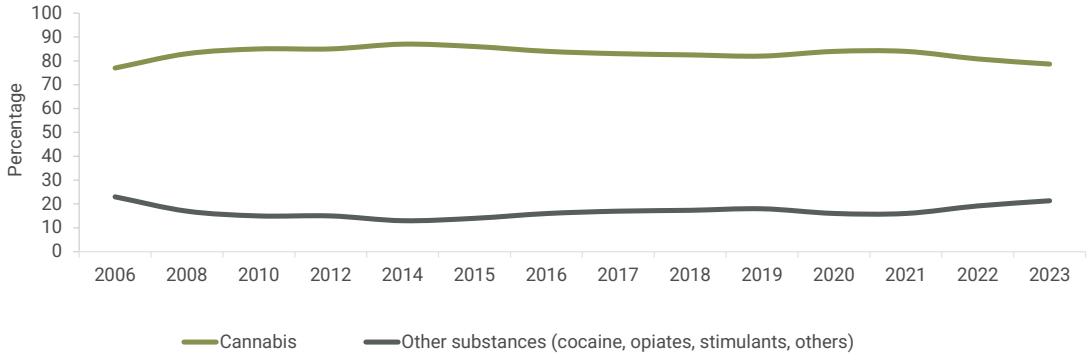
Figure 10.10. Arrests by drug family (absolute numbers and % of total). Spain, 2006-2023.



Cannabis arrests (n)	2006	2008	2010	2012	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	20,094	24,069	22,139	23,874	21,581	20,314	21,180	20,422	21,664	24,171	24,114	27,141	28,678	31,143

Note: Arrests involving different families of drugs are counted once for each family. Data from the autonomous community police forces are not included. Source: Figure produced by the Spanish Observatory on Drugs and Addictions (OEDA) based on data provided by the Center for Intelligence against Terrorism and Organized Crime (CITCO).

Figure 10.11. Charges by drug family (% of total and absolute numbers). Spain, 2006-2023.



CHARGES DUE CANNABIS (N)	2006	2008	2010	2012	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	218,656	285,378	319,474	372.419	398,422	390,843	392,900	376,271	381,100	401,914	337,772	364,320	430,975	446,816

Note: charges involving substances from different drug families are counted once for each family. Data from the autonomous community police forces are not included.
Source: Figure produced by the Spanish Observatory on Drugs and Addictions (OEDA) based on data provided by the Center for Intelligence against Terrorism and Organized Crime (CITCO).

11

ANALYSIS OF THE EVOLUTION OF CANNABIS USE IN SPAIN THROUGH THE ANALYSIS OF WASTEWATER FOR EPIDEMIOLOGICAL PURPOSES

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Authors: members of the ESAR-Net network (www.esarnet.es)[96]

This chapter presents the results of applying wastewater analysis for epidemiological purposes to monitor cannabis use in various locations in a total of 10 Autonomous Communities. The compound tested is 11-Nor-9-carboxy-delta-9-THC (THC-COOH), the main metabolite of THC (delta-9-tetrahydrocannabinol). These results have been obtained within the framework of a research project funded by the Government Delegation for the National Plan on Drugs[97] by the ESAR-Net network[98], in collaboration with the RIAPAd network[99].

11.1. Methodology

In this study, wastewater samples were taken at different Spanish wastewater treatment plants (WWTP) during a full week (generally starting on a Tuesday and ending on a Monday) during the first half of each year between 2021 and 2023 (generally in spring), ensuring that each sample was representative of a full day (24 hour composite sample) at a total of 27-28 WWTPs depending on the year. Additionally, a second similar campaign was carried out at 10-11 WWTPs for one week in the second half of each year (autumn) (Table 1). Care was taken to ensure that there were no special events (e.g. holidays) or high holiday and tourism seasons in the weeks where the sample was taken, in order to try to establish background consumption.

The concentration of THC-COOH in each sample was determined by solid phase extraction and liquid chromatography coupled to mass spectrometry. The concentrations were then converted into mass of metabolite excreted per day and normalised to 1000 inhabitants (here referred to as THC-COOH load), using the wastewater flow received by each WWTP on the sampled day and the population served by the WWTP (standardised daily load).

his standardised daily load was finally transformed into estimated use of pure substance based on knowledge of metabolism of the substance and its excretion pathway(s). In the case of THC, several factors contribute to the uncertainty of the values obtained and they should therefore be considered with caution, and more attention should be paid to temporal and/or geographical trends than to the estimated THC use value per se. Further information on the methodology of wastewater analysis for epidemiological purposes can be found in the references[100,101,102]. The laboratories participating in the analysis carry out an inter-laboratory exercise each year to ensure comparability of results[103].

96 José Benito Quintana, Rosa Montes, Xiana González-Gómez, Andr ea Estévez-Danta, Carlos Pernas, Rosario Rodil (Universidade de Santiago de Compostela, RIAPAd); Félix Hernández, Lubertus Bijlsma, Elisa Gracia-Marín, Claudia Simarro-Gimeno (Universitat Jaume I); Yolanda Picó, Vicente Andreu, Daniele Sadutto, Lucía Herrera-Vera (Centro de Investigación sobre Desertificación, UV-CSIC-GV); Miren López de Alda, Rocío I. Bonansea, P aula Montiel (Instituto de Diagnóstico Ambiental y Estudios del Agua, CSIC) Yolanda Valcárcel, Noelia Domínguez-Morueco, Salomé Mar tínez (Universidad Rey Juan Carlos); Eva Pocurull, Rosa María Marcé, Núria Fontanals (Universitat Rovira i Virgili); Iria González-Mariño (Universidad de Salamanca); Andreu Rico (Universitat de València); Lluís Corominas, Sara Rodríguez-Mozaz (Institut Català de Recerca de l'Aigua); Manuel Miró, Calos Pagan (Universitat de les Illes Balears); Ailette Priet o, Nestor Etxebarria, Olatz Zuloaga, Gorka Orive (Universidad del País Vasco/Euskal Herriko Unibersitatea); Pablo Antonio Lara-Martín, Rubén Rios-Quintero (Universidad de Cádiz); Sergio Santana-Viera (Universidad de Las Palmas de Gran Canaria); Manuel Isorna (Universidade de Vigo, RIAPAd); Unax Lertxundi (Osakidetza-Servicio Vasco de Salud).

97 This work has been possible thanks to the collaboration of all the entities and town councils responsible for the management of wastewater treatment plants, which is essential for carrying out these studies, and to the project "Exploration of wastewater as a complementary, rapid and objective indicator of the consumption of substances of abuse" funded by the 2020 call for research projects of the Government Delegation for the National Plan on Drugs (File No. 2020I009)

98 The ESAR-Net network (www.esarnet.es) has core funding for meetings and conferences provided by the State(AEI/10.13039/501100011033), Ref. RED2022-134363-T.

99 The team of the University of Santiago de Compostela would also like to thank the funding of the RIAPAd network (https://riapad.es/, ref. RD21/0009/0012) through the call for applications of the RICORS networks of the Carlos III Health Institute - NexGenerationEU - PRTR.

100 Bijlsma et al. Análisis de aguas residuales con fines epidemiológicos: aplicaciones a la estimación del consumo de sustancias de abuso y en salud pública en general. Red española ESAR-Net. Revista Española de Salud Pública., 2018, 92: 20 de agost o e201808053.

101 Pocurull et al. El análisis de aguas residuales con fines epidemiológicos: pr esente y futuro en España. Revista Española de Drogodependencias, 2020, 45, 91-103

102 https://www.emcdda.europa.eu/publications/html/pods/waste-water-analysis_en

103 van Nuijs et al. Multi-year interlaboratory exercises for the analysis of illicit drugs and metabolites in wastewater: de velopment of a quality control system. Trends in Analytical Chemistry, 2018, 103, 34-43

Table 11.1. Coded list of WWTPs analysed and number of weeks sampled in each case between 2021 and 2023.

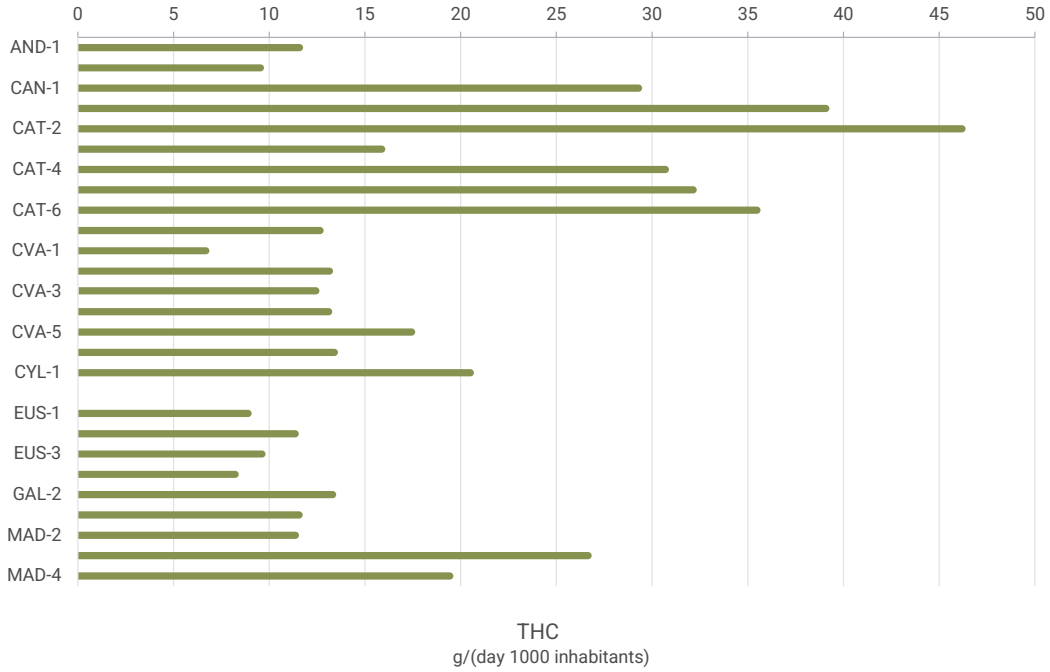
CODE	WEEKS SAMPLED	SIZE	CODE	WEEKS SAMPLED	SIZE
AND-1	3	G	CVA-5	3	G
BAL-1	3	G	CVA-6	3	P
CAN-1	3	G	CYL-1	3	M
CAT-1	6	MG	CYL-2	3	MP
CAT-2 A	4	MG	EUS-1	6	G
CAT-3	3	MP	EUS-2	6	MG
CAT-4	6	M	EUS-3	3	MP
CAT-5	3	M	GAL-1	3	MP
CAT-6	3	M	GAL-2	6	M
CLM-1	3	M	MAD-1	3	MG
CVA-1	3	P	MAD-2	6	MG
CVA-2	3	M	MAD-3	3	G
CVA-3	6	M	MAD-4	6	G
CVA-4 B	6	MG			

Code: corresponds to the initials of the Autonomous Community followed by a randomly selected number. AND: Andalusia, BAL: Balearic Islands, CAN: Canary Islands, CAT: Catalonia, CLM: Castilla-La Mancha, CVA: Valencia, CYL: Castile and Leon, EUS: Basque Country, GAL: Galicia, MAD: Community of Madrid. NOTES: at CAT-2, this WWTP started sampling in 2022. CVA-4 actually corresponds to 2 WWTPs which, as they are connected, must be assessed together. Population size served by the WWTP: MP < 10,000 inhabitants; 10,000 < P < 50,000 inhabitants; 50,000 < M < 200,000 inhabitants; 200,000 < G < 500,000 inhabitants; MG > 500,000 inhabitants, Source: Spanish Network of Wastewater Analysis for Epidemiological (ESAR-Net)

11.2. Results

The use of cannabis as the estimated consumption of its main psychoactive constituent, THC, is given below. As mentioned in the methodological section, these values should be considered with caution and may be up to 5 times lower due to the possible conversion of the hydroxy-THC metabolite to carboxy-THC in wastewater. Even with this uncertainty, it is clear that the estimated THC use is high, overall median: 13 g/(day 1000 inhab.), its metabolite being present in all locations except one (CYL-2, which corresponds to a town of less than 10,000 inhabitants and where it had been detected in the rest of the campaigns).

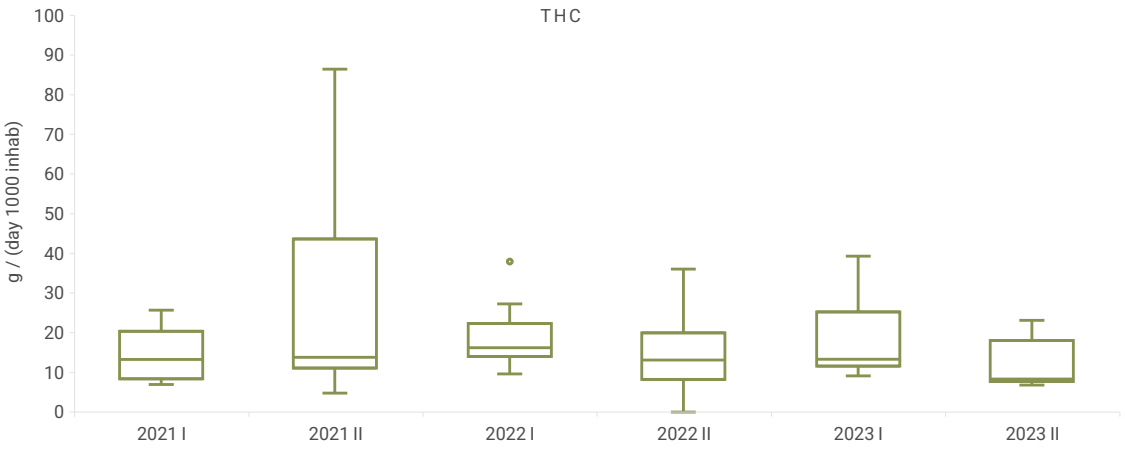
Figure 11.1. Representation of the median value of estimated cannabis use, as THC, in the WWTPs studied in the first campaign (spring) in 2023.



Source: Spanish Network of Wastewater Analysis for Epidemiological (ESAR-Net)

Looking at the trend in the period 2021-2023 (Figure 11. 2), it is observed that the medians are more variable than in the case of other substances, partly due to their greater analytical uncertainty, with overall median values generally stable, 13-16 g/(1000 inhabitants per day), although the last campaign points to a certain decrease, overall median 8.3 g/(1000 inhabitants per day), but which must be confirmed in subsequent campaigns.

Figure 11.2. Plot of quartiles and extreme values of the median values of cannabis use, as THC, estimated over 2021-2023 (I: spring campaign; II: autumn campaign) in the WWTPs that were analysed in the 6 campaigns.



Source: Spanish Network of Wastewater Analysis for Epidemiological (ESAR-Net)

12

CONCLUSIONS

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Cannabis is by far the most widely used illegal drug among the Spanish population at all ages. Its main use in Spain is as marijuana or hashish, and although in recent years a wide variety of cannabis products have appeared in Europe, known as synthetic cannabinoids, their use in Spain is low.
Cannabis use occurs mainly among men and young people. Showing decreasing prevalence of use among students aged 14-18, with use being equal for both sexes and a slightly increasing perception of the risk of substance use.

Although use tends to be experimental, usually concentrated in a short period of time (late adolescence or early adulthood), some users exhibit a pattern of problematic use and may need to enter treatment for substance abuse or dependence.

This has led to an increased number of admissions to treatment for this substance in recent years, after a few years of a slight decline, it being the second most common substance for treatment admissions in the general population, after cocaine, and responsible for more than 90% of all admissions in children under 18 years of age.

The high prevalence of cannabis use in both the general population and the student population is reflected in an increase in charges for illicit cannabis use or possession and an increase in arrests for drug trafficking, which reached an all-time high in 2023.

In addition, an increase in the concentration of THC in seized products has been observed, a fact that could underlie the increase of cannabis in substance use emergencies and hospital admissions for cannabis use.

In response to the control measures exercised over cannabis, a large number of synthetic cannabinoids have emerged in a multitude of different products. These substances have similar effects to THC, as they bind to cannabinoid receptors in the body. The number of synthetic cannabinoids, their chemical diversity and their speed of emergence make detection, monitoring and response to this group of compounds particularly difficult challenges.

In conclusion, in order to reduce the prevalence of cannabis use and the harm caused by this substance, a cross-sectoral approach is needed, and building such an approach requires analysing and using available data and knowledge. This technical report has been prepared to contribute to this process. Thus, it aspires to be a useful document for all the agents involved, with the aim of being updated periodically so that the most up-to-date information is available at all times.

13

GLOSSARY

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The definitions used throughout the document are as follows:

- **Cannabis:** Generic term for the various psychoactive preparations of the cannabis plant. In this report, the term cannabis will be used in general rather than other terms such as marijuana, hashish or hashish oil, when none of these are specifically referred to. "Cannabis" means the flowering or fruiting tops of the cannabis plant (excluding seeds and leaves not attached to the tops) from which the resin has not been extracted, by whatever name called. "Cannabis plant" means any plant of the genus Cannabis. "Cannabis resin" means the separated raw or purified resin obtained from the cannabis plant.
- **Natural cannabinoids:** substances found in the cannabis plant. The main ones are tetrahydrocannabinol (THC), which is the psychoactive compound, and cannabidiol (CBD), which is the non-psychoactive term.
- **Synthetic cannabinoids**: group of new psychoactive substances that mimic the effects of (–)-trans-Δ9-tetrahydrocannabinol (THC), which is the main substance responsible for the most important psychoactive effects of cannabis and they are synthesised artificially. Like THC, synthetic cannabinoids bind to the body's cannabinoid receptors. For this reason, these substances have been used to create a wide variety of "legal high" products that are sold as legal substitutes for cannabis.
- **High-risk use of psychoactive substances**: use that is causing actual harms (negative consequences) to the person whether dependence or other health, psychological or social problems, or is placing the person at a high probability/risk of suffering such harms. In addition, it may have negative consequences for third parties.
- **Average age of onset in cannabis use**: average in years of the age of onset of use.
- **Narcotic**: Any of the substances in Schedules I, II, III and IV of the 1961 Convention, natural or synthetic, included in the Yellow List, contained in the current list of narcotic drugs under international control, prepared by the International Narcotics Control Board (INCB).
- **Incidence**: percentage of the population who, with no previous use of a given substance, began using it in the past 12 months. It is calculated by considering together the population that has never used and the population that has started using in this period of time.
- **New Psychoactive Substances (NPS)**: substances in pure form or in preparations which are not covered by the 1961 United Nations Single Convention on Narcotic Drugs or the 1971 United Nations Convention on Psychotropic Substances, but which may pose health or social risks similar to those posed by substances covered by said Conventions. "Preparation" means a mixture containing one or more new psychoactive substances. The definition of NPS used by the EMCDDA included in the European Model Questionnaire is as follows: NPS are substances that imitate the effects of illicit drugs (cannabis, cocaine, ecstasy, etc.). These new substances (keta, spice, synthetic cannabinoids, synthetic marijuana, meow meow, flakka, superman, cathinones, mephedrone, fentanyl derivatives, methoxetamine, NBOMe, ayahuasca, kratom...) can come in the form of herbs, pills, powders, liquids, incense, etc.
- **Student population**: refers to the population of students aged 14 to 18 years old in secondary education in public or private centres, which constitutes the sample framework of the ESTUDES survey.
- **Working population**: refers to the population aged 16 to 64 years old who are reported as currently employed and working; employed, but temporarily absent; or unemployed, having previously worked. It constitutes the sampling frame of the LABORAL survey.

- **Prison population**: refers to the population over 18 years of age in prisons. According to their penal classification in the sample framework, they include pre-trial detainees, second-degree convicts, convicts awaiting further sentencing and unclassified convicts. It constitutes the sample frame of the survey in PENITENCIARIAS (PRISONS).
- **Spice:** a generic name often used to refer to products based on herbal smoking blends containing synthetic cannabinoids. Originally, spice is a trade name under which such products were marketed. There are other terms used to refer to these products, such as K2 or spicky.

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ABBREVIATIONS

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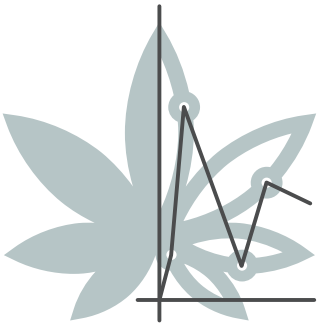
CAST	Cannabis Abuse Screening Test
CBD	Cannabidiol
CBN	Cannabinol
CCAA	Autonomous Communities
CITCO	Center for Intelligence against Terrorism and Organized Crime
CND	United Nations Commis-sion on Narcotic Drugs
DGPNSD	Government Delegation for the National Plan on Drugs
ECDD	WHO Expert Committee on Drug Dependence
EDADES	Survey on Alcohol and Drugs in the General Population in Spain
EUDA	European Union Drugs Agency
ENA	National Strategy on Addictions
ESAR-Net	Spanish Network of Wastewater Analysis for Epidemiological Purposes
ESPAD	The European School Survey Project on Alcohol and Other Drugs
ESDIP	Survey on Health and Drug Use among Prisoners
ESTUDES	Survey on Drug Use in Secondary Education in Spain
EWS	European Union Early Warning System
IARC	International Agency for Research on Cancer
INCB	International Narcotics Control Board
OEDA	Spanish Observatory on Drugs and Addictions
WHO	World Health Organisation
UNODC	United Nations Office on Drugs and Crime
SEAT	Spanish Early Warning System
SEIDA	State Information System on Drugs and Addictions
THC	Tetrahydrocannabinol.



Technical Report on Cannabis 2025

CONSUMPTION AND CONSEQUENCES

Spanish Observatory on Drugs and Addictions
GOVERNMENT DELEGATION FOR THE NATIONAL PLAN ON DRUGS. MINISTRY OF HEALTH

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