DRUG, ADDICTIONS and DRUG TRAFFICKING: **FROM ANALYSIS TO ACTIONS**

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Doctorate in Neuroscience and Behavioural Disorders

Topics

- An overview on illicit drug trafficking
- Epidemiologic observations about drug abuse
- New drugs and mechanisms of addiction
- Actions: knowledge and prevention

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THE ROLE OF THE ORGANIZED CRIME

International drug trafficking is one of the main cohesion factors in the criminal world at a global level and Italy still plays a fundamental role in it, due to its geographic position and features as well as to the presence of experienced and specialized criminal organizations active in our country: Cosa Nostra, 'Ndrangheta, Camorra and Apulian organized crime.

In Italy, foreign crime groups have spread:

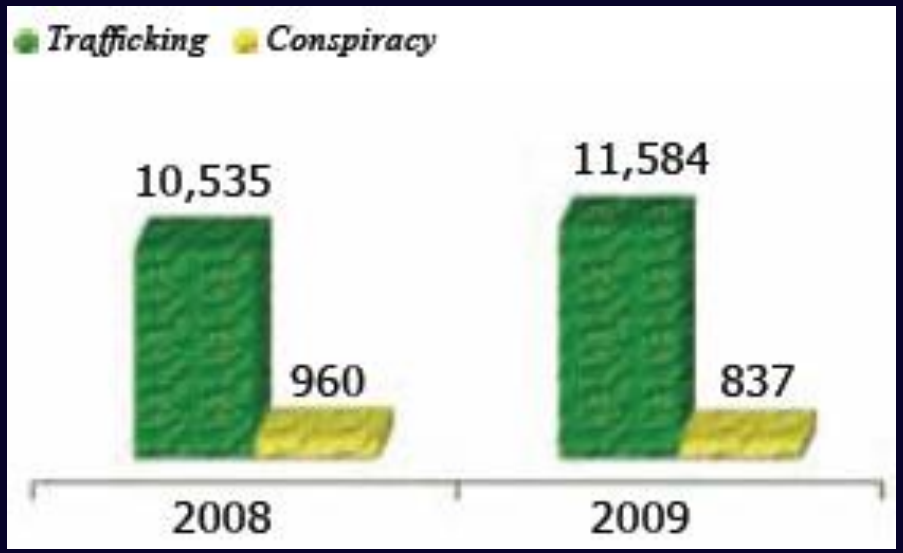
- Eastern European Countries (Albanians, Serbians, Kosovans, and recently, Romanians and Bulgarians)

- West African nationals (Nigerians, Senegaleses, Gambians and Ghanaians)

- South American criminal networks (closely connected with the Calabrian ‘Ndrangheta clans, because their structure is much “*more reliable*”)

- Chinese criminal rings

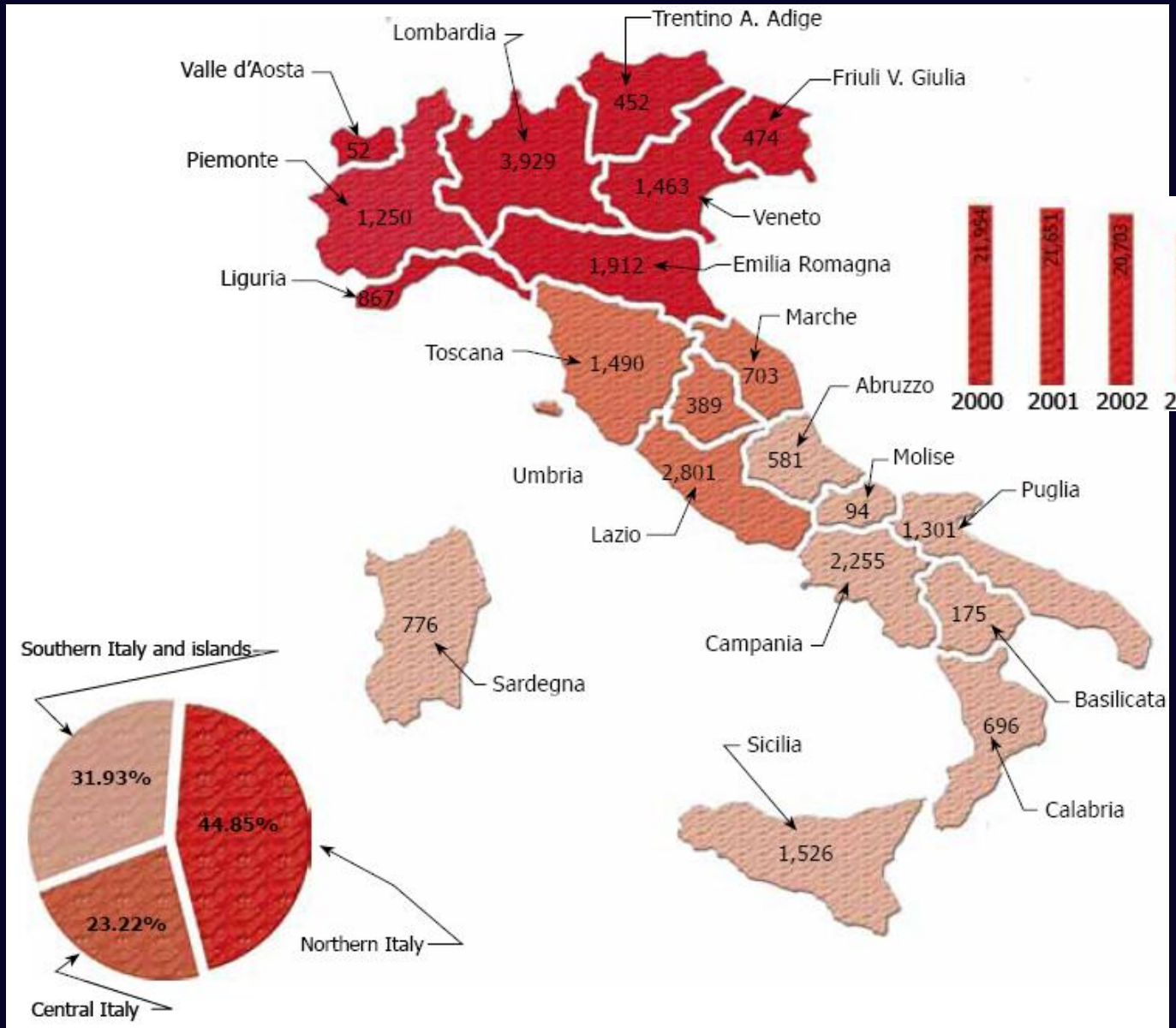
Foreign nationals reported for drug trafficking and conspiracy to trafficking

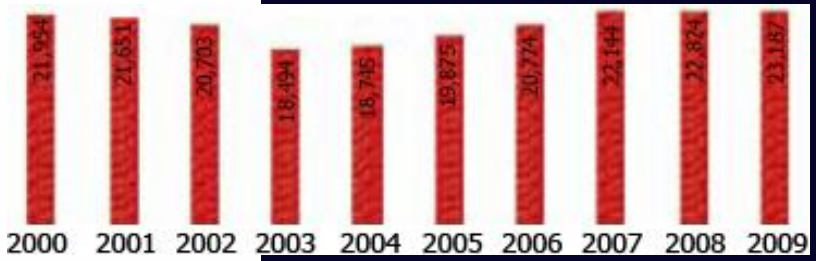


In 2009, statistical data reported an increase of foreign nationals reported for drug-related offences. The disaggregated data show a rise regarding the offence of drug trafficking and a drop as to criminal conspiracy.

NATIONAL COUNTER-NARCOTICS ACTIVITIES

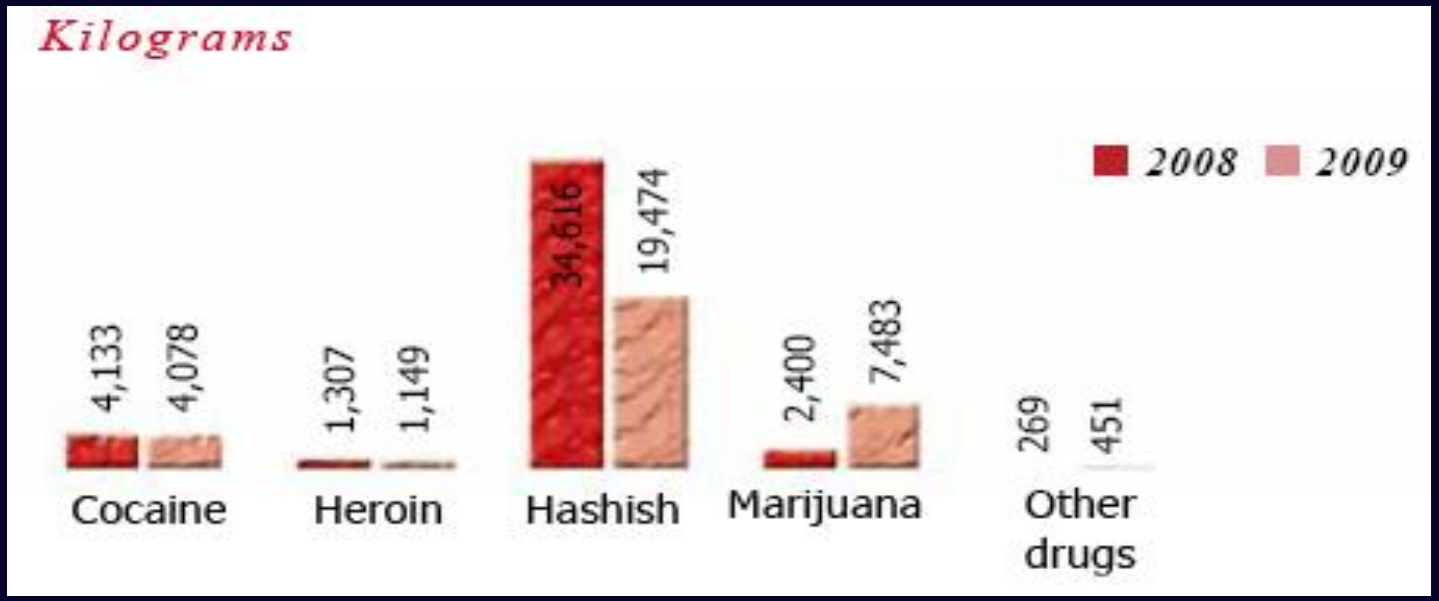
Regional subdivision of drug operations in 2009



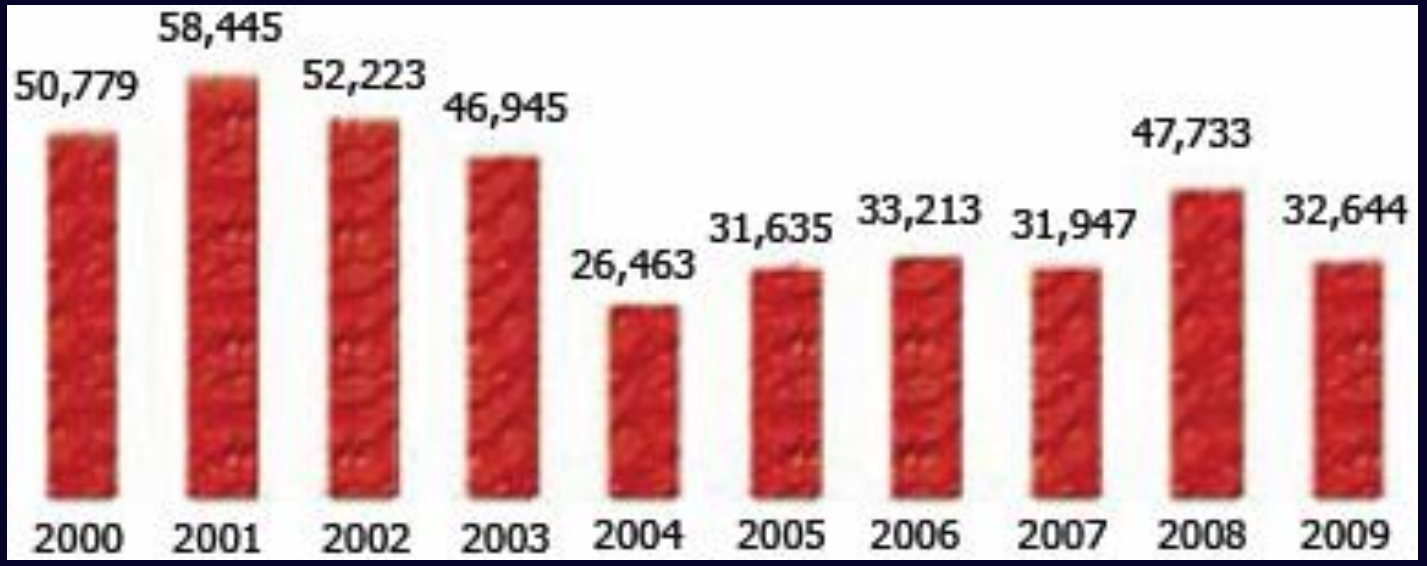


REGIONE Sicilia (Sicily, 1st semester 2010)

DRUG SEIZURES (2008/2009)



Ten-year trend of drug seizures



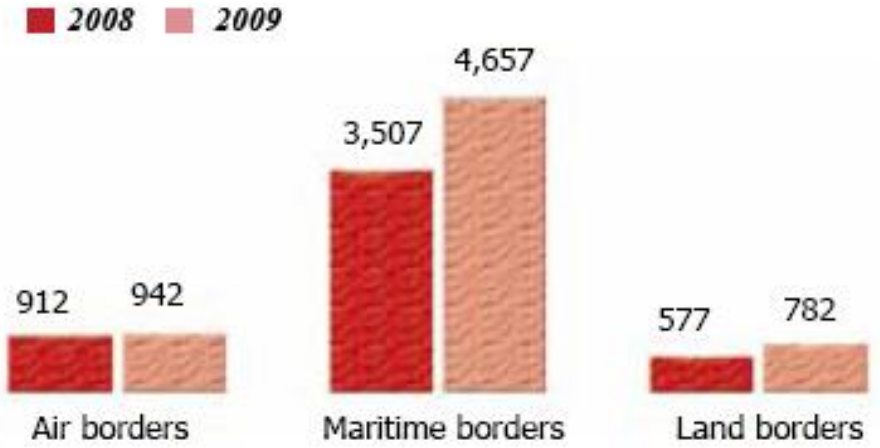
TREND OF SEIZURES MADE IN CUSTOM AREAS

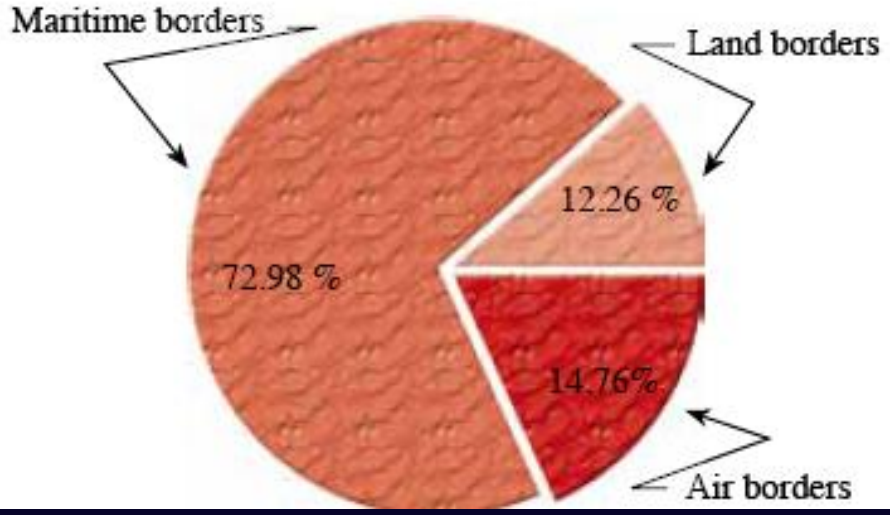
Total seizures

Seizures of main drugs (2009)

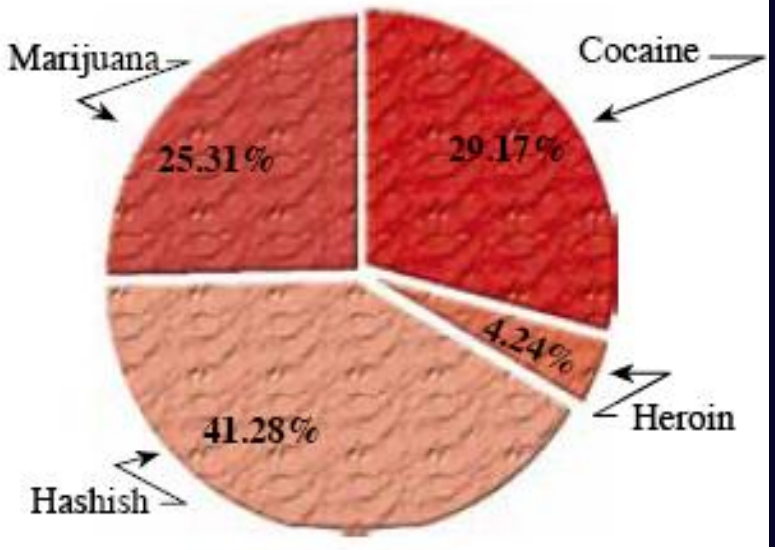
	Cocaine kg.	Heroin Kg.	Hashish kg.	Marijuana kg.
Total customs areas	**1,930.04**	**896.27**	**16,790.09**	**6,175.93**
Air borders	714.75	45.54	126.71	54.99
Maritime borders	1,358.86	197.47	1,922.59	1,178.63
Land borders	74.41	9.48	625.05	73.10
Total territory:	2,148.02	252.49	(*) 2,684.21	1,306.72
Total	**4,078.06**	**1,148.76**	**19,474.30**	**7,482.65**

(*) *it includes the seizure of kg. 9.86 made in a Customs area (land border)*

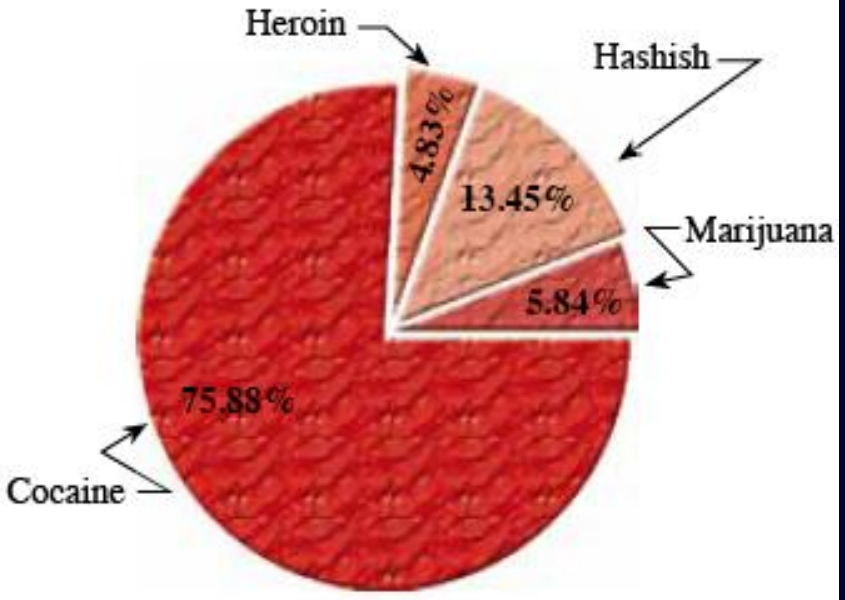




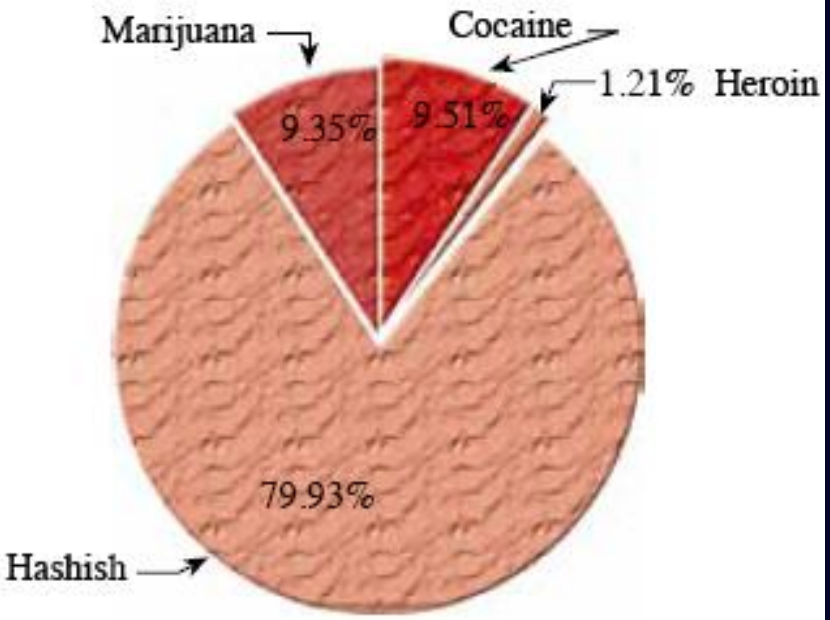
Maritime borders



Air borders



Land borders

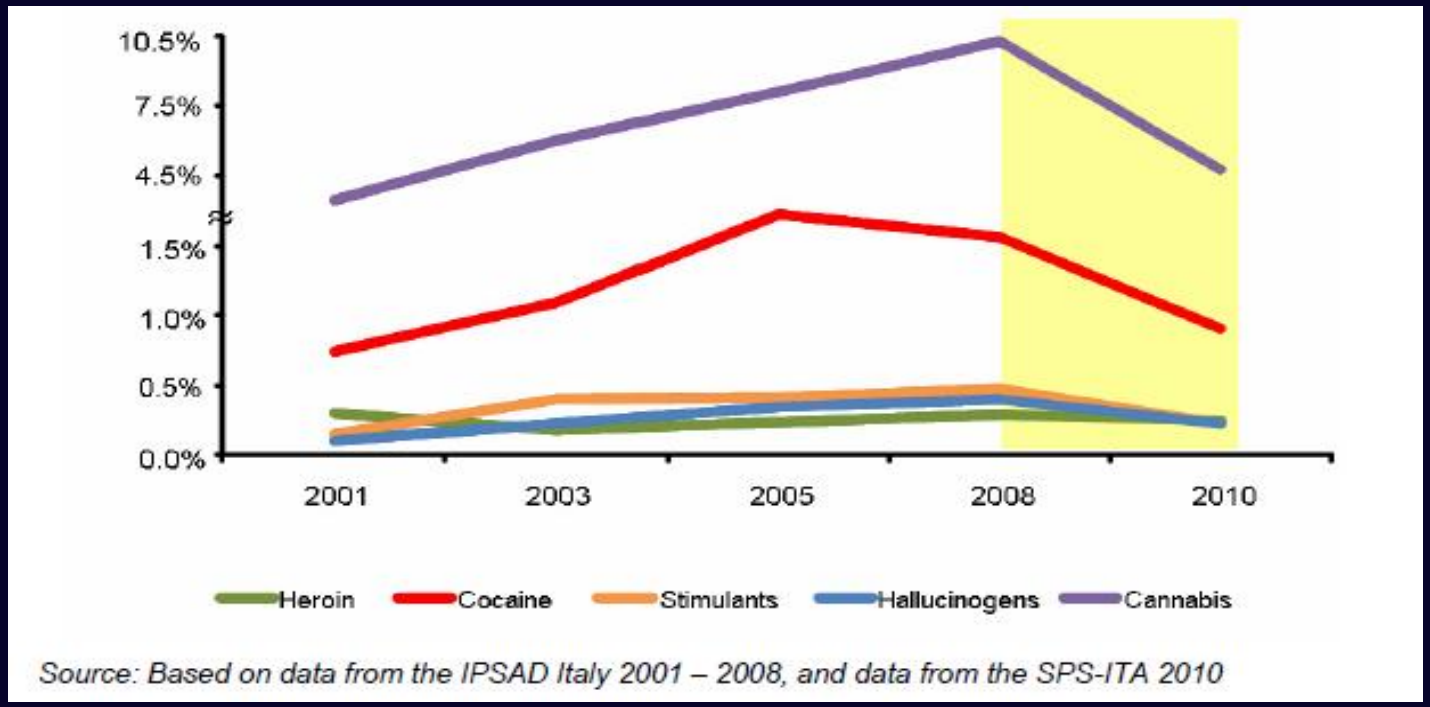


Regional subdivision of minors reported to the J.A. (2009)

Topics

- An overview on illicit drug trafficking
- Epidemiologic observations about drug abuse
- New drugs and mechanisms of addiction
- Actions: knowledge and prevention

DRUG USE IN THE GENERAL POPULATION AGED 15-64 (AT LEAST ONCE IN THE LAST 12 MONTHS) THE YEARS 2001 - 2010



Source: Based on data from the IPSAD Italy 2001 – 2008, and data from the SPS-ITA 2010

Overall decrease in drug use in the general population

Type of drug	Prevalence 2008	Prevalence 2010	Difference 2008-2010	% Difference 2008-2010
Heroin	0.39%	0.25%	-0.14 % points	-35.9 %
Cocaine	2.1%	0.9%	-1.2 % points	-57.1%
Cannabis	14.3%	5.2%	-9.10 % points	-63.6%
Stimulants	0.74%	0.22%	-0.52 % points	-70.3%
Hallucinogens	0.65%	0.22%	-0.43 % points	-66.2%

Source: GPS-ITA Survey 2010 – Department for Anti-drug Policies

DISTRIBUTION OF THE FIRST-STAGE UNITS BY REGION AND TYPE OF ACADEMIC INSTITUTION

Assessment of 34,738 students between 15-19 years of age

Region	Secondary schools and *ex-magistrali*[1]	Polytechnic institutes	Vocational institutes	Arts high secondary schools and colleges	Total
Abruzzo	6	6	5	2	19
Basilicata	5	5	4	3	17
Calabria	12	8	3	4	27
Campania	26	21	14	3	64
Emilia Romagna	9	12	7	3	31
Friuli Venezia Giulia	4	5	4	2	15
Latium	21	13	13	3	50
Liguria	7	5	4	2	18
Lombardy	27	12	19	8	66
Marche	4	5	6	5	20
Molise	3	3	4	2	12
Piedmont	11	11	8	3	33
Apulia	10	17	7	3	37
Sardinia	10	6	6	3	25
Sicily	23	19	14	3	59
Tuscany	9	11	5	4	29
Trentino Alto Adige	8	5	3	2	18
Umbria	4	5	4	2	15
Valle d'Aosta	3	2	3	1	9
Veneto	12	16	8	3	39
Total	**214**	**187**	**141**	**61**	**603**

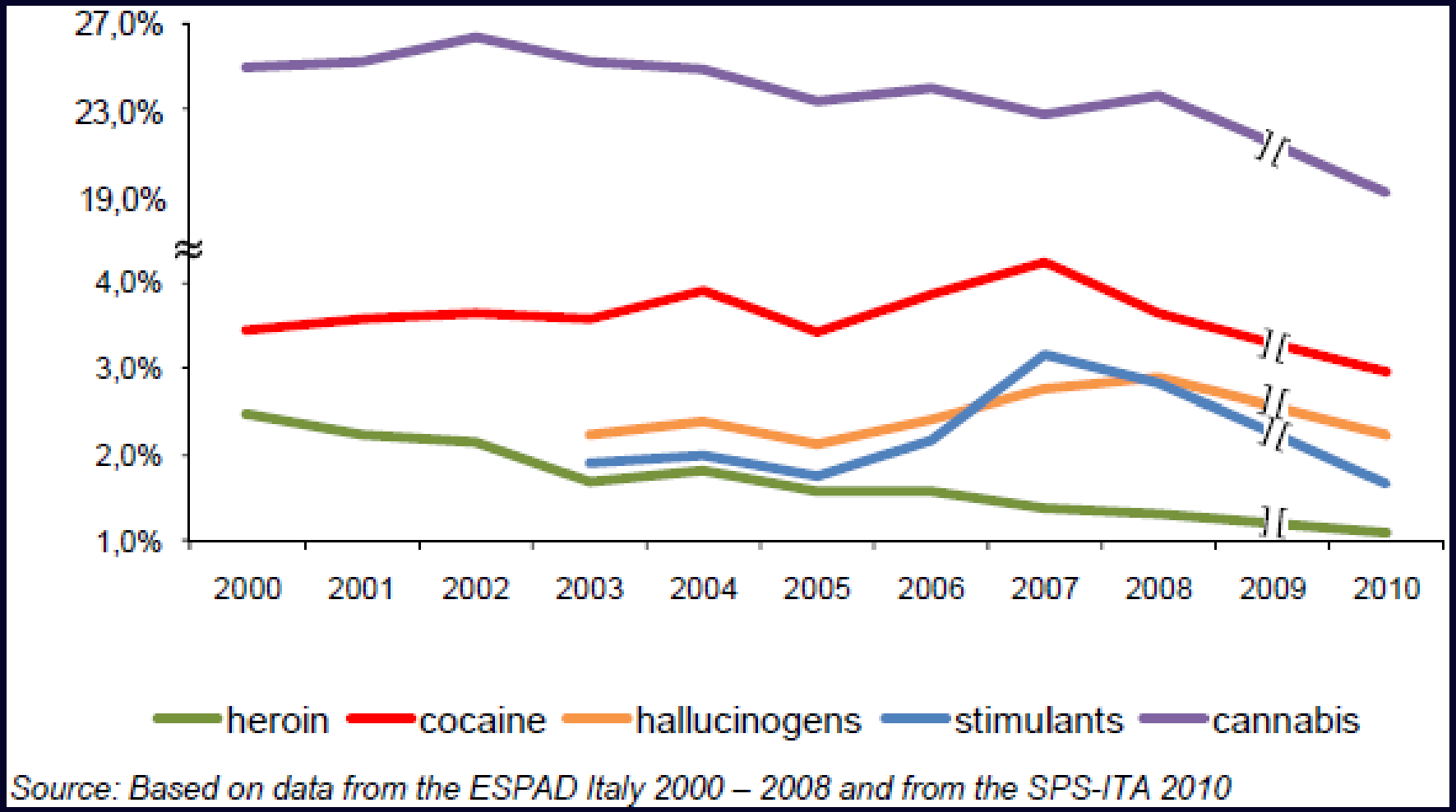
Source: Survey SPS-ITA 2010 – Department for Anti-drug Policies

DRUG USE IN THE STUDENT POPULATION AGED 15-19

(for those students who used drugs at least once in the 12 months prior to the survey).

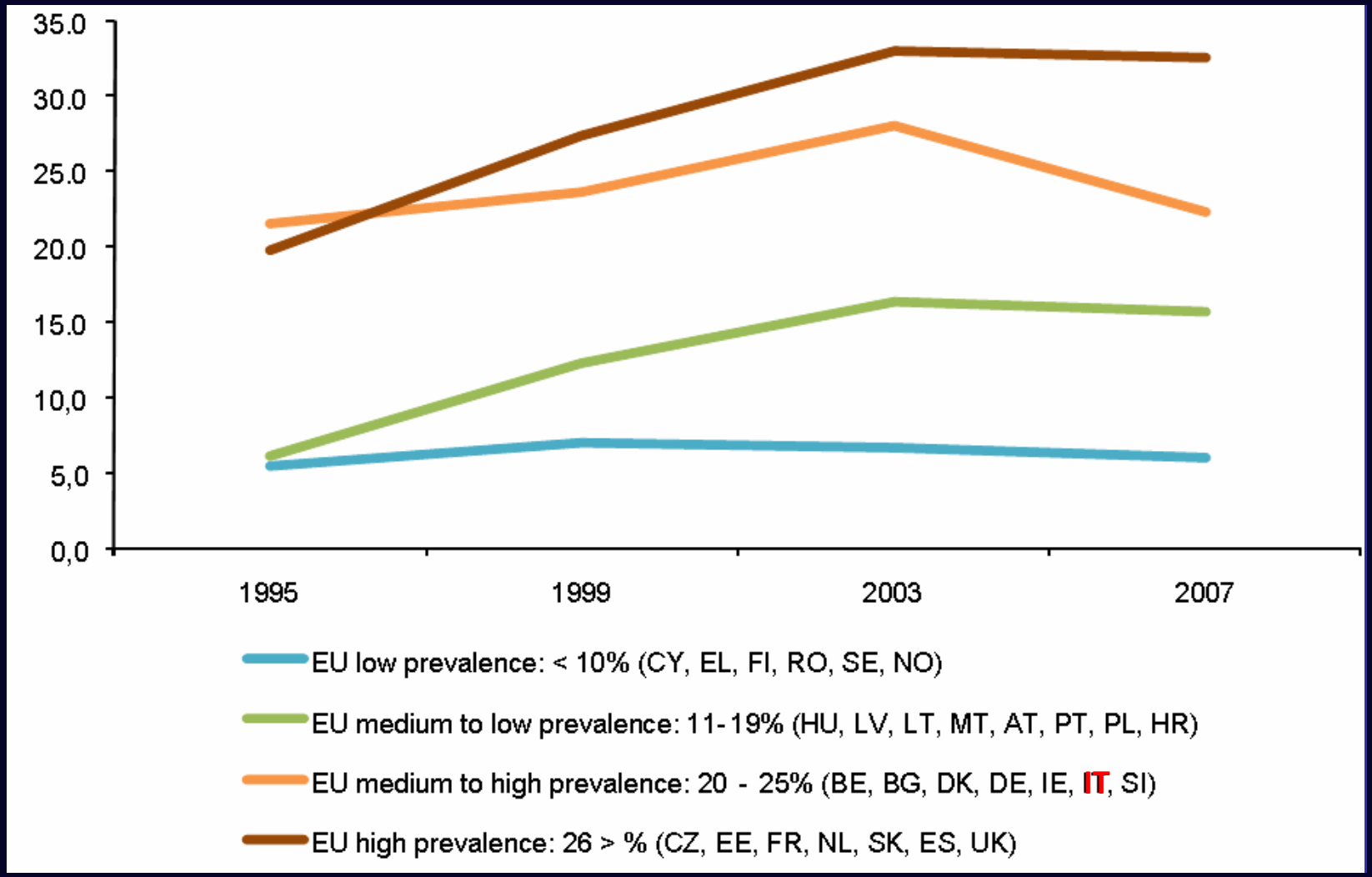
The years 2000 – 2010

Large sample size: 34,738 subjects between 15-19 years of age up to and not after May 30, 2010



Source: Based on data from the ESPAD Italy 2000 – 2008 and from the SPS-ITA 2010

CANNABIS USE IN THE STUDENT POPULATION AGED 15-16 (AT LEAST ONCE IN THEIR LIVES). THE YEARS 1995 – 2007.



Source: EMCDDA – Statistical Bulletin 2009

CONDITIONAL PREVALENCE DISTRIBUTION OF POLYDRUG USERS IN THE GENERAL POPULATION AGED 15-64 WHO HAD USED DRUGS IN THE 30 DAYS PRIOR TO THE SURVEY

Drug type	Alcohol	Tobacco (≥ cigarette per day)	Cannabis	Cocaine	Heroin
Cannabis	91.2	56.9	-	10.8	2.5
Cocaine	94.2	76.7	64.0	-	15.1
Heroin	79.2	95.8	54.2	54.2	-

Source: Based on data from the GPS-ITA 2010

DISTRIBUTION OF CONDITIONAL PREVALENCE OF POLYDRUG USERS IN THE STUDENT POPULATION AGED 15-19 IN THE 12 MONTHS PRIOR TO THE SURVEY (LAST YEAR PREVALENCE). THE YEAR 2010

Drug Type	Alcohol	Tobacco (≥ cigarette per day)	Cannabis	Cocaine	Heroin
Cannabis	98.6	96.2	-	16.6	5.4
Cocaine	98.2	94.5	96.0	-	27.0
Heroin	97.6	89.3	95.9	84.9	-

Source: Based on data from the SPS-ITA 2010

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New Drugs are difficult to detect because, typically, they first emerge at low levels and in specific localities or among restricted sub-groups of the population.

CATHINONES

Cathinone, or Benzoylethanamine, is a monoamine alkaloid found in the shrub "*Catha edulis*" (khat) and is chemically similar to ephedrine, cathine and other amphetamines.

EFFECTS:
Euphoria
Excitement
Mydriasis
Hallucination

EFFECTS:
Insomnia
Restlessness
Psychosis
Tachycardia

SYNTHETIC CATHINONES

MEPHEDRONE

MPDV

METHCATHINONE

METHYLONE

SPICE PRODUCTS

"Spice" is a product line sold as a legal herb-based alternative to cannabis. It's sold under severall names: *Spice Silver, Spice Gold, Spice Diamond*.

SPICE PRODUCTS COMPONENTS:

Common name	Species	Family
Beach bean	*Canavalia maritima; syn. C. rosea*	Fabaceae
White and blue water lily	*Nymphaea alba and N. caerulea*	Nymphaeaceae
Dwarf skullcap	*Scutellaria nana*	Lamiacae
Indian warrior	*Pedicularis densiflora*	Orobanchaceae
Lion's ear/tail, Wild dagga	*Leonotis leonuru*	Lamiacae
'Maconha brava'	*Zornia latifolia or Z. diphylla*	Fabaceae
Blue/Sacred lotus	*Nelumbo nucifera*	Nelumbonaceae
Honeyweed/Siberian motherwort	*Leonurus sibiricus*	Lamiaceae
Marshmallow	*Althaea officinalis*	Malvaceae
Dog rose/Rosehip	*Rosa canina*	Roseceae

MARIJUANA SUBSTITUTES

PIPERAZINES, GHB/GBL

Common names: A2, Frenzy, Nemesis

Common names: G, Sodium Oxybate, Xyrem

Used as recreational substances, they are CNS stimulant which people describe as a noticeably different stimulant effect than amphetamines.

GHB (gamma – hydroxybutyrate)
The effects of GHB at recreational doses are physically quite similar to those of alcohol

Consequences of drug abuse

Why study drug abuse and addiction?

People of all ages suffer the harmful consequences of drug abuse and addiction:

- ✓ ***Babies*** Exposed to legal and illegal drugs in the womb may be born premature and underweight. This drug exposure can slow the child's intellectual development and affect behavior later in life.
- ✓ ***Adolescents*** Who abuse drugs often act out, do poorly academically, and drop out of school. They are at risk of unplanned pregnancies, violence, and infectious diseases.
- ✓ ***Adults*** Who abuse drugs often have problems thinking clearly, remembering, and paying attention. They often develop poor social behaviors as a result of their drug abuse, and their work performance and personal relationships suffer.
- ✓ ***Parents'*** Drug abuse often means chaotic, stress-filled homes and child abuse and neglect. Such conditions harm the well-being and development of children in the home and may set the stage for drug abuse in the next generation.

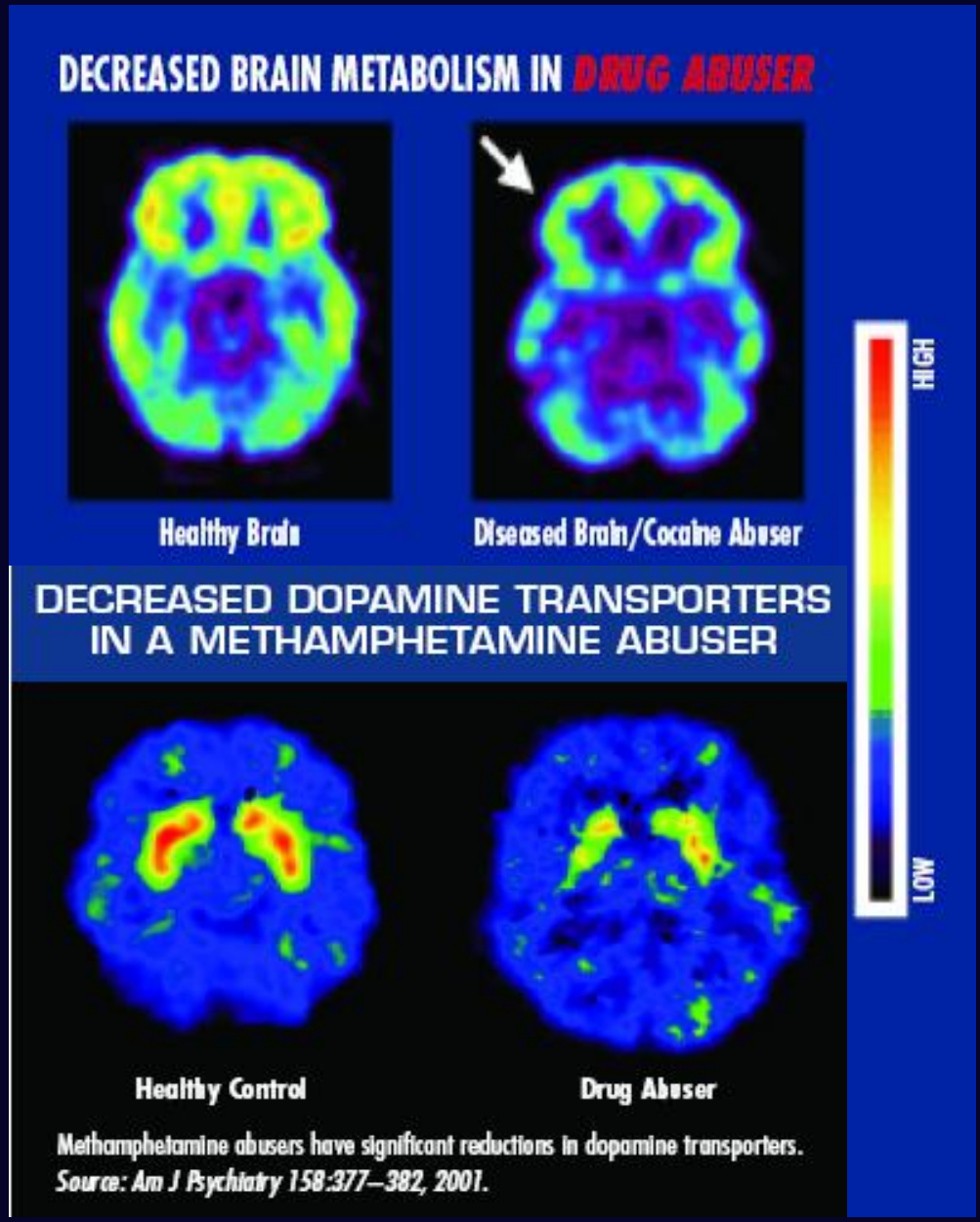
DRUG ABUSE AND ADDICTION

What is drug addiction?

Addiction is defined as a chronic, relapsing brain disease that is characterized by compulsive drug seeking and use, despite harmful consequences.

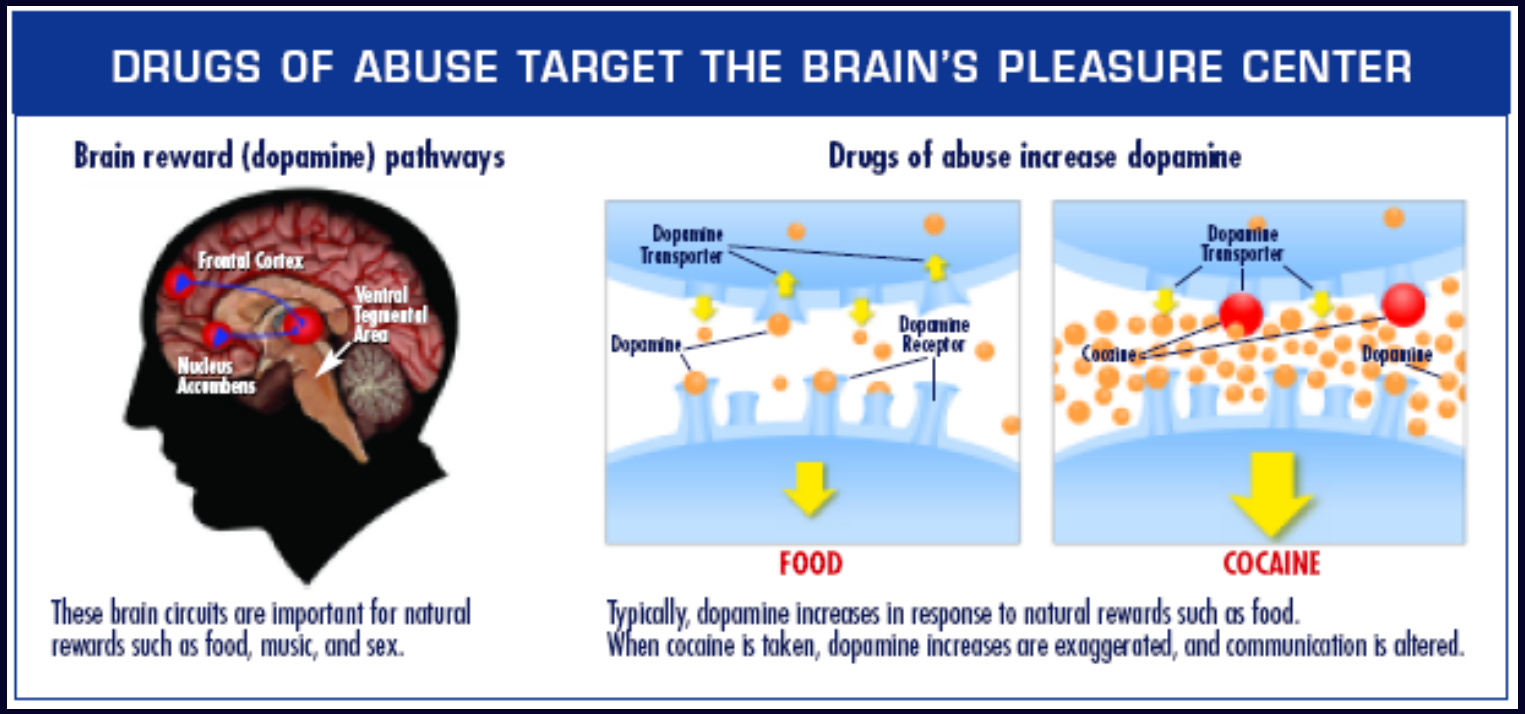
It is a brain disease because drugs change the brain—they change its structure and how it works. These changes can be long lasting, and can lead to the harmful behaviors seen in people who abuse drugs

Addiction is similar to other diseases, such as heart disease. Both disrupt the normal, healthy functioning of the underlying organ, have serious harmful consequences, are preventable, treatable, and if left untreated, can last a lifetime



MOST DRUGS OF ABUSE TARGET THE BRAIN'S REWARD SYSTEM BY FLOODING THE CIRCUIT WITH DOPAMINE

Why are drugs more addictive than natural rewards?



ADDICTION AND HEALTH

THE IMPACT OF ADDICTION CAN BE FAR REACHING

- Cardiovascular disease
- Stroke
- Cancer
- HIV/AIDS
- Hepatitis B and C
- Lung disease
- Mental disorders

4 OUT OF 10 U.S. AIDS DEATHS ARE RELATED TO DRUG ABUSE

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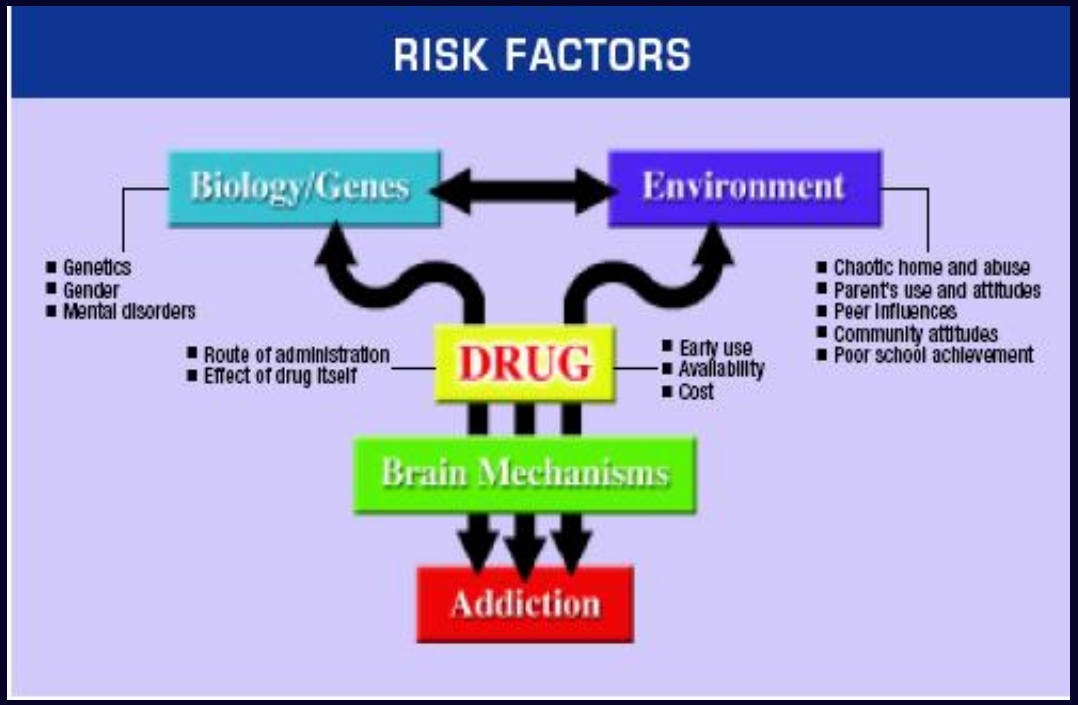
WHY DO SOME PEOPLE BECOME ADDICTED TO DRUGS, WHILE OTHERS DO NOT?

WHAT FACTORS DETERMINE IF A PERSON WILL BECOME ADDICTED?



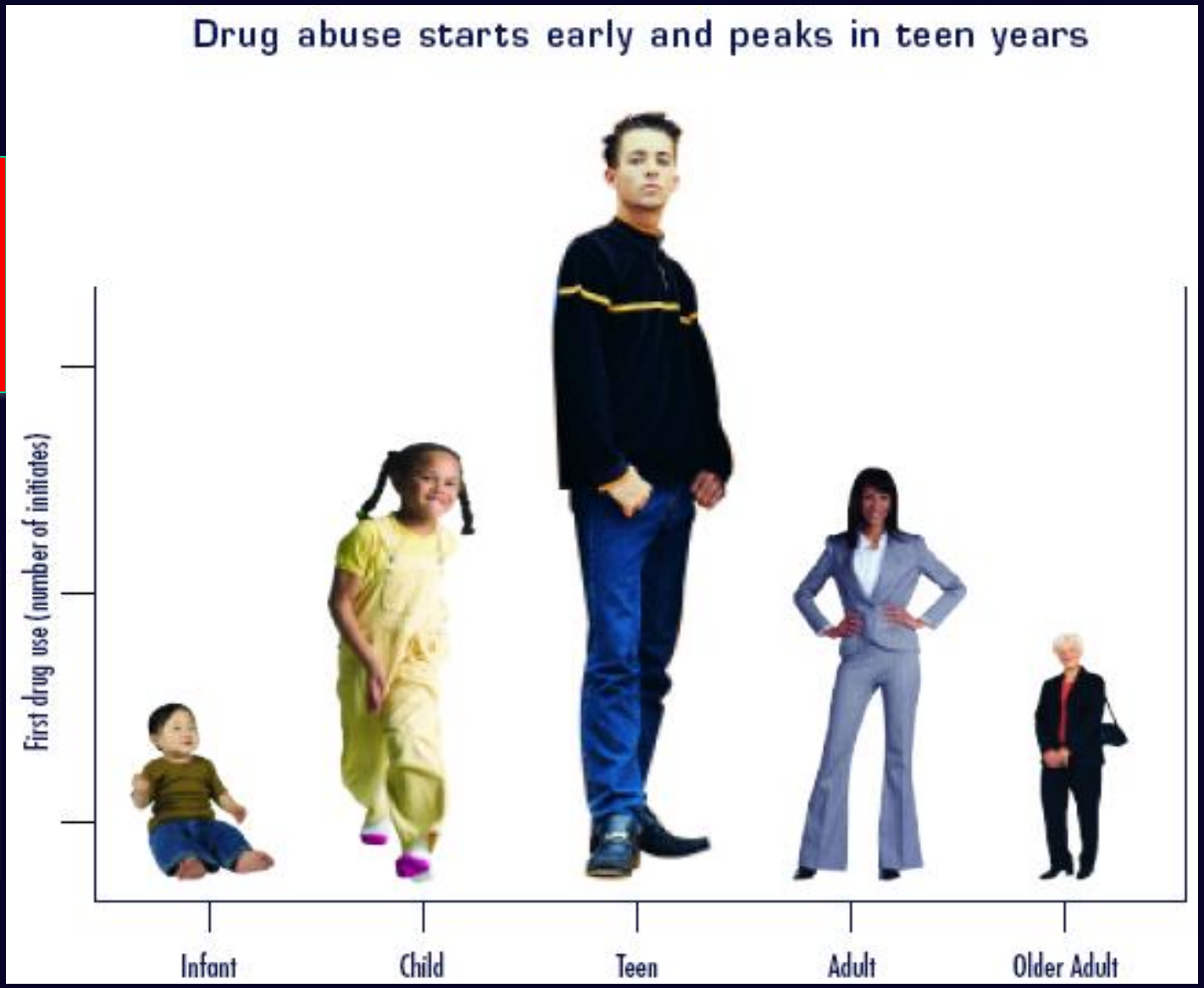
EXAMPLES OF RISK AND PROTECTIVE FACTORS

Risk Factors	Domain	Protective Factors
Early Aggressive Behavior	Individual	Self-Control
Poor Social Skills	Individual	Positive Relationships
Lack of Parental Supervision	Family	Parental Monitoring and Support
Substance Abuse	Peer	Academic Competence
Drug Availability	School	Anti-Drug Use Policies
Poverty	Community	Strong Neighborhood Attachment

Why is adolescence a critical time for preventing drug addiction?

National drug use surveys indicate some children are already abusing drugs by age 12 or 13.

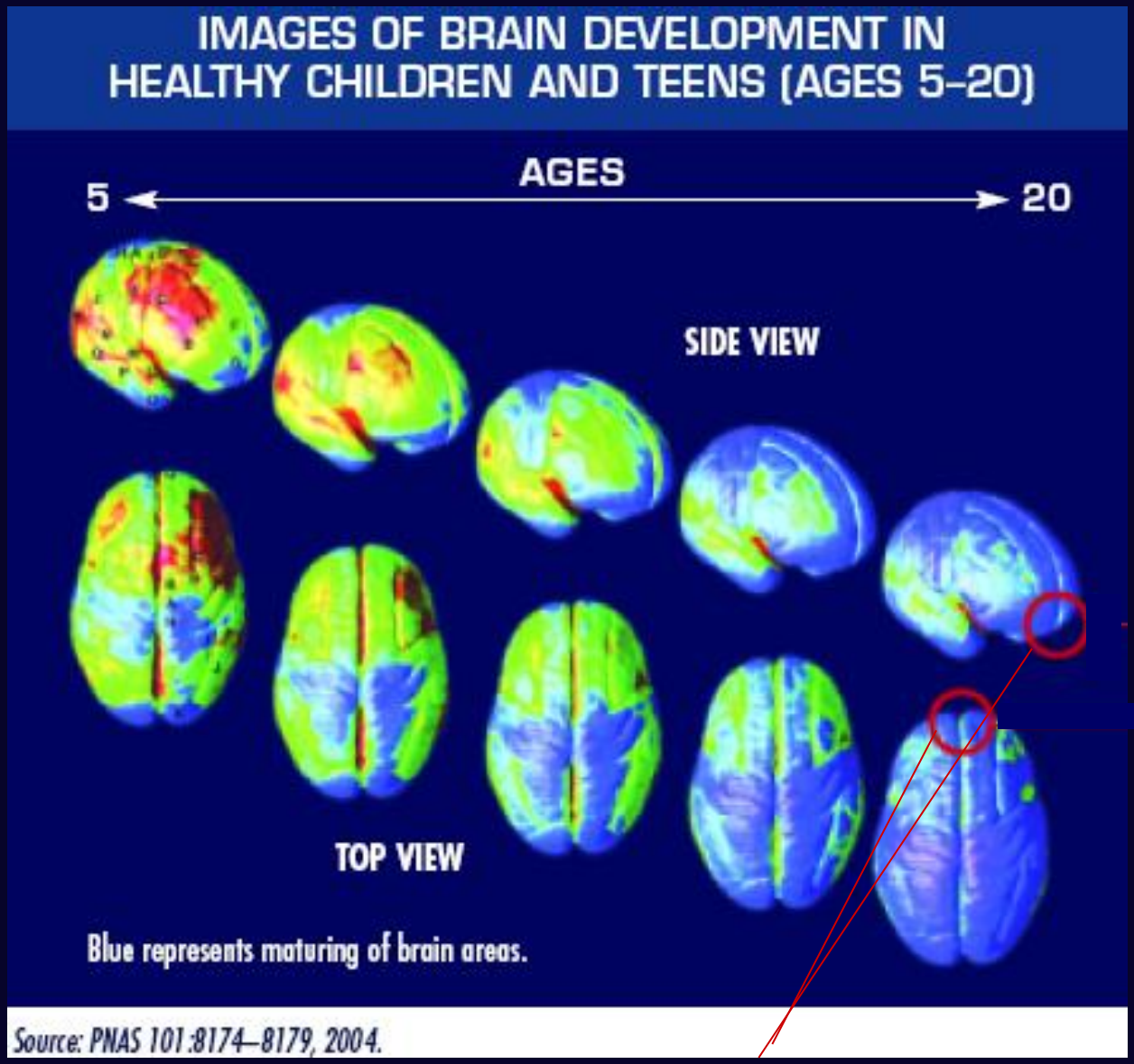
Preventing Drug Use among Children and Adolescents can significantly reduce early use of tobacco, alcohol, and illicit drugs



ADDICTION IS A DEVELOPMENTAL DISEASE IT TYPICALLY BEGINS IN CHILDHOOD OR ADOLESCENCE

The brain continues to develop into adulthood and undergoes dramatic changes during adolescence.

One of the brain areas still maturing during adolescence is the prefrontal cortex—the part of the brain that enables us to assess situations, make sound decisions, and keep our emotions and desires under control.



CAN ADDICTION BE CURED?

MEDICATIONS USED TO TREAT DRUG ADDICTION

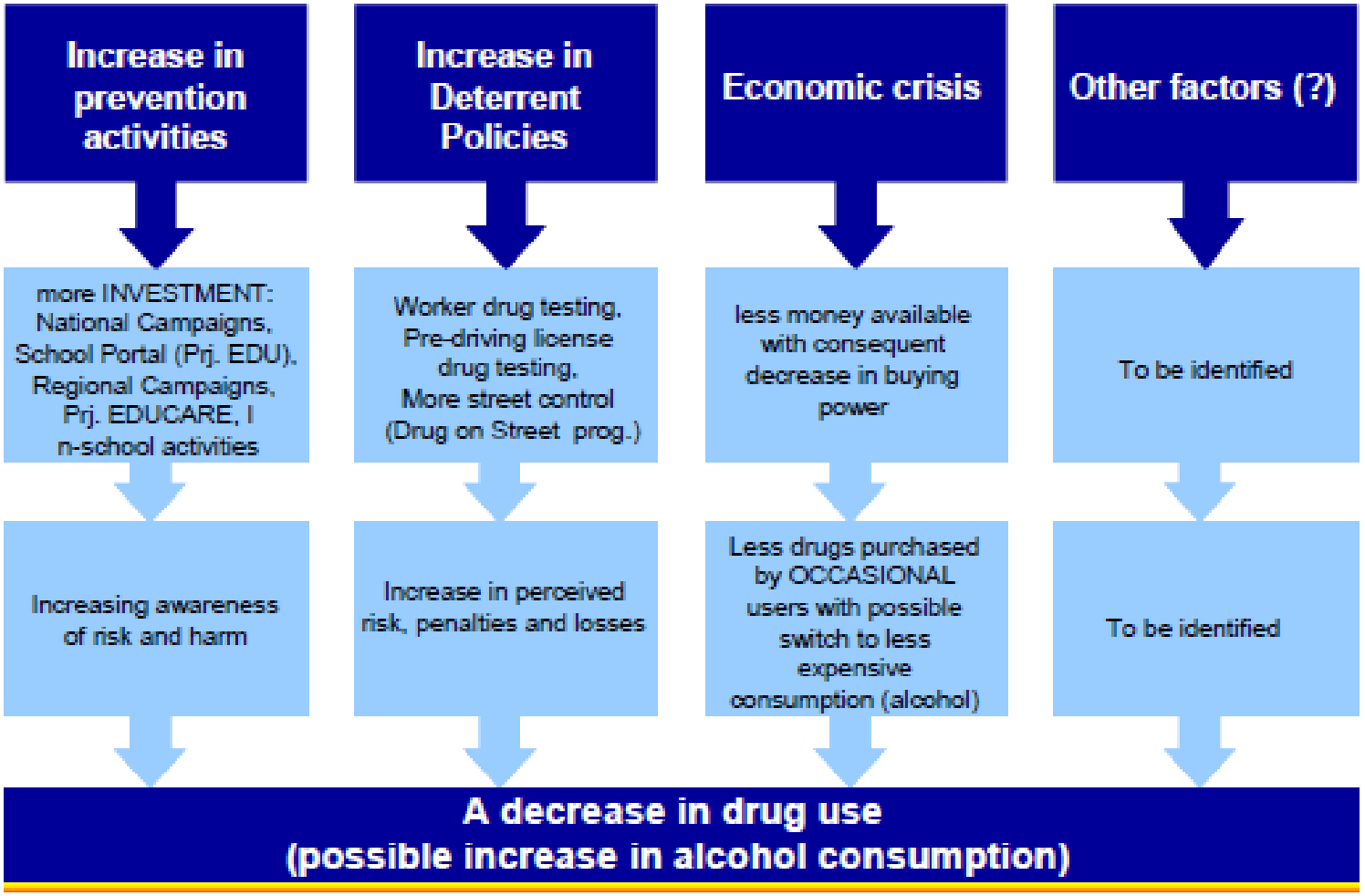
- Tobacco Addiction
  - Nicotine replacement therapies (e.g., patch, inhaler, gum)
  - Bupropion
  - Varenicline
- Opioid Addiction
  - Methadone
  - Buprenorphine
  - Naltrexone
- Alcohol and Drug Addiction
  - Naltrexone
  - Disulfiram
  - Acamprosate

BRAIN RECOVERY WITH PROLONGED ABSTINENCE

How do the best treatment programs help patients recover from the pervasive effects of addiction?

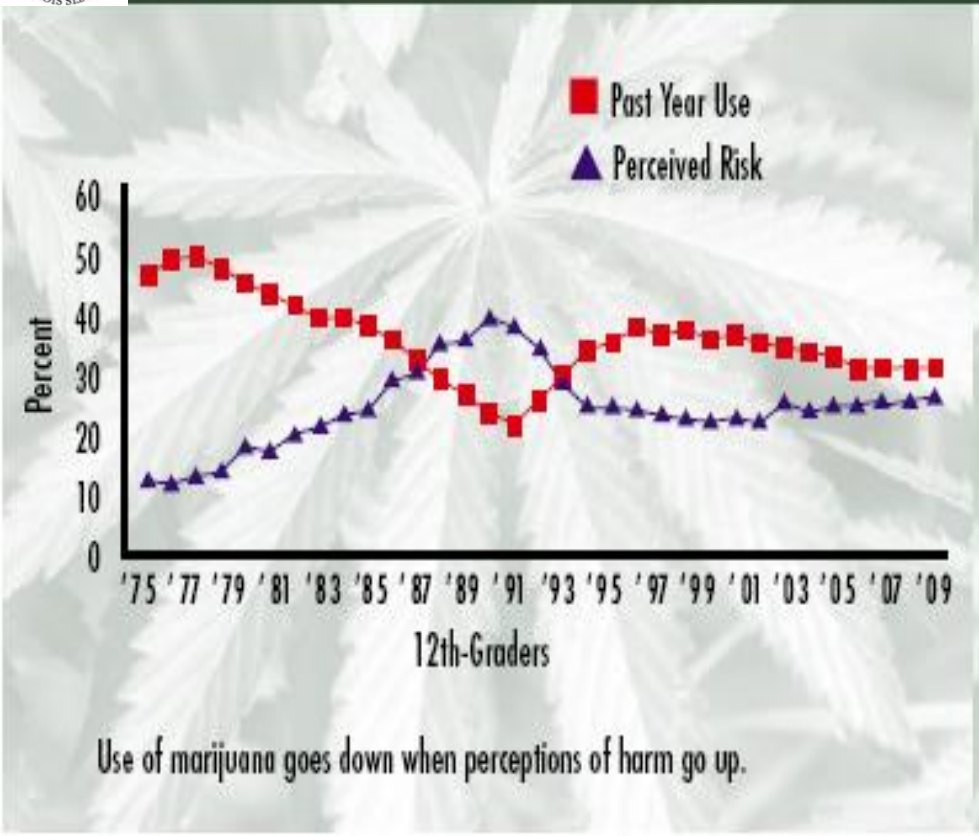
- ***Cognitive Behavioral Therapy.*** Seeks to help patients recognize, avoid, and cope with the situations in which they are most likely to abuse drugs.
- ***Motivational Incentives.*** Uses positive reinforcement such as providing rewards or privileges for remaining drug free, for attending and participating in counseling sessions, or for taking treatment medications as prescribed.
- ***Motivational Interviewing.*** Employs strategies to evoke rapid and internally motivated behavior change to stop drug use and facilitate treatment entry.
- ***Group Therapy.*** Helps patients face their drug abuse realistically, come to terms with its harmful consequences, and boost their motivation to stay drug free. Patients learn effective ways to solve their emotional and interpersonal problems without resorting to drugs.

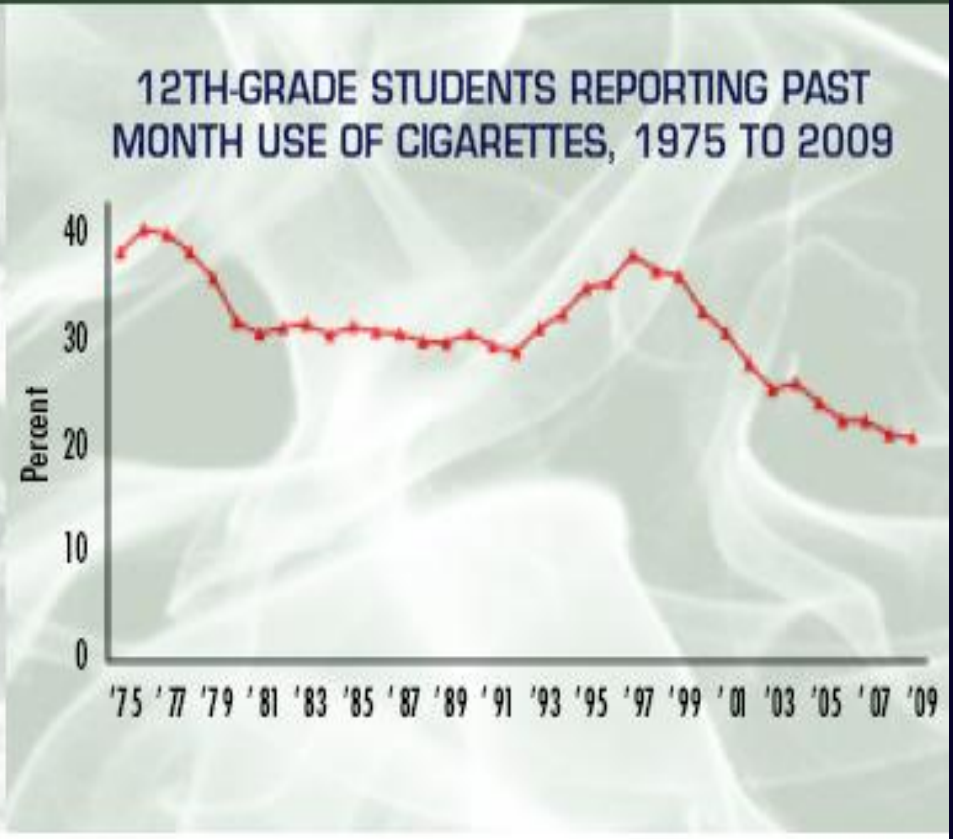
Possible major factors conditioning use and consumption.
The situation in 2009-2010



Source: DPA

PREVENTION IS THE BEST STRATEGY

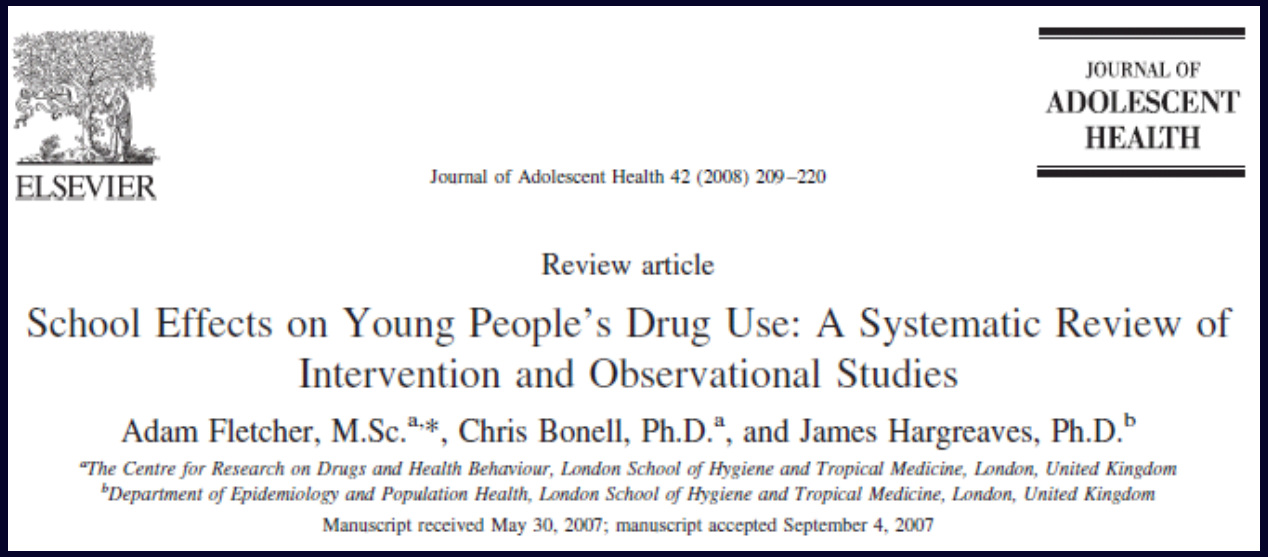




Source: 2009 Monitoring the Future survey. University of Michigan, with funding from the National Institute on Drug Abuse.

Good news: Cigarette smoking is at its lowest point since National Institutes of drug abuse (NIDA) began tracking it in 1975.

But declines in illicit drug use, especially marijuana, have stalled in the past few years. Prevention efforts should be redoubled to counter this troubling trend.



ELSEVIER

Journal of Adolescent Health 42 (2008) 209–220

JOURNAL OF ADOLESCENT HEALTH

Review article

School Effects on Young People's Drug Use: A Systematic Review of Intervention and Observational Studies

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Manuscript received May 30, 2007; manuscript accepted September 4, 2007

Results

•Changes to the school social environment that increase student participation, improve relationships and promote a positive school ethos may be associated with reduced drug use.

•School-level and individual-level observational studies consistently reported that disengagement and poor teacher–student relationships were associated with drug use and other risky health behaviors.

Conclusions:

There is evidence of school effects on young people's drug use. Interventions that promote a positive school ethos and reduce student disaffection may be an effective complement to drug prevention interventions addressing individual knowledge, skills, and peer norms.

Our Activities in the University of Palermo

- Preclinical and clinical research on alcoholism and addiction mechanisms
- Prevention and informational campaign on drug abuse

University of Palermo

Doctorate in Neuroscience and Behavioural Disorders

Piano Sanitario Regionale
“PIANO DELLA SALUTE”
2010-2012

Dipendenze patologiche, Interventi prioritari

1. Rafforzare il Sistema dei Servizi per le dipendenze della Regione Sicilia con la attivazione dell’Area

2. Mantenere e migliorare l’Osservatorio Epidemiologico Regionale per le Dipendenze per valutare in modo appropriato i bisogni di salute.

3. Mettere a regime la manutenzione del sistema di gestione delle attività dei servizi denominato Osservatorio Provinciale Dipendenze (OEPD), parte costitutiva integrante del Nuovo Sistema Informativo Sanitario Regionale e Nazionale, in atto molte ASP Siciliane hanno un debito informativo con il Ministero del Welfare e salute

4. Promuovere una efficace attività di prevenzione delle dipendenze patologiche.

5. Incrementare il numero di soggetti consumatori e/o dipendenti in contatto con la rete dei servizi per ora collocati nel sommerso.

6. Potenziare i programmi finalizzati al reinserimento familiare e lavorativo degli utenti, mirando al pieno recupero della persona.

7. Attivare il sistema di ”allerta precoce e risposta rapida per le droghe” al fine di prevenire le morti per overdose e tagli pericolosi.

Piano Sanitario Regionale
“PIANO DELLA SALUTE”
2010-2012
Attività di prevenzione

1. Prevenire il consumo di stupefacenti e i rischi ad esso connessi
•incentivando la creazione di campagne informative, non di tipo dissuasivo, basate su dati probanti e valutati, riguardo gli effetti dell’uso e abuso di sostanze tossiche all’organismo;
•valorizzando le esperienze positive già attivate sul territorio con particolare rilievo per i programmi sulla vulnerabilità da dipendenza da sostanza;
•coinvolgendo i diversi attori interessati, soprattutto le scuola, le associazioni sportive, gli ambienti di divertimento;
•prediligendo metodologie che favoriscono il confronto tra pari e la creazione di Centri di aggregazione ed educativi in ogni comune.
2. Prevenire il comportamento ad alto rischio dei consumatori
•elaborare ulteriormente i sistemi di individuazione precoce e di tempestivo intervento;
•continuare ad elaborare e porre in essere una prevenzione efficace, selettiva e valutata mirata ai gruppi vulnerabili, offrendo loro servizi facilmente accessibili di sostegno psicologico e di gestione dei comportamenti problematici con lavoro di prossimità, ove opportuno;
•ridurre le situazioni di disagio giovanile che potrebbero sfociare in dipendenze da sostanze psicotrope attraverso la presenza di operatori specializzati in tutte le scuole medie e superiori della Regione art.105- 106 DPR 309/90, legge 49 del 2006.