# Pregabalinmissbrauch /-Abhängigkeit

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Zürich, 02. Dezember 2025

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Beziehung im Mittelpunkt

# Inhaltsverzeichnis

- Hintergründe Medikamentenmissbrauch
- Welche Medikamente werden überhaupt missbraucht?
- Studien über Pregabalin-Missbrauch und Einordnung

# The Lancet Psychiatry, Vol3(2), Febr. 2016



3 Schmidt U, Magill N, Renwick B, et al. The Maudsley outpatient study of treatments for anorexia nervosa and related conditions (MOSAIC): comparison of the Maudsley model of anorexia nervosa treatment for adults (MANTRA) with specialist supportive clinical management (SSCM) in outpatients with broadly defined anorexia nervosa: A randomized controlled trial. *J Consult Clin Psychol* 2015; **83:** 796–807.
4 Weimer K, Colloca L, Enck P. Placebo effects in psychiatry: mediators and moderators. *Lancet Psychiatry* 2015; **2:** 246–57.
5 Marcus DK, O'Connell D, Norris AL, Sawaqdeh A. Is the Dodo bird endangered in the 21st century? A meta-analysis of treatment comparison studies. *Clin Psychol Rev* 2014; **34:** 519–30.

## Measuring substance misuse in trafficked people

Siân Oram and colleagues' recent study[1] in *The Lancet Psychiatry* has made a meaningful contribution to our understanding of the mental health of psychiatric subpopulations by investigating mental illness in trafficked people. The psychological effects of human trafficking are difficult to study because victims often have poor access to mental health services and numbers of unreported cases are likely to be high. By applying an innovative data collection approach, Oram and colleagues were able to analyse data from 122 trafficked patients.[1] Although this approach yielded seminal information regarding clinical burden in trafficked patients, the data about substance use disorders are less conclusive. The authors state that the analyses were likely to be biased because the proportion of missing data (37·4%) was highest regarding substance use disorders.[1] In a study by Rössler and colleagues investigating mental health of female sex workers, none of the women met the current criteria for alcohol dependency and only 0·5% met the criteria for lifetime alcohol dependency.[2] However, clinical observations suggest that sex workers have high rates of substance use disorders.[3] Reasons for inaccurate self-report regarding substance use disorders could be that sex workers and trafficked patients are afraid of legal consequences and are more hesitant to trust care givers because of traumatic experiences, self-stigma, and difficulty remembering exact amounts and frequency of (poly)-substance use. Additionally, many patients with substance use disorders trivialise the extent of their drug use, especially if they lack insight that their drug consumption is harmful or if they are in environments where substance use disorders are common. To investigate these disorders more reliably in these vulnerable psychiatric subpopulations, more objective methods are needed.

One such method is hair drug toxicology analysis, which has been used to measure drug use patterns more reliably.[5] Therefore, in neglected psychiatric populations where substance misuse is difficult to assess objectively by means of self-report, it would be advantageous to obtain hair toxicology analyses. This approach would not only yield more objective results, but would also provide valuable information about drug use patterns over time. Better characterisation of neglected subpopulations with psychiatric illnesses, such as sex workers or trafficked people, would allow for more individualised and better treatment options that take into account the patients and their disease burden as a whole.

We declare no competing interests.

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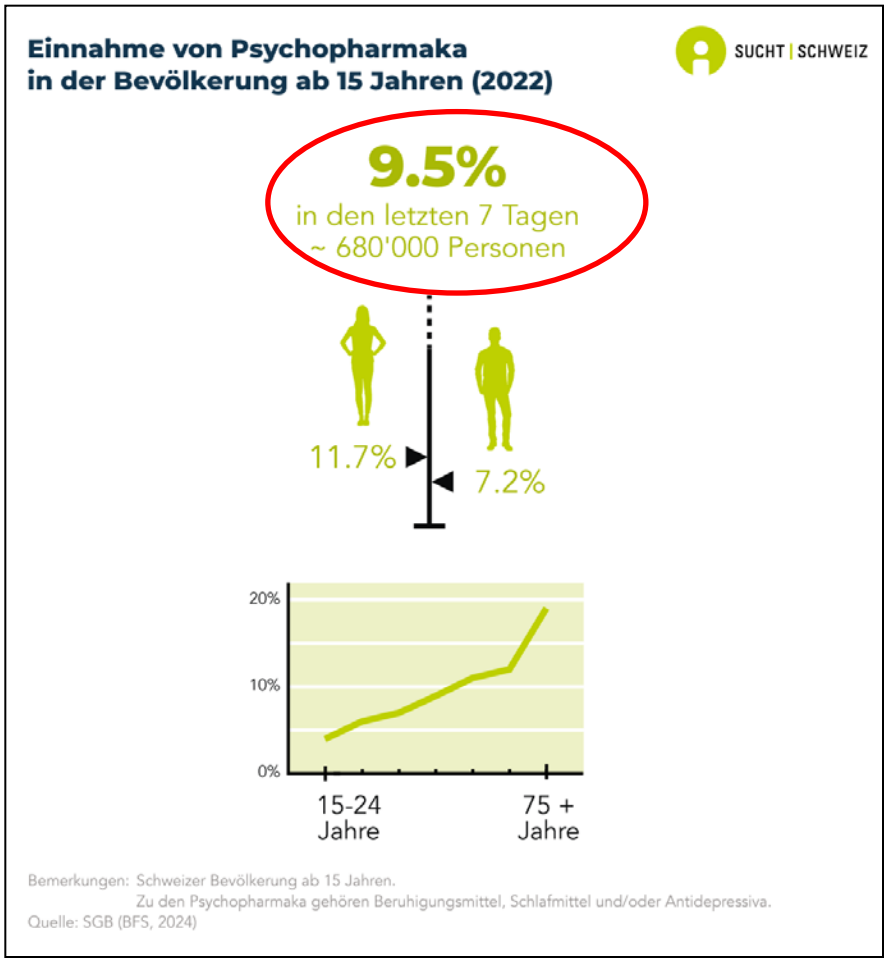
1 Oram S, Khondoker M, Abas M, Broadbent M, Howard LM. Characteristics of trafficked adults and children with severe mental illness: a historical cohort study. *Lancet Psychiatry* 2015; **2:** 1084–91.
2 Rossler W, Koch U, Lauber C, et al. The mental health of female sex workers. *Acta Psychiatr Scand* 2010; **122:** 143–52.
3 Rusakova M, Rakhmetova A, Strathdee SA. Why are sex workers who use substances at risk for HIV? *Lancet* 2015; **385:** 211–12.
4 Schomerus G, Corrigan PW, Klauer T, Kuwert P, Freyberger HJ, Lucht M. Self-stigma in alcohol dependence: consequences for drinking-refusal self-efficacy. *Drug Alcohol Depend* 2011; **114:** 12–17.
5 Vonmoos M, Hulka LM, Preller KH, et al. Cognitive dysfunctions in recreational and dependent cocaine users: role of attention-deficit hyperactivity disorder, craving and early age at onset. *Br J Psychiatry* 2013; **203:** 35–43.

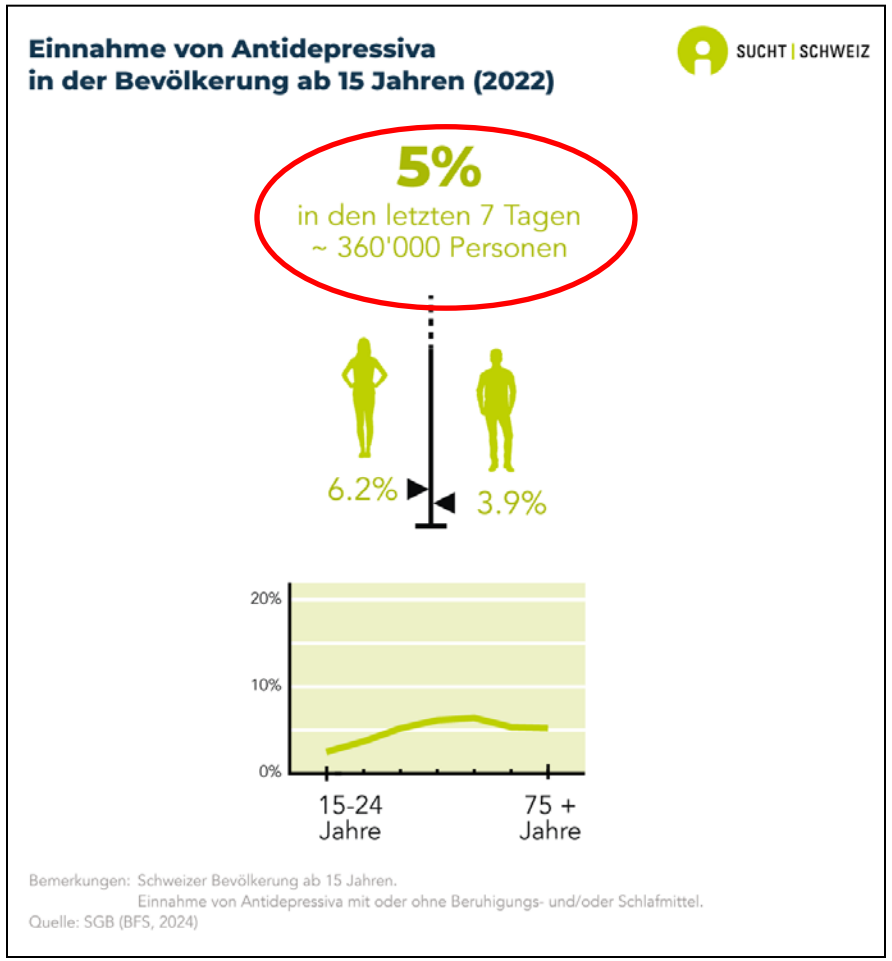
# Medikamentenmissbrauch
# Störung durch psychotrope Substanzen

| | |
|---|---|
| • Risikoreicher Alkoholkonsum | Entweder 20 g oder mehr Reinalkohol pro Tag bei Frauen bzw. 40 g oder mehr Reinalkohol bei Männern oder mindestens 1-mal pro Monat Rauschtrinken, d.h. Konsum von 4 Standardgetränken oder mehr bei Frauen bzw. 5 Standardgetränken oder mehr bei Männern. Ein Standardgetränk beinhaltet etwa 10-12 g Reinalkohol (etwa eine Stange Bier oder 1 dl Wein). |
| • Erhöhter Tabakkonsum | Tägliches Rauchen |
| • Erhöhte Medikamenteneinnahme | Tägliche oder fast tägliche Einnahme zumindest eines psychoaktiven Medikamentes (Schlaf-, Beruhigungs-, starke Schmerzmittel oder Psychostimulanzen) |
| • Erhöhter Cannabisgebrauch | Mindestens 1-mal pro Woche |
| • Erhöhter Gebrauch anderer Drogen als Cannabis | Gebrauch anderer Drogen als Cannabis zumindest 1-mal in den letzten 12 Monaten |

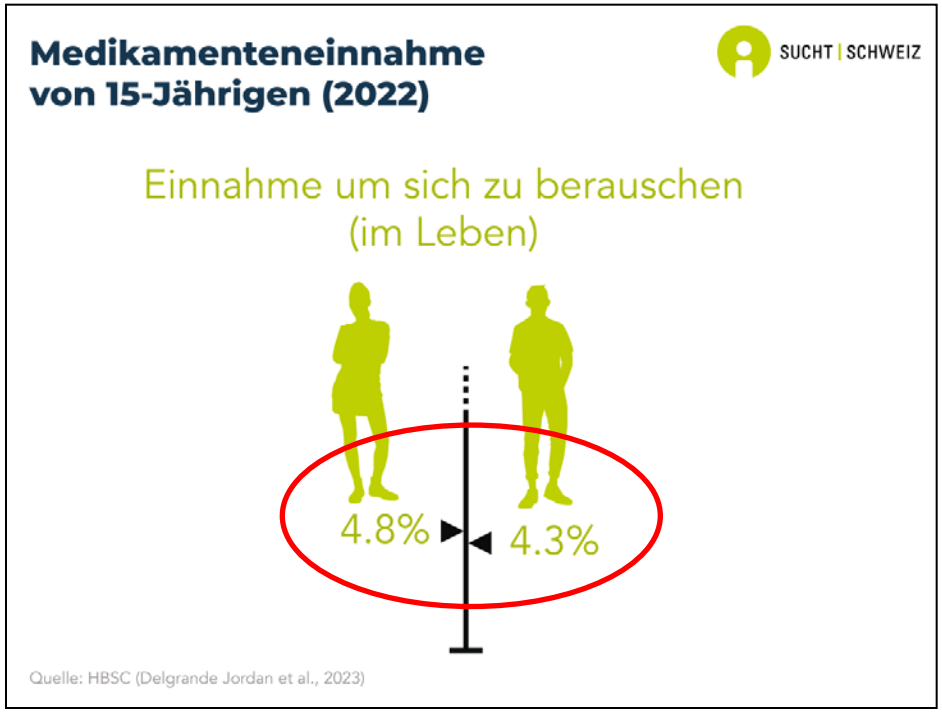
Gmel G., Kuendig H., Notari L., Gmel C., Flury R. (2013). Suchtmonitoring Schweiz - Konsum von Alkohol, Tabak und illegalen Drogen in der Schweiz in der Schweiz im Jahr 2012. Sucht Schweiz, Lausanne, Schweiz

# Zahlen Schweiz

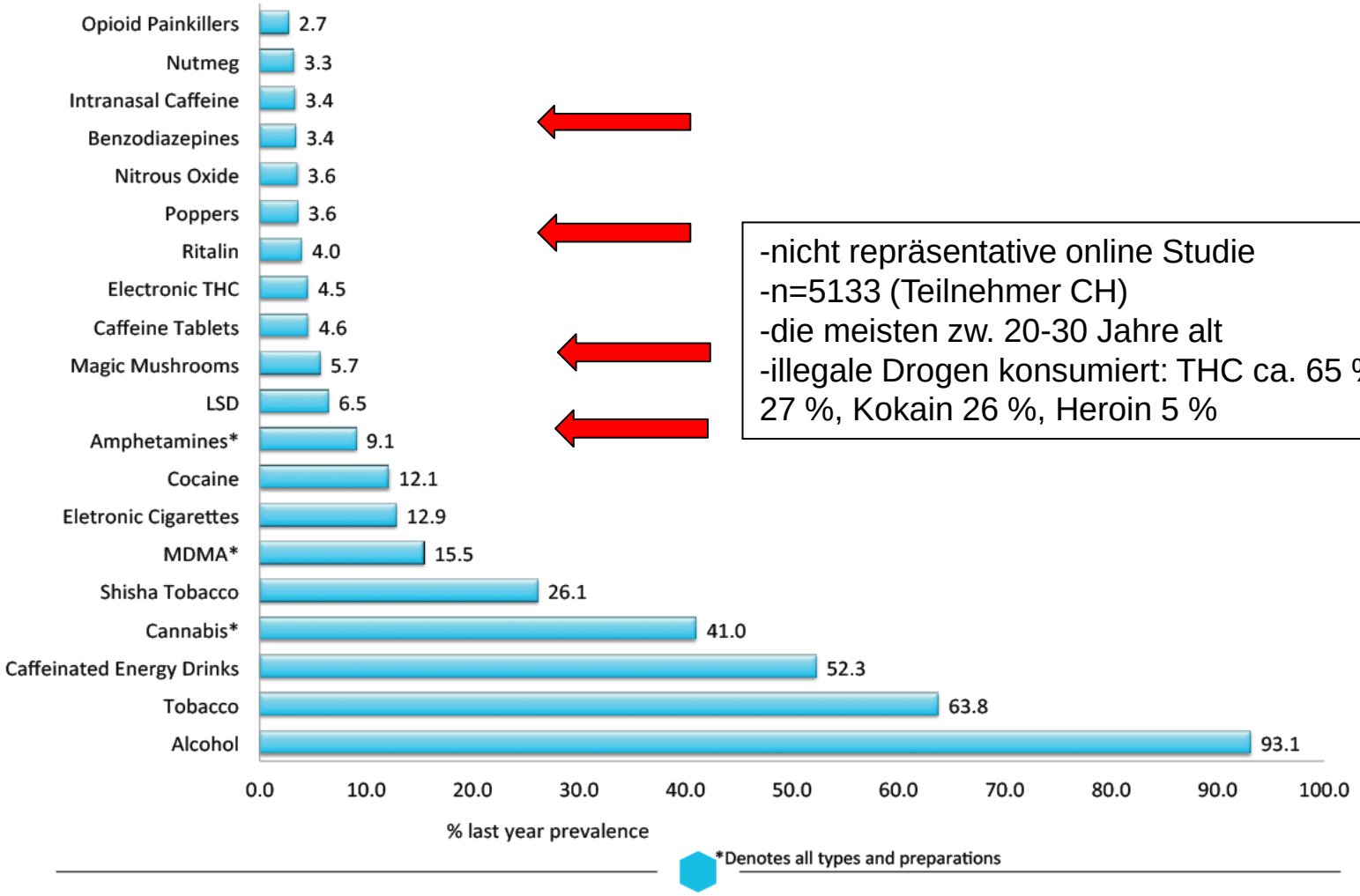


# Zahlen Schweiz

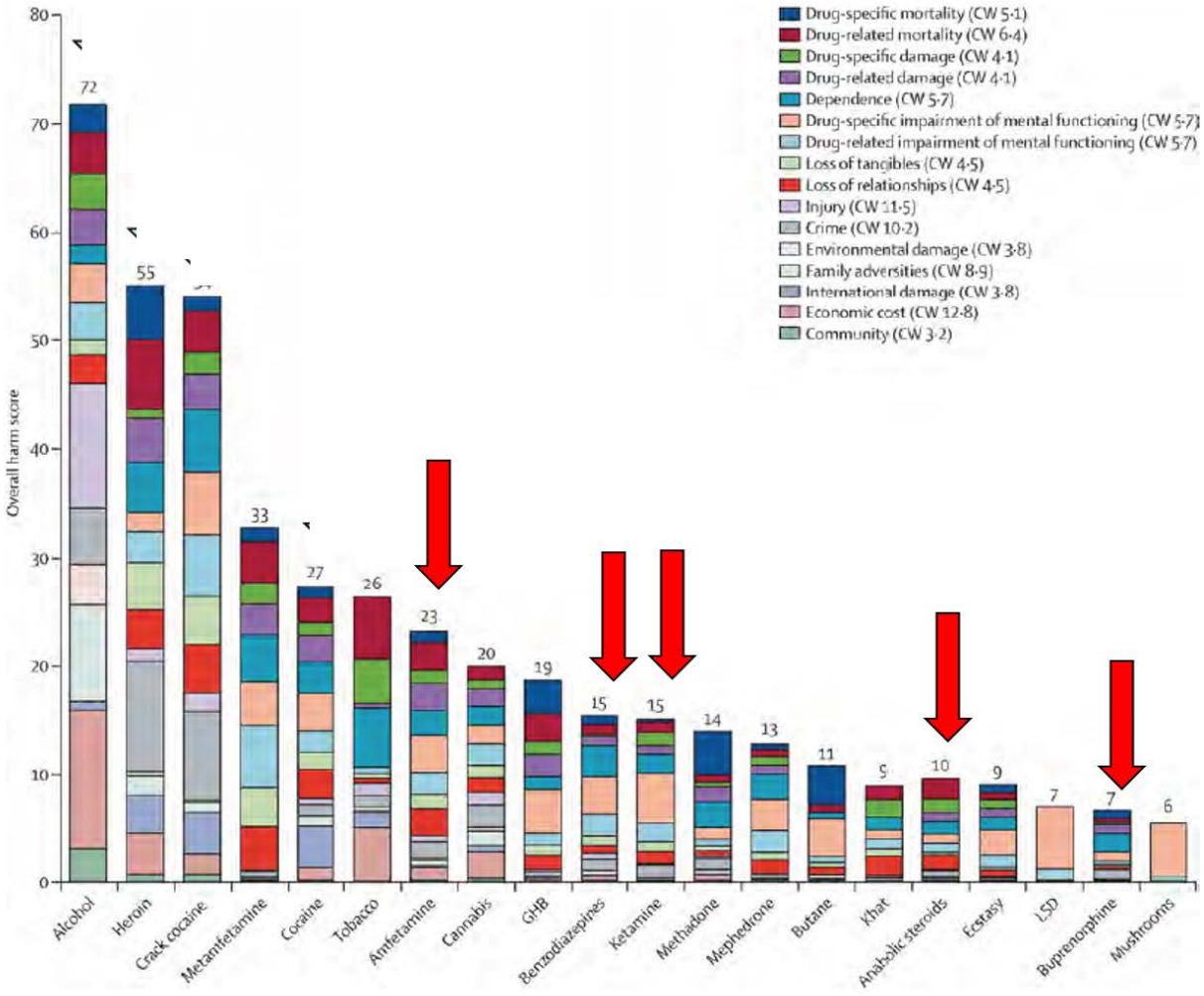
# Top 20 Drugs – Last 12 Months – Switzerland (N=5’133)




-nicht repräsentative online Studie
-n=5133 (Teilnehmer CH)
-die meisten zw. 20-30 Jahre alt
-illegale Drogen konsumiert: THC ca. 65 %, Ecstasy 27 %, Kokain 26 %, Heroin 5 %

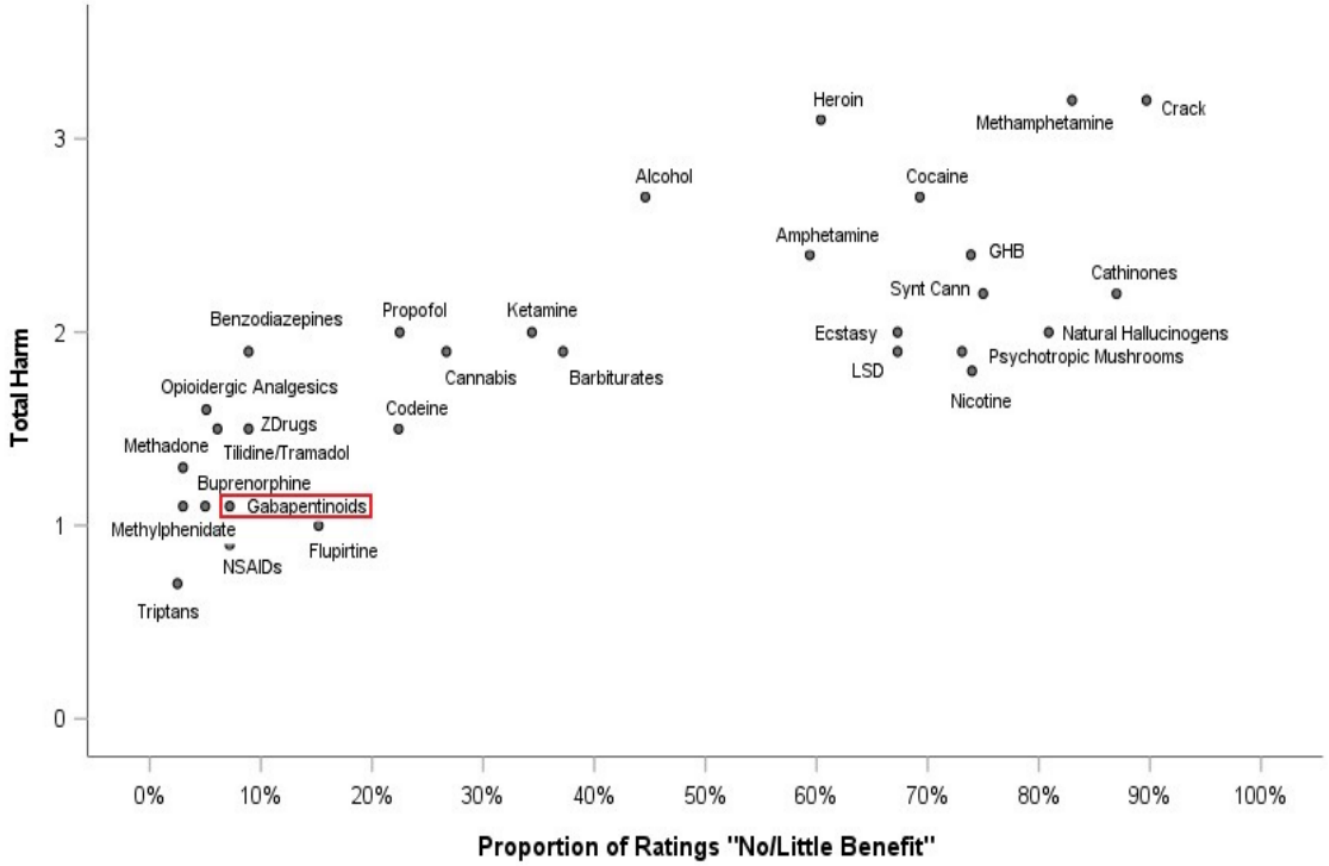
Global Drug Survey GDS2014©

# Schäden durch verschiedene Substanzen




The Lancet 2010; 376:1558-1565

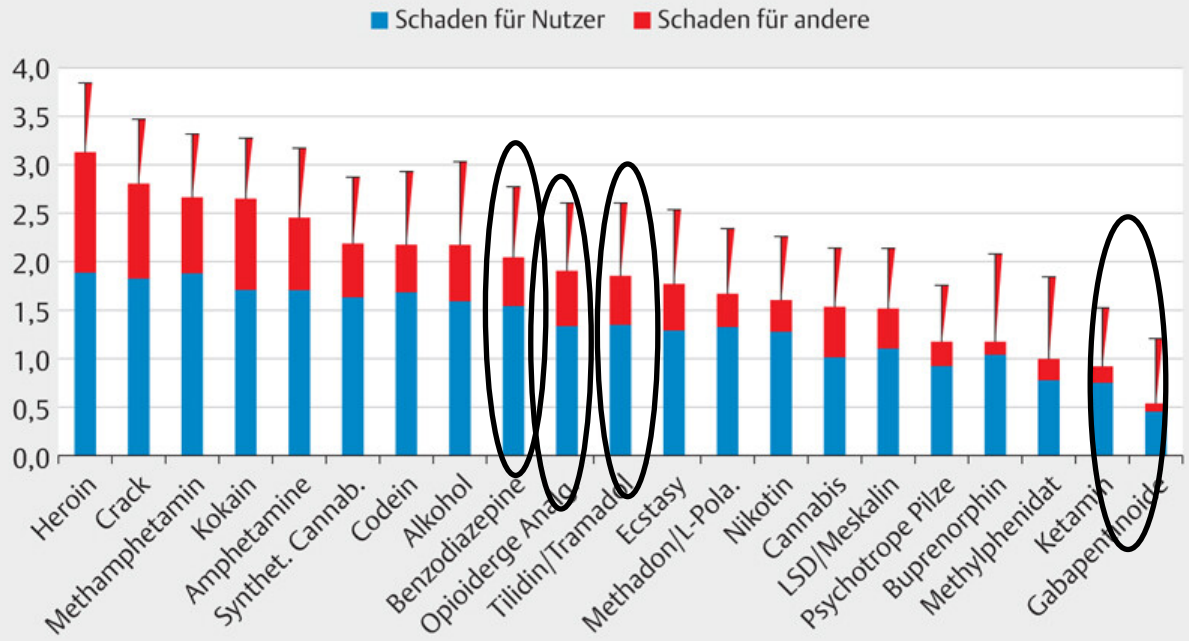
# Expertenrankings (N=101, erfahrene Suchtmediziner)




Streudiagramm mit Bewertung der **durchschnittlichen Gesamtschädlichkeit einer Substanz in Relation zur ihrer durchschnittlichen Nutzenbewertung** (Kategorie: „kein/wenig Nutzen“). Schon optisch grenzen sich zwei Gruppen ab (mit Schwerpunkt im linken unteren und Schwerpunkt im rechten oberen Quadrat).

*Bonnet et al, FNP 2021; Bonnet and McAnally, Drugs 2021*

# Durchschnittliche Gesamtschädlichkeit (Bewertung durch Drogenkonsumenten) von 22 Substanzen




Kanti A, Specka M, Scherbaum N et al. Vergleichende Risiko/Nutzen-Analyse verschiedener psychotroper Substanzen aus der Perspektive deutscher Drogenkonsumenten und Suchtmediziner – Ein Beitrag für die Psychoedukationsarbeit mit Abhängigkeitserkrankten und Restriktions-/Legalisierungsdebatten. Fortschritte der Neurologie · Psychiatrie 2025; 93(01/02): 19 - 35. doi:10.1055/a-1971-9558

# Vergleichende Darstellung von Konsumenten vs. Experten hinsichtlich des Zusammenhangs zwischen der beurteilten Gesamtschädlichkeit der einzelnen Substanzen


Kanti A, Specka M, Scherbaum N et al. Vergleichende Risiko/Nutzen-Analyse verschiedener psychotroper Substanzen aus der Perspektive deutscher Drogenkonsumenten und Suchtmediziner – Ein Beitrag für die Psychoedukationsarbeit mit Abhängigkeitserkrankten und Restriktions-/Legalisierungsdebatten. Fortschritte der Neurologie · Psychiatrie 2025; 93(01/02): 19 - 35. doi:10.1055/a-1971-9558

# Benzodiazepine

| Benzodiazepine im Schweizer Arnzneimittelhandel (43) | | |
|---|---|---|
| **Wirkstoff** | Darreichungsform | Dominierende Halbwertszeit der Substanz/des aktiven Metaboliten in Stunden (h) |
| **Lang wirksame Benzodiazepine** | | |
| **Diazepam** | Oral, parenteral, rektal | 24-48/50-80 |
| **Chlordiazepoxid** | Oral | 10-15/50-90 |
| **Flurazepam** | Oral | 1.5/50-100 |
| **Clobazam** | Oral | 18-42/36-120 |
| **Prazepam** | Oral | -/50-90 |
| **Mittellang wirksame Benzodiazepine** | | |
| **Clonazepam** | Oral, parenteral | 39-40/- |
| **Bromazepam** | Oral | 15-28/- |
| **Lorazepam** | Oral, parenteral | 13-14/- |
| **Alprazolam** | Oral | 12-15/- |
| **Oxazepam** | Oral | 5-15/- |
| **Kurz wirksame Benzodiazepine** | | |
| **Triazolam** | Oral | 2.3/4 |
| **Midazolam** | Oral, parenteral | 1.5-2.5/- |

Bitar et al., Sucht im Alter, 2014 Sep 1;103(18):1071-9, Praxis

# Benzodiazepine in der Schweiz

Addiction

FOR DEBATE

doi:10.1111/j.1360-0443.2010.02933.x

## Agonist substitution—a treatment alternative for high-dose benzodiazepine-dependent patients?

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### ABSTRACT

There is vast evidence for the superiority of agonist treatments (methadone, buprenorphine) over a withdrawal approach in opioid-dependent populations. Little research, however, has been conducted on the same approach for the treatment of high-dose benzodiazepine (BZD) dependence. Even large-scale reviews and meta-analyses discussing treatment strategies for benzodiazepine-dependent patients focus solely upon approaches that aim at achieving abstinence, namely on complete BZD withdrawal. While the types of interventions differ (e.g. gradual benzodiazepine taper with a long or a short half-life benzodiazepine, switching to non-benzodiazepine anxiolytics or prescribing adjunctive medications such as antidepressants or anticonvulsants on an in- or out-patient basis), the common aim of treatment still is total abstinence from benzodiazepines. However, the majority of patients suffering from high-dose BZD dependence do not succeed with long-term abstinence, irrespective of the procedure, and clinicians have been using BZD 'substitution' treatment in such cases for decades. Therefore, we suggest the evaluation of a substitution approach in this group, consisting of maintenance treatment with a slow-onset, long-acting BZD. Advantages of such a procedure may be improved health, less craving, fewer withdrawal complications, reduced anxiety, increased treatment retention, improvements in social functioning and less illegal activity. Cognitive impairments, the most problematic side effects of substitution treatment with benzodiazepines, could possibly be minimized by using an optimal agonist.

RESEARCH

# Benzodiazepine use and risk of dementia: prospective population based study

OPEN ACCESS

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## Abstract

**Objective** To evaluate the association between use of benzodiazepines and incident dementia.

**Design** Prospective, population based study.

**Setting** PAQUID study, France.

**Participants** 1063 men and women (mean age 78.2 years) who were free of dementia and did not start taking benzodiazepines until at least the third year of follow-up.

**Main outcome measures** Incident dementia, confirmed by a neurologist.

**Results** During a 15 year follow-up, 253 incident cases of dementia were confirmed. New use of benzodiazepines was associated with an increased risk of dementia (multivariable adjusted hazard ratio 1.60, 95% confidence interval 1.08 to 2.38). Sensitivity analysis considering the existence of depressive symptoms showed a similar association (hazard ratio 1.62, 1.08 to 2.43). A secondary analysis pooled cohorts of participants who started benzodiazepines during follow-up and evaluated the association with incident dementia. The pooled hazard ratio across the five cohorts of new benzodiazepine users was 1.46 (1.10 to 1.94). Results of a complementary nested case-control study showed that ever use of benzodiazepines was associated with an approximately 50% increase in the risk of dementia (adjusted odds ratio 1.55, 1.24 to 1.95) compared with never users. The results were similar in past users (odds ratio 1.56, 1.23 to 1.98) and recent users (1.48, 0.83 to 2.63) but reached significance only for past users.

**Conclusions** In this prospective population based study, new use of benzodiazepines was associated with increased risk of dementia. The result was robust in pooled analyses across cohorts of new users of benzodiazepines throughout the study and in a complementary case-control study. Considering the extent to which benzodiazepines are prescribed and the number of potential adverse effects of this drug class in the general population, indiscriminate widespread use should be cautioned against.

## Introduction

Primarily indicated for treating the symptoms of anxiety and sleep disorders over short periods,[1] benzodiazepines are widely prescribed in developed countries.[2 3] In France, 30% of people aged 65 years and over use benzodiazepines.[4] They are used by more than 20% of people aged 65 and over in Canada and Spain and by around 15% of those in Australia.[5-7] Benzodiazepine use is less widespread but still high in elderly people in the United States and the United Kingdom.[8 9] Consumption of benzodiazepines is often chronic,[2 10] and many people take them for years despite the existence of good practice guidelines suggesting that the duration should be limited to a few weeks.[1 10-12]

The short term effects of benzodiazepines on cognition are well known.[13-16] They are mediated through an agonist action on receptors of γ aminobutyric acid A, a major inhibitory neurotransmitter in the brain. However, the long term adverse effects of benzodiazepines on cognition are still debated.

Studies focusing on the association between benzodiazepine use and dementia or cognitive decline in elderly people have shown conflicting results.[17] Some found an increased risk of dementia or cognitive impairment in benzodiazepine users,[9 18-21] whereas others were not conclusive or reported a potential protective effect.[22-27] In previous studies, the timing of exposure to benzodiazepines in relation to the outcome event allowed for the possibility of reverse causation. Insomnia, depression, and anxiety (the main indications for prescribing benzodiazepines) can be prodromal symptoms of dementia.[28]

# Fentanyl

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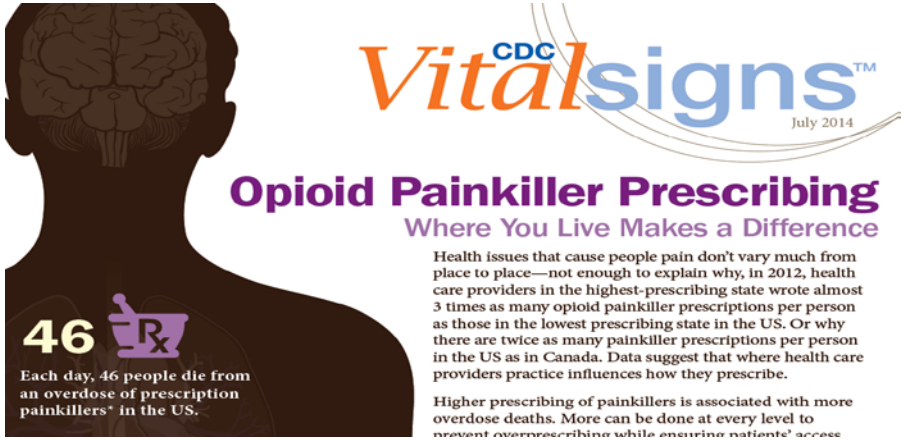
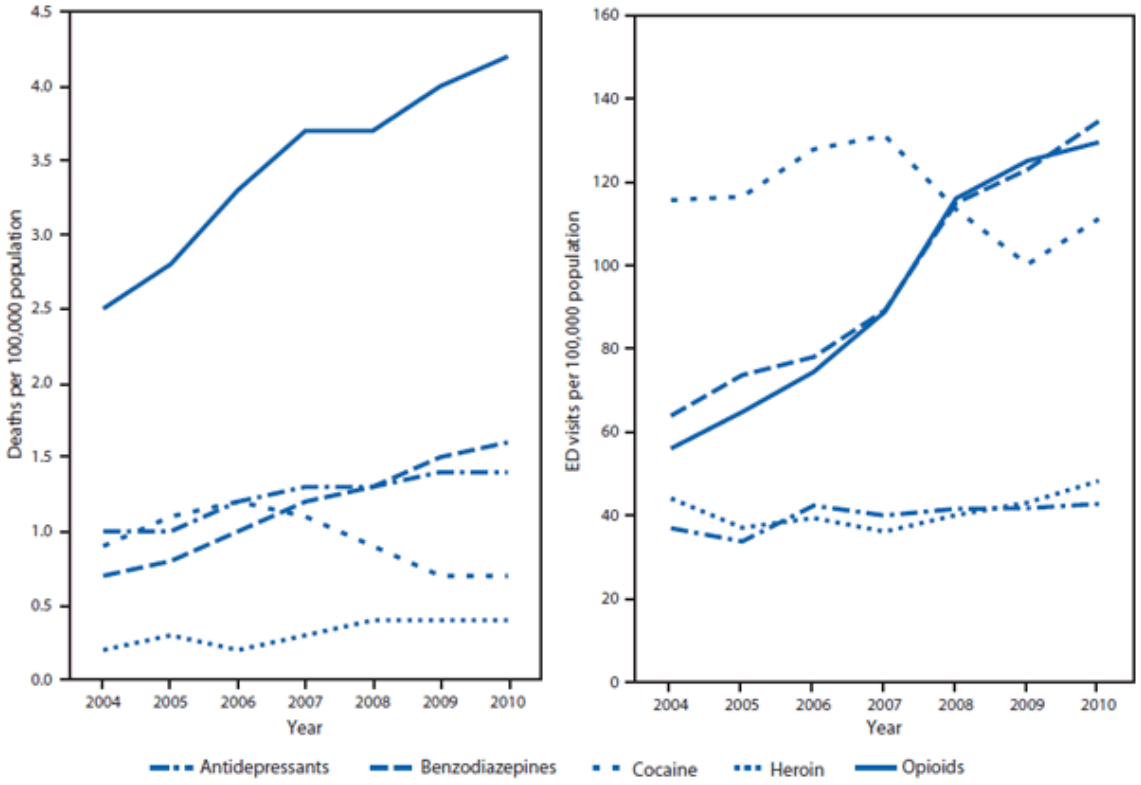
SUCHT UND DROGEN

## Fentanyl wird zunehmend missbraucht

Die Behandlungsprävalenz mit Fentanyl hat sich innerhalb von zehn Jahren mehr als verdreifacht. Gleichzeitig ist das Opioid immer häufiger an Drogentodesfällen beteiligt. Vorsicht ist bei dem Wunsch nach Verordnung von Fentanylpflastern geboten.

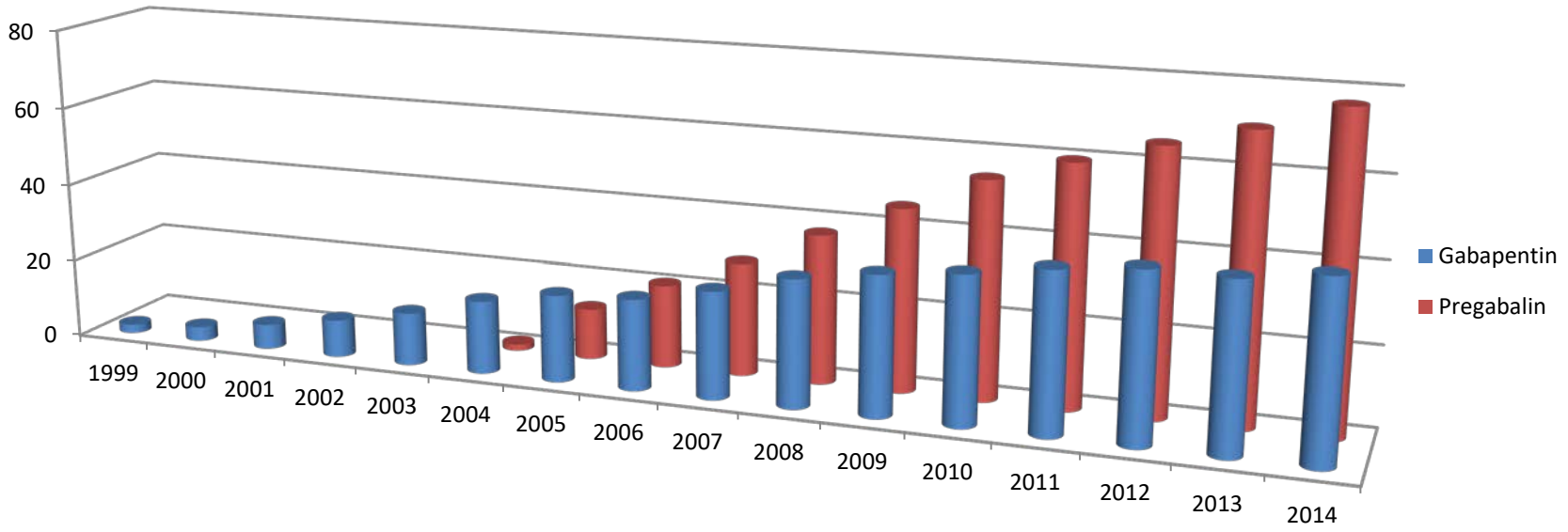


# Drogenbedingte Todesfälle und Notaufnahmen bei Frauen in den USA (2004–2010)




Rates for drug overdose deaths and drug misuse- or abuse-related emergency department (ED) visits among women, by select drug class — National Vital Statistics System and Drug Abuse Warning Network, United States, 2004–2010

# Verordnungen Pregabalin




– Verordnungen (definierte Tagesdosen [DDD] in Millionen) von Gabapentin und Pregabalin zulasten der gesetzlichen Krankenversicherungen gemäss Arzneiverordnungsreport (Schwabeetal, 2016).

# Nebenwirkungen Pregabalin

**Hauptnebenwirkungen**

- psychomotorische Verlangsamung
- Schwankschwindel
- Benommenheit
- Somnolenz
- Dysarthrie
- Ataxie mit entsprechender Sturzgefährdung v.a. alter Menschen
- Entwicklung von schwerkraftabhängigen Hand- oder Fußödemen, die nach Absetzen rasch reversibel sind

– Seltener

- Appetitzunahme
- Erektionsstörung

**Seltene Nebenwirkungen**

- Atemdepression (streng dosisabhängig)
- Verwirrtheit
- Nasopharyngitis
- Abnahme der linksventrikulären Funktion (in der Eindosierungsphase)
- Transaminasenerhöhungen
- Hyperlipidemie
- Suizidalität (meistens Eindosierungsphase)

Pharmacopsychiatry 2011; 44(3): 119
DOI: 10.1055/s-0031-1271689

PDF herunterladen

Letter



# Pregabalin-Induced Suicidal Ideations

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"Ms. L", a 21-year-old woman, was treated in our psychiatric outpatient department. She reported symptoms such as avoidance of social interactions and social inhibition. During subsequent outpatient treatment, we initiated pharmacotherapy with pregabalin (600 mg/day) because of reported anxiety symptoms and diagnosis of generalized anxiety disorder according to DSM-IV (confirmed with the *mini-international neuropsychiatric interview*). The patient reported no significant depressive symptoms. The Hamilton anxiety score (HAMA) before initiation of the pharmacotherapy was 31/56 points. She initially tolerated the medication without any side effects (apart from short-term, moderate fatigue), and reported a significant reduction of anxiety symptoms (HAMA at day 16 of treatment: 10/56). However, 25 days after initiation of pregabalin treatment, she reported suicidal ideations, which had been hitherto unknown to her. She therefore stopped the medication immediately by herself, and the suicidal ideations decreased rapidly. However, after discontinuation of pregabalin, anxiety symptoms increased again. So she took 300 mg pregabalin/day again, suicidal thoughts disappeared completely. Nevertheless, we advised at the next visit to discontinue pregabalin treatment and initiated intermittent anxiolytic therapy with lorazepam.

In conclusion, we found that since increasing the treatment with pregabalin at a dosage of 600 mg the patient experienced suicidal ideations. After reducing the dosage to 300 mg/day suicidal thoughts disappeared completely. We propose a dose-dependent effect of pregabalin to induce suicidal ideations.

# Pregabalin Missbrauch/Abhängigkeit

## Pregabalin Abuse, Dependence, and Withdrawal: A Case Report

To the Editor: Pregabalin is a novel gamma-aminobutyric acid (GABA) analog that is approved for the treatment of neuropathic pain and partial-onset seizures. While there are reports about the addictive potential of another novel antiepileptic drug (gabapentin [1, 2]), we present the first case of pregabalin dependence.

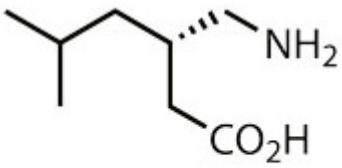
"Mr. B" was a 47-year-old man who asked for admission to the department for addiction medicine. At the time of his admission, he was consuming 25 capsules (equivalent to 7,500 mg) of pregabalin per day as well as alcohol and cannabis at irregular intervals. Attempting to wean himself off pregabalin, he developed vegetative withdrawal symptoms, including sweating, unrest, arterial hypertension, tremor, and craving for pregabalin. He fulfilled all seven DSM-IV dependence criteria. The patient reported a history of alcohol and cannabis abuse as well as heroin dependence but had been abstinent from heroin since he was released from prison 7 years ago. Two years ago, a friend suffering from neuropathic pain recommended that he use pregabalin, which in high doses would induce "very good feelings." Mr. B took some pregabalin capsules and experienced euphoric feelings. In the following weeks, his pregabalin use became regular, and he developed tolerance and withdrawal symptoms, which is why he finally increased the dosage to 25 capsules per day.

After admission to the unit, the patient's withdrawal symptoms were only insufficiently controlled by benzodiazepines. On the first day, we had to add pregabalin in high doses to achieve significant clinical improvement. His blood analysis immediately after admission showed a pregabalin level of 29 mg/l (therapeutic range: 0.5–16 mg/l). A breathalyzer test for alcohol was negative, urine drug test was positive for cannabis, and the patient stated that alcohol withdrawal symptoms were unknown to him. Standard laboratory, ECG, cranial magnetic resonance imaging, and abdominal ultrasound results were without pathological findings. An EEG revealed general alterations, probably because of the pregabalin's effect. Consecutively, pregabalin capsules were slowly reduced by two capsules a day. Within 12 days, Mr. B's plasma levels decreased from 29 mg/l to 9.8 mg/l. He repeatedly complained of a heavy craving for pregabalin, discontinued the treatment prematurely, and relapsed immediately at home by taking 20 capsules of the drug. Further attempts to motivate him for detoxification in our outpatient unit failed, and he continued taking up to 20 capsules per day.

Pregabalin is a GABA-analog that selectively binds to the alpha$_2$ delta subunit of voltage-gated calcium channels. It inhibits the release of excitatory neurotransmitters and increases neuronal GABA levels. Like some other compounds that modulate GABA-ergic neurotransmission, pregabalin might have a potential for abuse. Our patient had a history of drug addiction, which may be important in the reward effect of pregabalin. We therefore recommend being especially cautious when using pregabalin to treat patients with a history of drug or alcohol dependence.

*Reprints are not available; however, Letters to the Editor*

*Am J Psychiatry 167:7, July 2010*




Pregabalin

**References**

1. Pittenger C, Desan PH: Gabapentin abuse, and delirium tremens upon gabapentin withdrawal. J Clin Psychiatry 2007; 68:483–484
2. Vicctorio-Vigneau C, Guerlais M, Jolliet P: Abuse, dependency and withdrawal with gabapentin: a first case report. Pharmacopsy 2007; 40:43–44

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DOI 10.1007/s00228-013-1578-5

CLINICAL TRIAL

## Pregabalin abuse among opiate addicted patients

**Martin Grosshans · Tagrid Lemenager · Christian Vollmert · Nina Kaemmerer · Rupert Schreiner · Jochen Mutschler · Xenija Wagner · Falk Kiefer · Derik Hermann**

Received: 13 June 2013 / Accepted: 11 August 2013 /Published online: 30 August 2013


**Abstract**
*Purpose* Pregabalin is a novel GABA-analogue approved for the treatment of partial onset seizures, neuropathic pain, and general anxiety disorder. Pregabalin has been classified as a Schedule V drug with a low risk of inflicting abuse or addiction. However, some publications have indicated that pregabalin may have a potential for abuse among patients with past or current opiate addiction. Thus, we hypothesized that pregabalin might be abused by patients who were undergoing an opiate replacement therapy and never had an indication for taking pregabalin on medical grounds.
*Methods* Urine specimens from 124 patients with opiate dependency syndrome and from 111 patients with other addiction disorders (alcohol, benzodiazepines, cannabis, amphetamines) were screened for pregabalin by means of a mass spectrometer analysis.
*Results* We found 12.1 % of all urine specimens from patients with opiate addiction to be positive for pregabalin. None of the patients concerned had a medical indication for using pregabalin. In the control group, 2.7 % of the patients were tested positively for pregabalin, due to their taking it regularly for chronic pain or general anxiety.
*Conclusions* Our data suggest that pregabalin is liable to be abused among individuals with opiate dependency syndrome Thus, vigilance and caution are called for when patients with a past or current opiate dependency are exposed to treatment with pregabalin.

**Keywords** Pregabalin · Abuse · Opiate replacement therapy · Urine analysis · Mass spectrometry

**Introduction**

Pregabalin is a novel gamma-aminobutyric acid (GABA) analogue that increases neuronal GABA levels by selectively binding to the alpha2delta subunits of voltage-gated calcium channels and inhibiting the release of excitatory neurotransmitters like glutamate, noradrenaline, and substance P. Pregabalin has been approved for the treatment of partial-onset seizures, neuropathic pain, fibromyalgia, and general anxiety disorders [1–4]. The efficacy of pregabalin in chronic pain conditions like diabetic neuropathy, postherpetic neuralgia and central neuropathic pain has been demonstrated by a Cochrane database review of double-blind randomized con-

# Pregabalin Missbrauch in der Schweiz

- N=109
- Querschnittserhebung
- Substitution: 70 Methadon, 20 Morphin, 19 Buprenorphin
- Haaranalysen auf Pregabalin
- **Ergebnis: 0 % positiv!**

*Mutschler et al, J Clin Psychiatry, 2016;77(9)*

# Pregabalin Use Among Opioid-Addicted Patients in Switzerland

Jochen Mutschler, MD, Dr; Salome Gastberger; Markus R. Baumgartner, Dr; Martin Grosshans, Dr, MD; Erich Seifritz, Prof Dr, MD; Boris B. Quednow, Prof Dr; Marcus Herdener, MD, Dr

J Clin Psychiatry 2016;77(9):1202-1203

In addition to an increased incidence of deaths due to opioid overdose, a recent postmortem study[4] of drug users found blood pregabalin concentrations at lethal poisoning levels in 19.1% of cases (n = 316), 91.4% of whom showed concomitant opioid use. This finding accords with previous reports of pregabalin abuse among patients in OST,[5,6] with a recent German study reporting that 15 of 124 patients (12.1%) in OST tested positive for urinary pregabalin.[5] One explanation for the increase in pregabalin abuse, particularly among patients in OST, might be related to attempts by heroin addicts to alleviate symptoms of opiate withdrawal syndrome.[7]

We collected self-report measures and compared these with hair assays to verify self-reports. Demographic data, medication, and self-reported drug and medication use were assessed. Pregabalin use was quantified using 3-month hair toxicology analysis. (A Shimadzu Prominence high performance liquid chromatography system [Shimadzu, Duisburg, Germany] and a Sciex QTrap 5500 mass spectrometer [Sciex, Darmstadt, Germany] were used for the analysis.) Results of the 3-month hair toxicology analyses were concordant with pregabalin self-reporting in 100% of cases (n = 109)—none of the participants reported pregabalin use and pregabalin was undetectable in all samples. These findings contrast sharply with reports of pregabalin misuse by opioid-dependent patients in other countries. Possible explanations for lower rates of pregabalin abuse in Switzerland include (*a*) easy accessibility to substance abuse treatment for individuals with an opiate use disorder (most users are estimated to be in treatment)[10,11] and (*b*) taking a course of other drugs or medications does not usually lead to users' exclusion from treatment.

# Pregabalinmissbrauch und -Abhängigkeit in verschiedenen europäischen Ländern im Hinblick auf deren Substitutionspolitik

## Pregabalin abuse and dependence in various European countries: Association with substitution policies

Autoren
Dominique Kuhn[1], Thomas Jörg Müller[2], Jochen Mutschler[3]

**Resultate** Der Missbrauch und die Abhängigkeit von Pregabalin haben seit der Markteinführung stark zugenommen. Es zeigte sich, dass ein solitärer Missbrauch von Pregabalin selten ist. Meist wird Pregabalin mit anderen Substanzen kombiniert, was auch ein Prädiktor für den Missbrauch von Pregabalin ist. Die Gründe für die nicht verschriebene Einnahme von Pregabalin sind unterschiedlich; es wird einerseits zur Steigerung der psychotropen Wirkung, andererseits zur Linderung der Entzugssymptome eingesetzt. Der Beikonsum von Pregabalin ist nicht ungefährlich, er führt zu tödlichen Überdosierungen oder einem Anstieg der Gesamtmortalität bei zusätzlicher Gabe von Pregabalin zu Methadon. Des Weiteren konnte in Schweden bei 28 % der tödlichen Intoxikationen von Drogenabhängigen Pregabalin nachgewiesen werden. Es sind vor allem junge Personen betroffen. In Ländern mit restriktiven Substitutionsprogrammen konnte der Missbrauch von Pregabalin nachgewiesen werden, während in Ländern mit liberaler Drogenpolitik kein Missbrauch festgestellt werden konnte. Die Datenlage in der Schweiz mit einem liberalen Substitutionsprogramm beruht jedoch nur auf einer einzigen Studie, weshalb der Pregabalinkonsum in liberalen Substitutionsprogrammen nicht abschließend geklärt werden kann.

**Schlussfolgerungen** Es scheint einen Zusammenhang zwischen der Drogenpolitik des Landes und der illegalen Einnahme von Pregabalin bei Personen in einem Substitutionsprogramm zu geben. Des Weiteren gibt es Risikofaktoren und Risikogruppen für die Abhängigkeit und den Missbrauch von Pregabalin.

Thieme



# Pregabalinmissbrauch und -Abhängigkeit in verschiedenen europäischen Ländern im Hinblick auf deren Substitutionspolitik

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CASE REPORT

NEUROPSYCHOPHARMACOLOGY REPORTS

WILEY



# Pregabalin withdrawal in patients without psychiatric disorders taking a regular dose of pregabalin: A case series and literature review

Hayahito Ishikawa[1] | Masahiro Takeshima[2] | Hiroyasu Ishikawa[2] | Naoko Ayabe[3] | Hidenobu Ohta[2] | Kazuo Mishima[2]

| | Withdrawal symptoms | | |
|---|---|---|---|
| Onset of symptoms after discontinuation of PGB | Psychopathologic symptoms | Vegetative symptoms | Neurologic and physical complications |
| 48 hours | Insomnia, dysphoria, delusions, visual hallucinations, and the idea of harm | ND | ND |
| ND | Anxiety, fear, insomnia, suicidal ideations, and feeling of going crazy. | Tremors, dyspnea, palpitations, and dizziness. | Chest pain, extreme weakness of legs, and aches. |
| 4 days | ND | ND | Tonic-clonic seizure |
| ND | Asthenia, insomnia, and suicidal ideas | Tremors, sweating | ND |
| 10 days | Psychomotor agitation and craving | Hypertension, tachycardia, and tremor | ND |
| 30 hours | Visual and auditory hallucinations, alexia, distorted color perception, delirium, terror | ND | Nausea, headache, "imbalance," |
| 2 days | Insomnia, anxiety, and restlessness | Palpitations | difficulty in breathing, and loss of appetite |
| 7 days | Insomnia, depressed mood, anxiety, restlessness, suicidal ideation, and psychological discomfort | Tremor, cold sweats, lacrimation | Physical discomfort, headache, appetite loss, dyspnea, and epigastric discomfort |
| 1 day | Insomnia and depressed mood | None | Chest tightness, suffocation, chills, and loss of appetite |

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# Pregabalin use in forensic hospitals and prisons in German speaking countries—a survey study of physicians

Michal Novotny[1,2]*, Jan Bulla[3], Daniela Hubl[4], Sebastian Karl Maximilian Fischer[5], Martin Grosshans[6], Andreas Gutzeit[7,8,9], Oliver Bilke-Hentsch[5], Erich Seifritz[10] and Jochen Mutschler[5]

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**Background:** Pregabalin is a gamma-aminobutyric acid (GABA) analog that was approved in the EU in 2004 for the treatment of neuropathic pain, generalized anxiety disorder and epilepsy. Since its introduction, pregabalin abuse and misuse has increased significantly. In Switzerland, clinical reports suggest that pregabalin misuse is common among patients in forensic hospitals and prisons. However, data on pregabalin use is scarce, especially in these settings. Therefore, we conducted a study to explore patterns of pregabalin use among prison and forensic patients.

**Methods:** We used a questionnaire to survey physicians working in prison and forensic medicine in German-speaking countries. A total of 131 responses were received.

**Results:** According to the physicians' subjective assessment, 82.5% of them had observed a recent increase in pregabalin use by their patients and 89.1% of them reported that their patients requested pregabalin without a clear medical indication. Patients misusing pregabalin in combination with other illicit substances were observed by 93.3% of the physicians surveyed. According to 73.5% of the physicians surveyed, they had already encountered patients on pregabalin doses of more than 600 mg/day (the maximum recommended daily dose); the highest dose reported was 4,200 mg/day. According to 85.0% of physicians surveyed, they have observed patients experiencing withdrawal symptoms from pregabalin, with the most commonly reported symptoms being displeasure and high aggression. Regarding the nationality of pregabalin-misusing patients, 58.3% of the interviewed physicians reported to be rather in contact with foreign patients, mainly from Northwest Africa (Maghreb). Only 45.0% of the surveyed physicians prescribe pregabalin. Among patients who developed behavioral problems while taking pregabalin, none of the physicians (0.0%) showed a tendency to continue pregabalin at the same dose; all respondents chose to reduce/substitute/discontinue.

**Conclusion:** Our study has provided confirmatory evidence that the use of pregabalin presents a significant issue in forensic and prison medicine across German-speaking countries. Prescribing pregabalin in this field can compound use disorder problems and exacerbate challenges in daily life for those in forensic institutions or prisons. It is necessary that all physicians who prescribe pregabalin are clearly informed about the management (including the risks) of this drug.

- n=131 Ärzte
- 82.5% sehen erhöhten Konsum von Pregabalin
- Knapp 90% sehen Pregabalin Konsum ohne klare medizinische Indikation
- >93% im Zusammenhang mit illegalen Drogen
- >73% sehen Dosierungen über der Compendium Höchstdosis
- 85% sehen Entzugssymptome bei ihren Patienten
- Häufung von Migranten aus Maghreb-Staaten
- 45% der Befragten verschreiben Pregabalin
- Alle streben Reduktion der Dosierungen an

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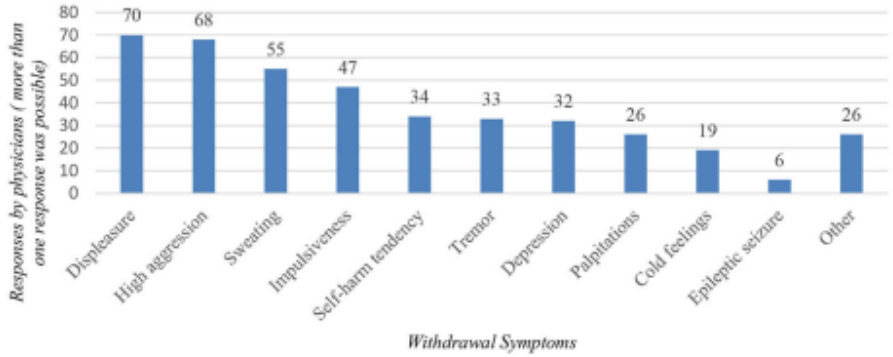


FIGURE 1
Withdrawal symptoms from pregabalin observed by interviewed physicians.

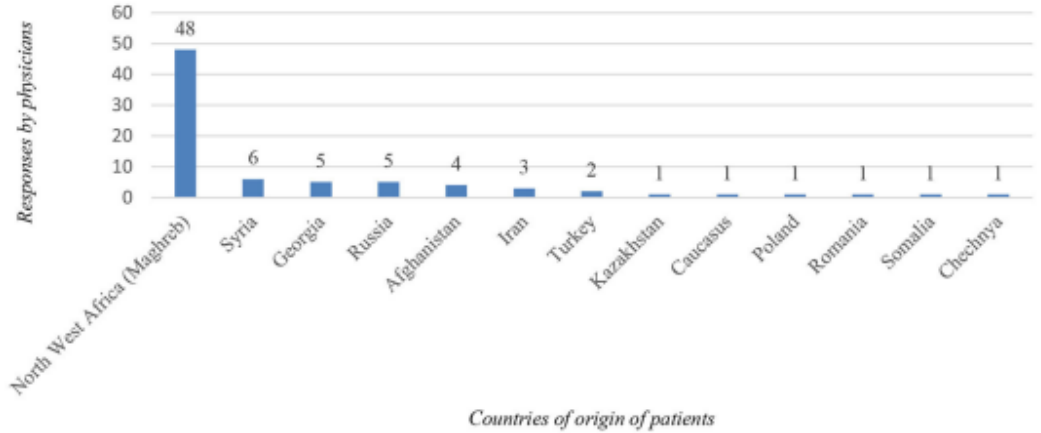


FIGURE 2
Illustration of the countries from which, according to the interviewed physicians, most of the foreign patients originate.

# Zusammenfassung

- Gabapentinoide – machen körperlich abhängig (Entzugssyndrom, Toleranz) wie viele andere Medikamente auch.

- Meist in Kombination mit anderer Substanzabhängigkeit, meistens Opiatabhängigkeit, in Substitution oder Polytoxikomanie.

- Erhöhtes Risiko/Vorkommen bei Migranten aus Nordafrika (Gründe?) und in Gefängnissen + Forensiken.

- Weitere Forschung dringend nötig.

# Fragen ? Diskussion?
# Vielen Dank für die Aufmerksamkeit…!