

Recreational Cannabis from the Pharmacy?

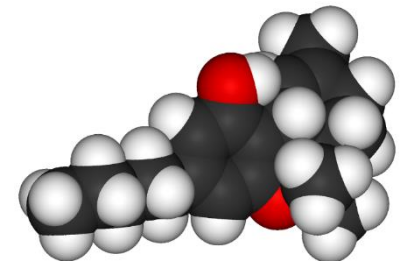
The Safer Cannabis - Research In Pharmacies Trial (SCRIPT)

Professor Matthias Egger MD
Institute für Sozial- und Präventivmedizin (ISPM)
University of Bern

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^b
UNIVERSITÄT
BERN

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Background

- Cannabis by far the most consumed illegal substance in Switzerland
- About a third of population aged >15 years has consumed cannabis
- About 3% are current consumers (220,000 people)
- About 10% of 20 to 24 years old men are current consumers
- French-speaking > German speaking > Italian speaking region
- About a third of current consumers has «problematic consumption» (CUDIT >8)



Straftaten gegen das Betäubungsmittelgesetz

	2013	2014	2015	2016	2017
Total Widerhandlungen gegen das BetmG²⁶	97 289	80 986	86 128	83 268	80 074
Total Besitz/Sicherstellung	40 524	31 195	33 539	32 942	30 455
Besitz/Sicherstellung Übertretung	30 226	22 009	23 588	24 056	22 305
Besitz/Sicherstellung leichter Fall	8 803	7 731	8 184	7 076	6 637
Besitz/Sicherstellung schwerer Fall	1 495	1 455	1 767	1 810	1 513
Total Konsum	45 905	37 602	37 799	38 519	37 488
Total Anbau/Herstellung	1 476	1 759	2 551	1 461	1 534
Anbau/Herstellung Übertretung	484	642	757	492	630
Anbau/Herstellung leichter Fall	818	930	1 650	798	754
Anbau/Herstellung schwerer Fall	174	187	144	171	150
Total Handel	7 718	8 629	8 234	8 442	8 256
Handel leichter Fall	5 178	6 115	5 752	5 852	5 837
Handel schwerer Fall	2 540	2 514	2 482	2 590	2 419
Total Schmuggel	1 666	1 801	4 005	1 904	2 341
Einfuhr, Ausfuhr, Transit leichter Fall	1 347	1 546	3 702	1 647	2 070
Einfuhr, Ausfuhr, Transit schwerer Fall	319	255	303	257	271

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A GROWING SOLUTION TO THE PROBLEMS OF PROHIBITION



AGE REGULATION

1

ADULT
& MEDICAL USE
ONLY

18

Controlling the sale of
cannabis by requiring an
age limit will reduce youth
accessibility.

No advertising to the
public. CSC's are for
existing consumers in
a trusted network.

PRIVATE MEMBERSHIP

2

JOIN A
CLUB THROUGH
A FRIEND



QUALITY CONTROL

3

TESTING
CANNABINOID
PROFILES



Consumer and medical
products require standards.
No wet, mouldy or incorrectly
harvested product.

CSC's avoid commercial
grows & use a Fair Trade
model to take the excessive
profits out of cannabis.

ANTI CRIME

4

CLOSED
LOOP SHARING
& NON-PROFIT



INDUSTRY JOBS

5

(CREATE
TAXABLE JOBS
NOT PRISONERS



Create thousands of new
jobs spanning dozens of
sectors paying income tax.
Instead of criminalisation.



www.ukcsc.co.uk

Colorado Governor Is Happy With Marijuana Legalization

Culture

10.06.15

0

By: [HERB](#)

**COLORADO SELLS \$19 MILLION IN
CANNABIS IN MARCH**

**\$1.9 MILLION GOES TO SCHOOLS AND
CRIME DOWN 10%**

Photo credit: Daily Camera

**JOIN THE #1 SOURCE FOR
EVERYTHING CANNABIS**

Name:

Email:

Sign me up!

*"The authoritative volume on
how to cook with cannabis"*

- Michael Ruhlman



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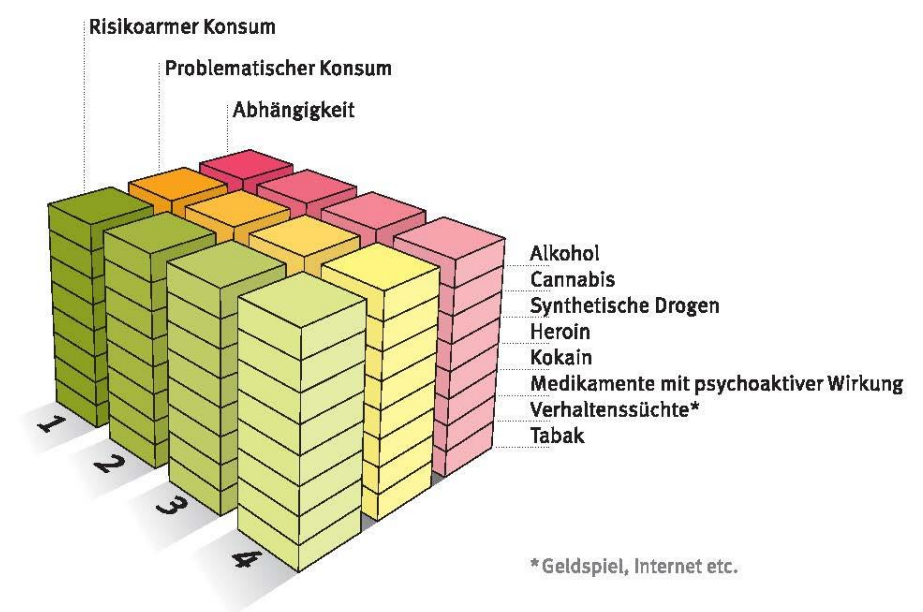


RATED 5 STARS ON
amazon

Understanding Swiss Drug Policy Change and the Introduction of Heroin Maintenance Treatment

Riaz Khan^a Yasser Khazaal^a Gabriel Thorens^a Daniele Zullino^a
Ambros Uchtenhagen^b

^aDivision of Addictology, Department of Mental Health and Psychiatry, University Hospitals Geneva, Geneva,
^bSwiss Research Institute for Public Health and Addiction at Zurich University, Zurich, Switzerland



- 1 **Prävention:** Gesundheitsschutz, Gesundheitsförderung und Früherkennung
- 2 **Therapie:** Verschiedene Behandlungsoptionen, soziale Integration
- 3 **Schadensminderung:** Individuelle und gesellschaftliche Schadensminderung
- 4 **Repression:** Marktregulierung und Jugendschutz

“After a formal consultation ..., the majority of cantons, parties, and expert organisations expressed acceptance of the medical prescription of heroin as an option for therapy and harm reduction practice.”

Revising the Cannabis Use Disorders Identification Test (CUDIT) by means of Item Response Theory

BEATRICE ANNAHEIM,¹ THOMAS J. SCOTTO² & GERHARD GMEL^{1, 3}

¹ Swiss Institute for the Prevention of Alcohol and Drug Problems, Lausanne, Switzerland

² Department of Government, University of Essex, Colchester, UK

³ Alcohol Treatment Centre, Lausanne University Hospital, Switzerland



Items

- 1 frequency of use
- 2 usual hours being stoned
- 3 stoned for 6 or more hours
- 4 not able to stop
- 5 failed to do what expected
- 6 morning use
- 7 guilt/remorse
- 8 memory/concentration problems
- 9 injuries
- 10 concerned others
- 11 neglected social environment
- 12 missed out leisure time activities
- 13 difficulties at school or work
- 14 motives for using cannabis

Why it is probably too soon to assess the public health effects of legalisation of recreational cannabis use in the USA

Wayne Hall, Michael Lynskey

The citizens of four US states—Alaska, Colorado, Oregon, and Washington—have voted to legalise the sale of cannabis to adults for recreational purposes, and more states look likely to follow. Experience with alcohol and tobacco suggests that a for-profit legal cannabis industry will increase use by making cannabis more socially acceptable to use, making it more readily available at a cheaper price, and increasing the number of users and frequency of their use. We argue that it is too early to see the full effects of legalised cannabis policies on use and harm because several factors could delay the full commercialisation of a legal cannabis industry. These factors include restrictions on various licensed producers and sellers, and legal conflicts between Federal and State laws that might provide a brake on the speed and scale of commercialisation in states that have legalised cannabis. Any increases in cannabis use and harm could be minimised if governments introduced public health policies that limited the promotional activities of a legal cannabis industry, restricted cannabis availability to adults, and maintained cannabis prices at a substantial fraction of the black market price. So far, no states have chosen to implement these policies.



Lancet Psychiatry 2016

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June 28, 2016

[http://dx.doi.org/10.1016/S2215-0366\(16\)30071-1](http://dx.doi.org/10.1016/S2215-0366(16)30071-1)

See Online/Comment

[http://dx.doi.org/10.1016/S2215-0366\(16\)30137-1](http://dx.doi.org/10.1016/S2215-0366(16)30137-1)

Centre for Youth Subs

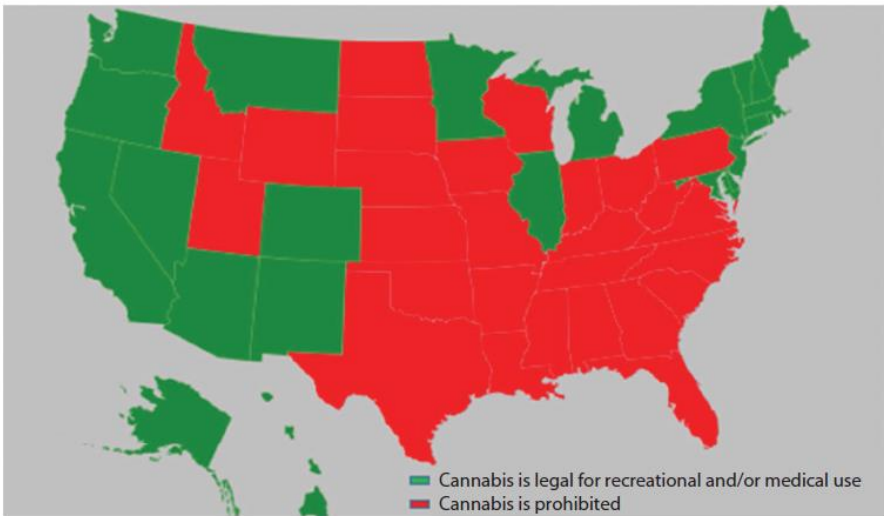
Abuse Research, Univ

Queensland, Herston,

Australia (Prof W Hall PhD); and

National Addiction Centre,

Figure 1. Legalisation status of cannabis use in the USA in 2015.



ORIGINAL RESEARCH

Exploring the association of legalisation status of cannabis with problematic cannabis use and impulsivity in the USA

Louise Destrée BPsych (Hons)¹, Danielle Amiet BPsych (Hons)¹, Adrian Carter PhD¹, Rico Lee PhD¹, Valentina Lorenzetti PhD¹, Rebecca Segrave PhD¹, George Youssef PhD², Nadia Solowij PhD³, Murat Yücel PhD¹

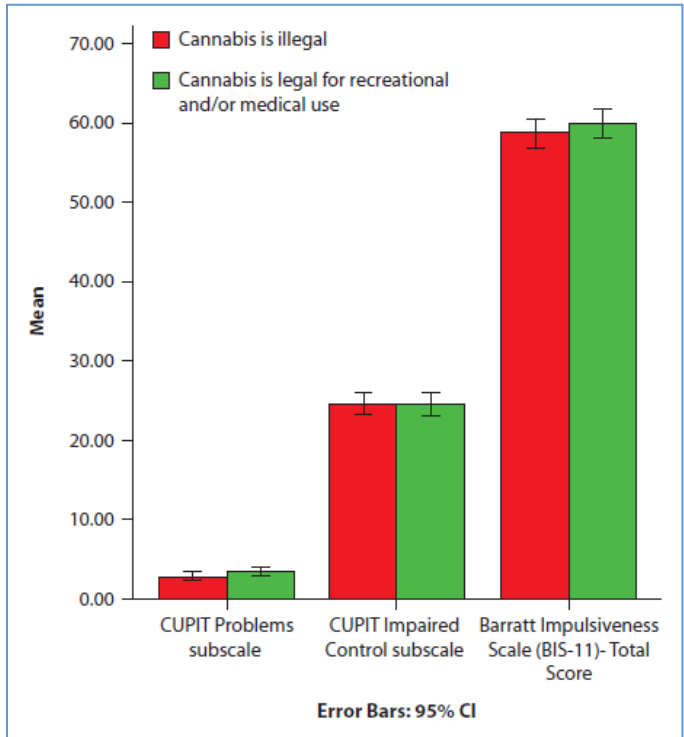
¹Brain & Mental Health Laboratory, Monash Institute of Cognitive & Clinical Neuroscience, and School of Psychological Sciences, Monash University, Melbourne, Victoria, Australia; ²Cognitive Neuroscience Unit, School of Psychology, Deakin University,

ACCESS ONLINE

JAMA Psychiatry | Original Investigation

US Adult Illicit Cannabis Use, Cannabis Use Disorder, and Medical Marijuana Laws 1991-1992 to 2012-2013

Deborah S. Hasin, PhD; Aaron L. Sarvet, MPH; Magdalena Cerdá, DrPH; Katherine M. Keyes, PhD; Malka Stohl, MS; Sandro Galea, MD, DrPH; Melanie M. Wall, PhD



The Safer Cannabis - Research In Pharmacies Trial (SCRIPT)

- Intervention is offer of purchase of cannabis in pharmacies
- Non-inferiority trial
- Clearly defined inclusion criteria
- Coupled with preventive interventions
- Coordination with studies in other cities
- Approved by Cantonal Ethics Committee
- Funded
- Not approved by Federal Office of Public Health



SCRIPT

The Safer Cannabis - Research In Pharmacies Trial (SCRIPT)

- Overarching aim:
- To evaluate whether the offer of regulated sale of cannabis in pharmacies in several Swiss cities is taken up by consumers
- To evaluate how the regulated sale of cannabis in pharmacies influences the consumption



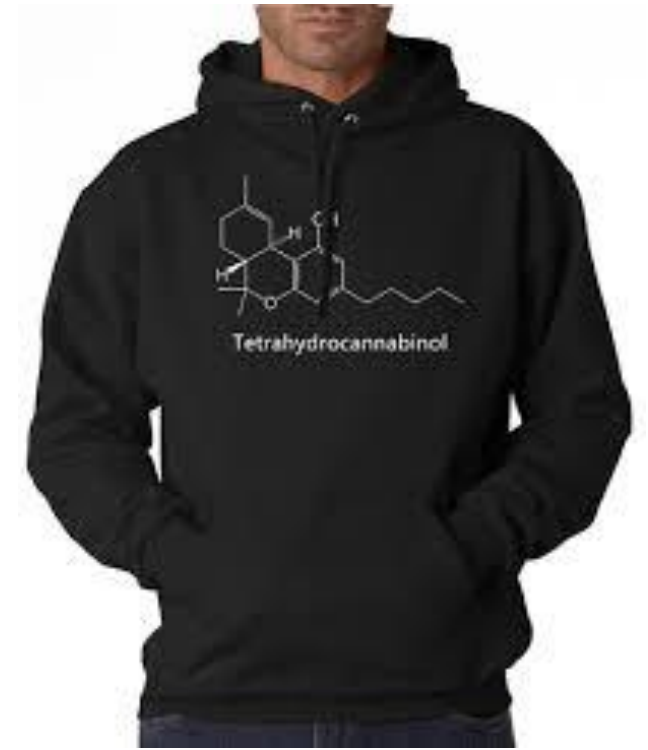
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Inclusion and exclusion criteria

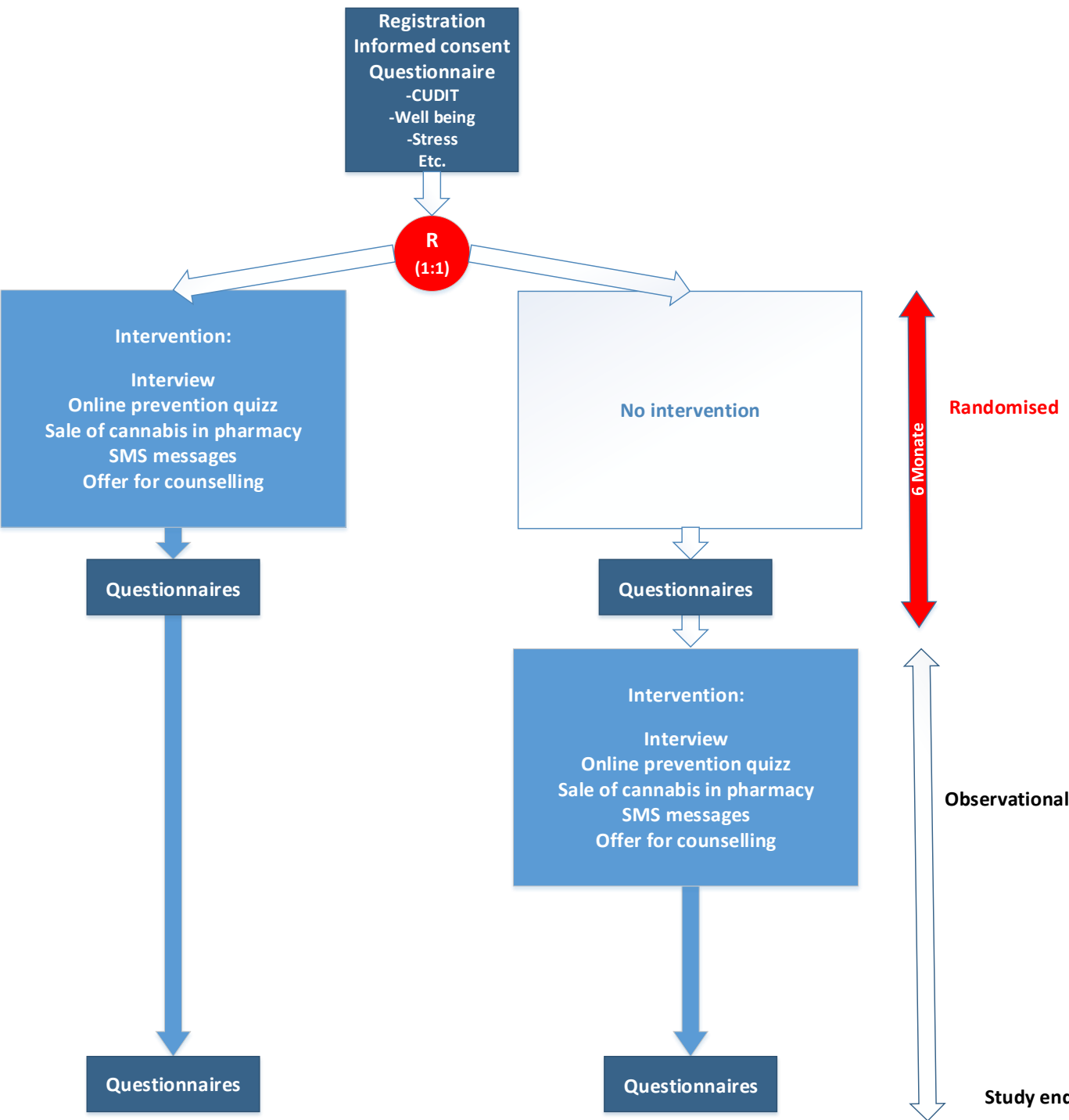
- 18 years or older
 - Regular consumption of cannabis
 - Resident of the participating city
 - Informed consent
-
- Pregnant and breast-feeding women
 - Individuals in mental health care / treated for mental health problems



SCRIPT



Study design



SCRIPT



SCRIPT

Phase 1:
Preparation

Phase 2:
Recruitment
Follow-up

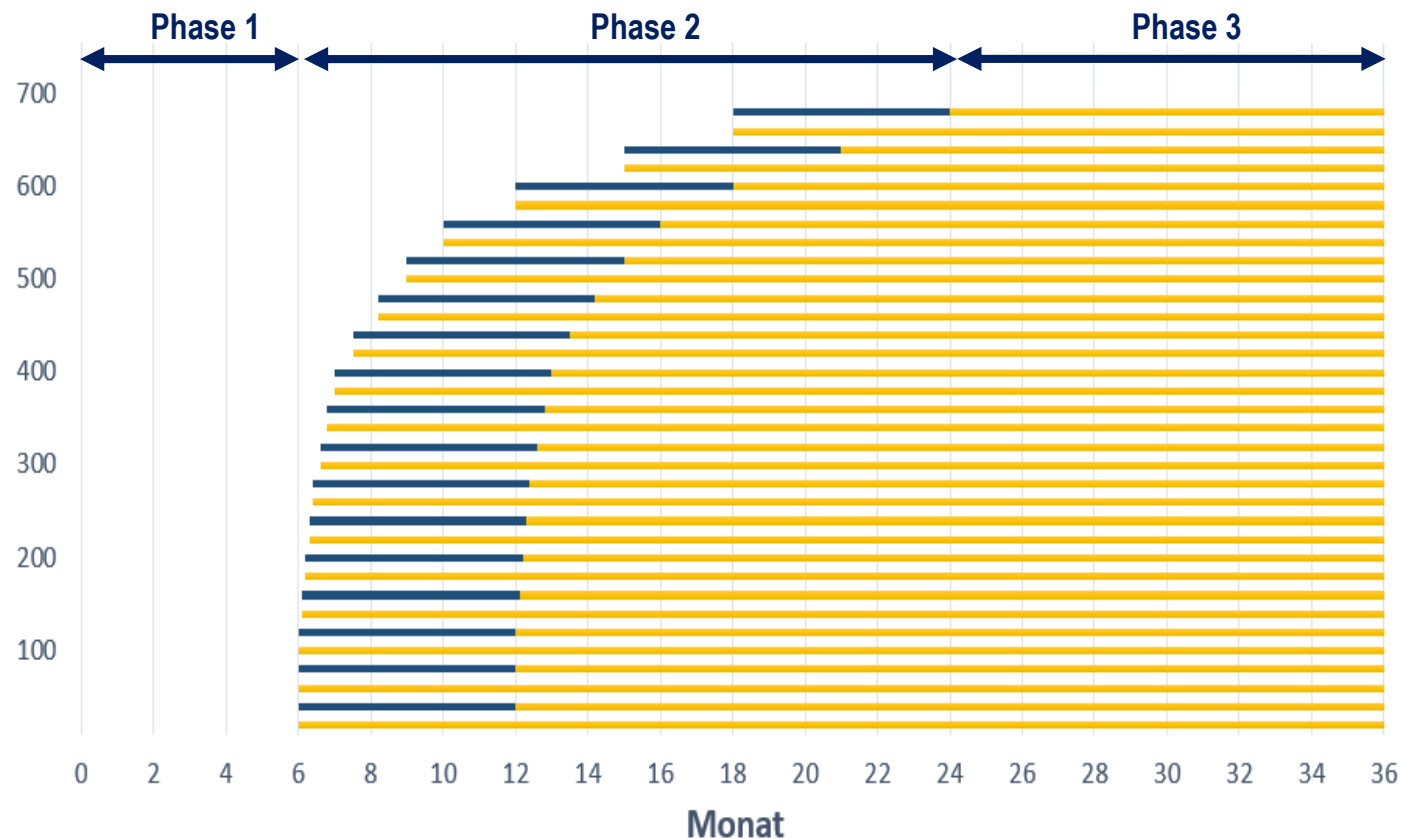
Phase 3:
Follow-up



Online prevention quizz



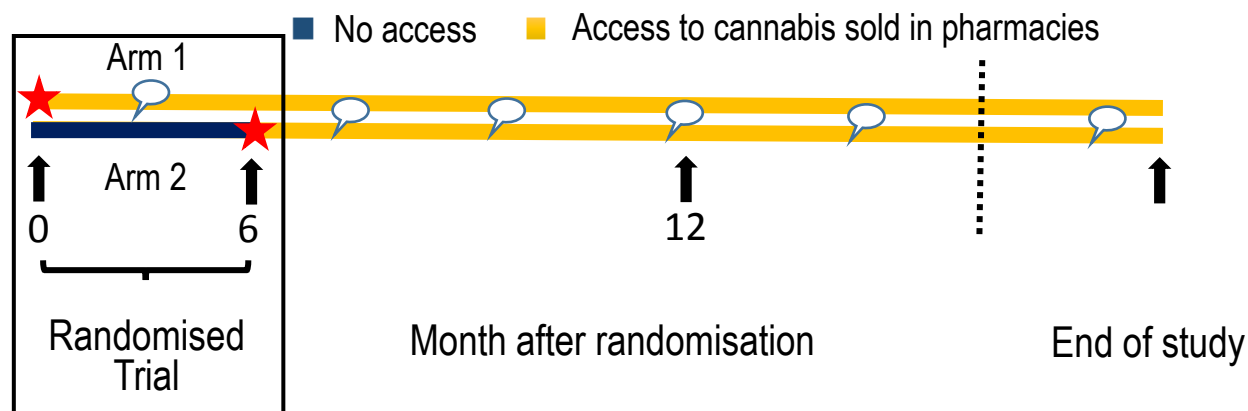
SMS messages



Data collection at participant level
Questionnaire



Data collection at level of city



Role of study physician /pharmacist

- Establishing identity/authorisation of study participant at first contact
- Obtaining hair sample
- Going through checklist of exclusion criteria
- Keeping track of sold cannabis (max 24 g per month)
- Notification of suspected problematic consumption
- Referral to counselling



Beratung ^

Selbsttests v

Themen A-Z v

Hilfe vor Ort v

Newsletter v

Sprechstunde

Mail-Beratung

Chat

Forum

Selbsttests

Hilfe vor Ort

Substanz

Cannabis ist eine Pflanzengattung, die zu den Hanfgewächsen (Cannabaceae) gehört. Verschiedene Teile der drei Hanfarten Cannabis indica, Cannabis ruderalis und Cannabis sativa werden in Form von Haschisch („Dope“, „Shit“) oder Marihuana („Gras“) als Rauschmittel konsumiert.

Tetrahydrocannabinol (THC) und Cannabidiol (CBD) sind dabei die wichtigsten psychoaktiven Wirkstoffe unter den rund 400 chemischen Substanzen der Hanfpflanze. Cannabis wird in den meisten Fällen geraucht, in selteneren Fällen auch Getränken, z. B. Tee, beigegeben, mit Joghurt gegessen oder in Kekse eingebacken.

Wirkungen und Nebenwirkungen

Wie bei jeder anderen Rauschdroge auch hängt die Wirkung sowohl von der Dosierung als auch von der Qualität der Substanz ab, d. h. von der Wirkstoffkonzentration, Streckmitteln und Zusatzstoffen. Wirkstoffgehalt und Kombination der Cannabinoide variieren je nach Cannabissorte. Manche Sorten wirken eher beruhigend, andere leicht halluzinogen. Der Wirkungseintritt beim Rauchen tritt meist innerhalb weniger Minuten ein, bei oraler Einnahme ist die Wirkung verzögert und tritt aber häufig sehr plötzlich ein und hält länger an. Dabei hängen die psychischen Wirkungen sehr stark von der jeweiligen

Mail-Beratung

Haben Sie Fragen zu Cannabis?

Hier geht es zur [Mail-Beratung](#)

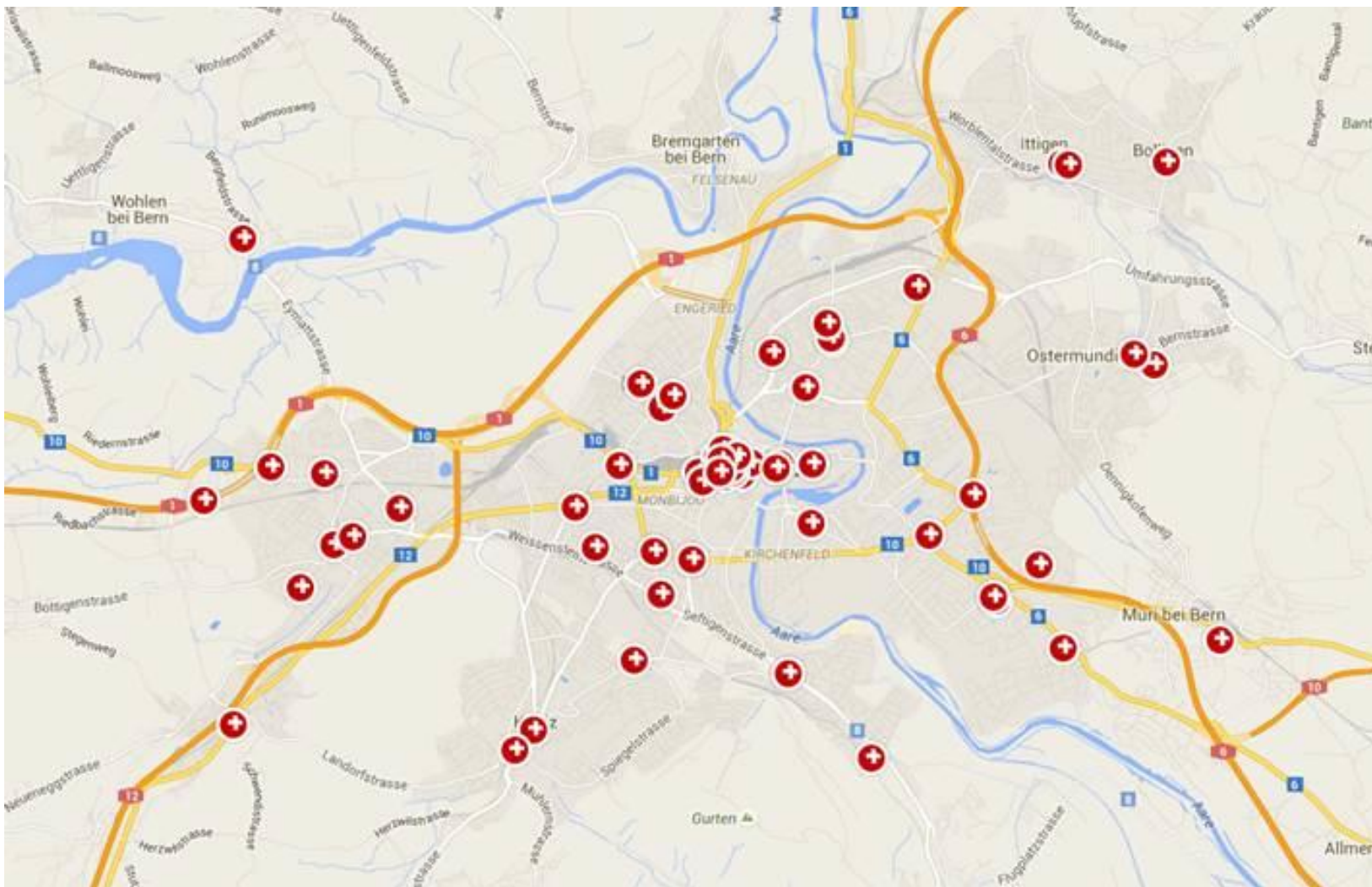
Aktuelle Chats

Di. 07 Jun. '16
20:00 - 21:00

< [Moderner
Selbsthilfechat für
Angehörige, Freunde
und
ArbeitskollegInnen
von Suchtbetroffenen
„illegale Drogen“](#) >

Moderation:
SafeZone-Clea

Pharmacies in Bern





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Beratung und Therapie



Regionalleiterin
Hubrich Rita
rita.hubrich@beges.ch



Regionalleiterin
Messerli Christina
christina.messerli@beges.ch



Mitarbeiterin Sekretariat
Toboll Brigitte
brigitte.toboll@beges.ch



Mitarbeiterin Sekretariat
Zbinden Susanna
susanna.zbinden@beges.ch



Praktikantin Sekretariat
Zimmermann Pascale
pascale.zimmermann@beges.ch



Fachmitarbeiterin
Bernet Anna
anna.bernet@beges.ch



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Endpoints (1)

- Primary endpoint: level of cannabis consumption
- Secondary endpoints at the level of the individuals
 - No. of participants
 - Consumption of other illicit drugs and alcohol
 - Risk perception regarding cannabis consumption
 - Contacts with authorities/police related to cannabis consumption
 - Respiratory health
 - Mental health
 - Amount of cannabis purchased on the black market
 - General well-being
 - Adverse effects
 - Etc.

Endpoints (2)



SCRIPT

- Secondary endpoints at other levels:
 - Black market characteristics (price, level of contamination, THC level)
 - Incidence of emergency consultations related to cannabis consumption
 - Legal proceedings and fines related to cannabis
 - Attitudes of consumers not participating in SCRIPT
 - Attitudes and experiences of pharmacy staff and off residents living near pharmacies

Study product

- Mixture of buds
- Packaged in portions of 4 g
- Constant THC content of 12-13%
- THC content slightly below black market



SCRIPT

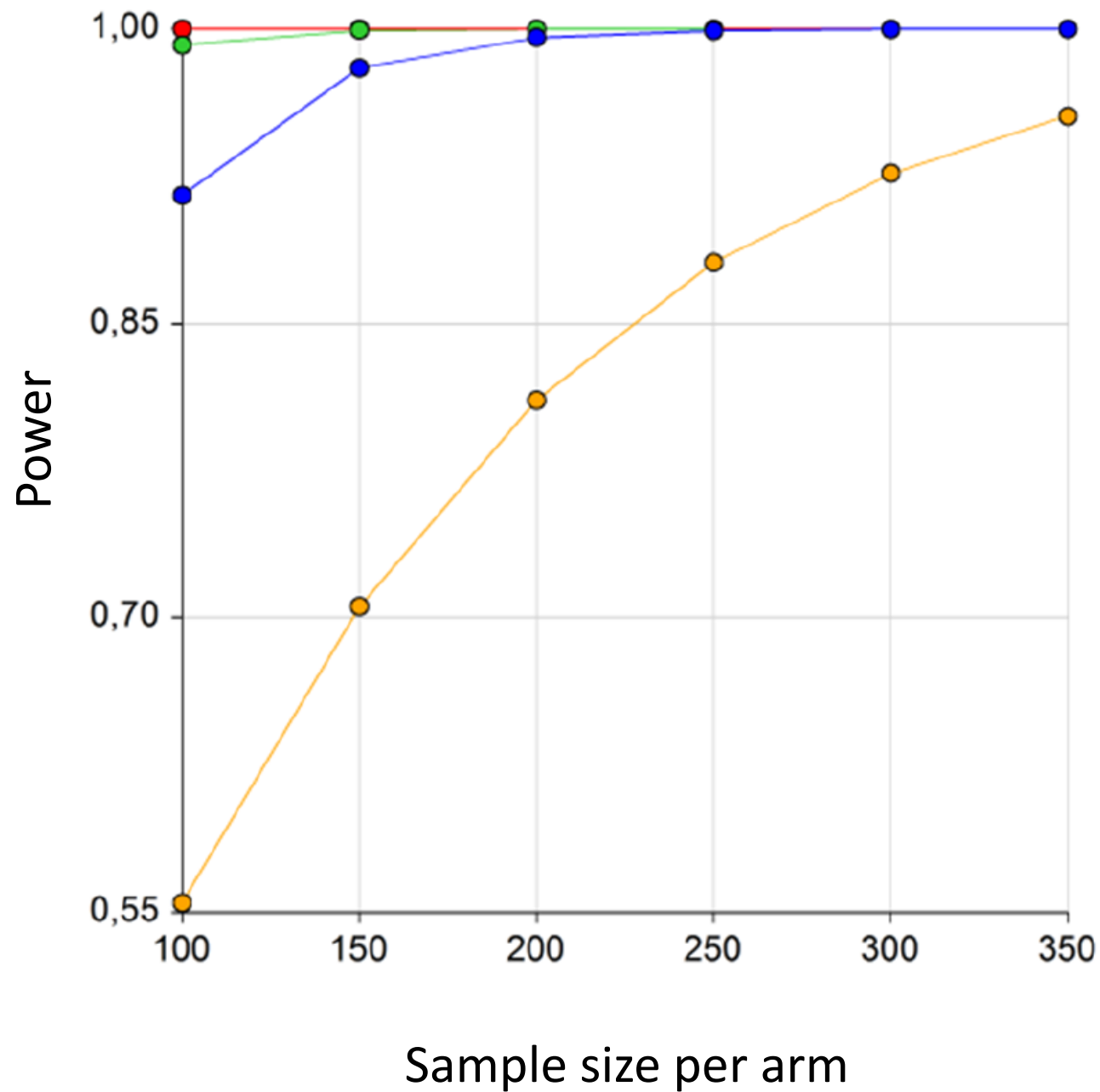


Statistical analysis

- Differences in primary endpoint (change in CUDIT score) at the individual level from t0 to t6m (randomised)
- Analysis of time trends of aggregate endpoints (observational)

The image shows handwritten mathematical derivations for the maximum likelihood estimation of a normal distribution. The equations are as follows:

$$\ln L(\mu, \sigma^2) = -\frac{n}{2} \ln(2\pi\sigma^2) - \frac{1}{2\sigma^2} \sum (x_i - \mu)^2$$
$$\frac{\partial}{\partial \mu} \ln L(\mu, \sigma^2) = -\frac{1}{\sigma^2} \sum (x_i - \mu) = 0$$
$$\sum (x_i - \mu) = 0 \Rightarrow \sum x_i - n\mu = 0 \Rightarrow \mu = \bar{x}$$
$$\frac{\partial}{\partial \sigma^2} \ln L(\mu, \sigma^2) = -\frac{n}{2\sigma^2} + \frac{1}{2\sigma^4} \sum (x_i - \mu)^2 = 0$$
$$\sum (x_i - \mu)^2 = n\sigma^2 \Rightarrow \sigma^2 = \frac{1}{n} \sum (x_i - \bar{x})^2 = s^2$$
$$\ln L(\bar{x}, s^2) = -\frac{n}{2} \ln(2\pi s^2) - \frac{1}{2s^2} \sum (x_i - \bar{x})^2$$
$$= -\frac{n}{2} \ln(2\pi s^2) - \frac{1}{2} \ln(s^2) - \frac{1}{2} \ln(s^2 + (\bar{x} - \mu_0)^2)$$

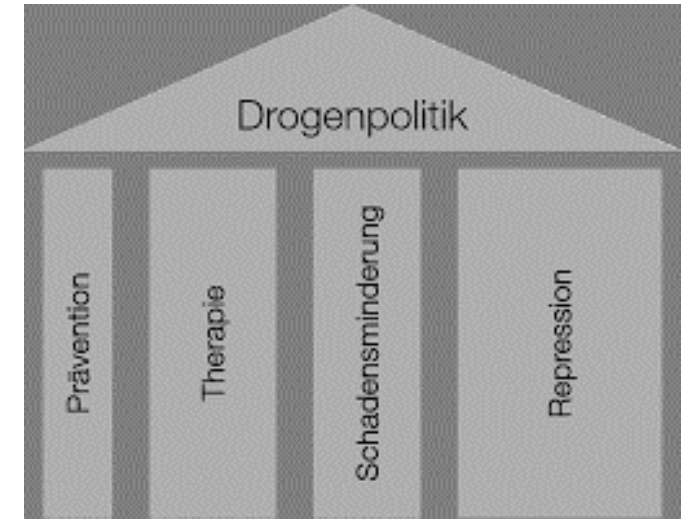


Assumed
change in
CUDIT

- 0.1
- 0.5
- 1
- 1.5

Power calculation

SPIRIT and Swiss drug policy



- **Prevention:** The consumer can be reached and enrolled in preventive interventions
- **Therapy:** In case of problematic consumption, counselling can be organised and therapeutic measures implemented.
- **Harm reduction:** The quality of the cannabis product can be assured and monitored. Also, decriminalization of the consumption may reduce harm.
- **Repression und regulation:** Only adults have access to the regulated sale of cannabis. Consumption in the public space remains prohibited.

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