

Cannabis and Cannabinoids Education: a tool to change medical practice

3rd STCM Conference

Jan 19th, 2019

Conflict of Interest

- ✓ The pilot of the education program for physicians has been sponsored by public agencies and private companies that will be mentioned at the end of the presentation
- ✓ No other conflicts to declare for this activity

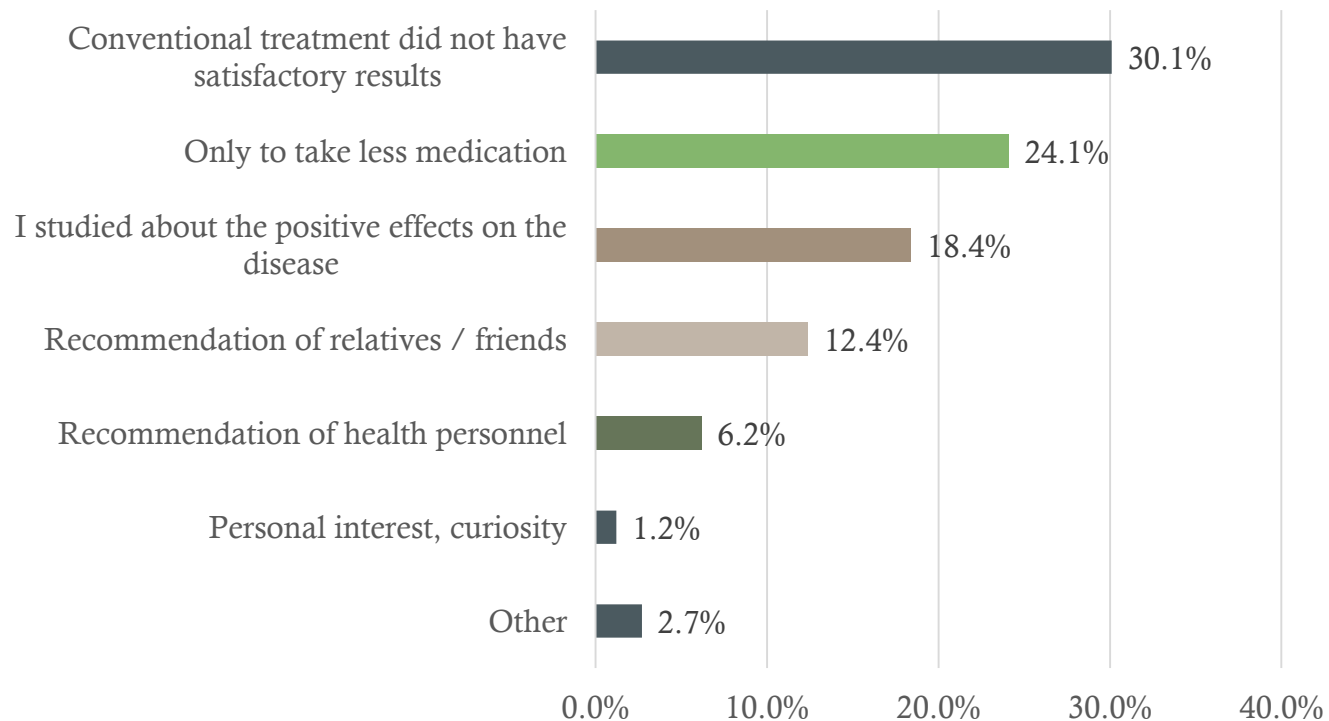
Availability of information

- ✓ Increasing availability
- ✓ Widely spread but not always of good quality, accurate, reliable
- ✓ More patients and clinicians trying these treatments
- ✓ “Medical advise” from suppliers, Internet blogs and forums
- ✓ Also “hopes traffickers”

Interest in Medical Cannabis

Monitor Cannabis Uruguay Survey 2017

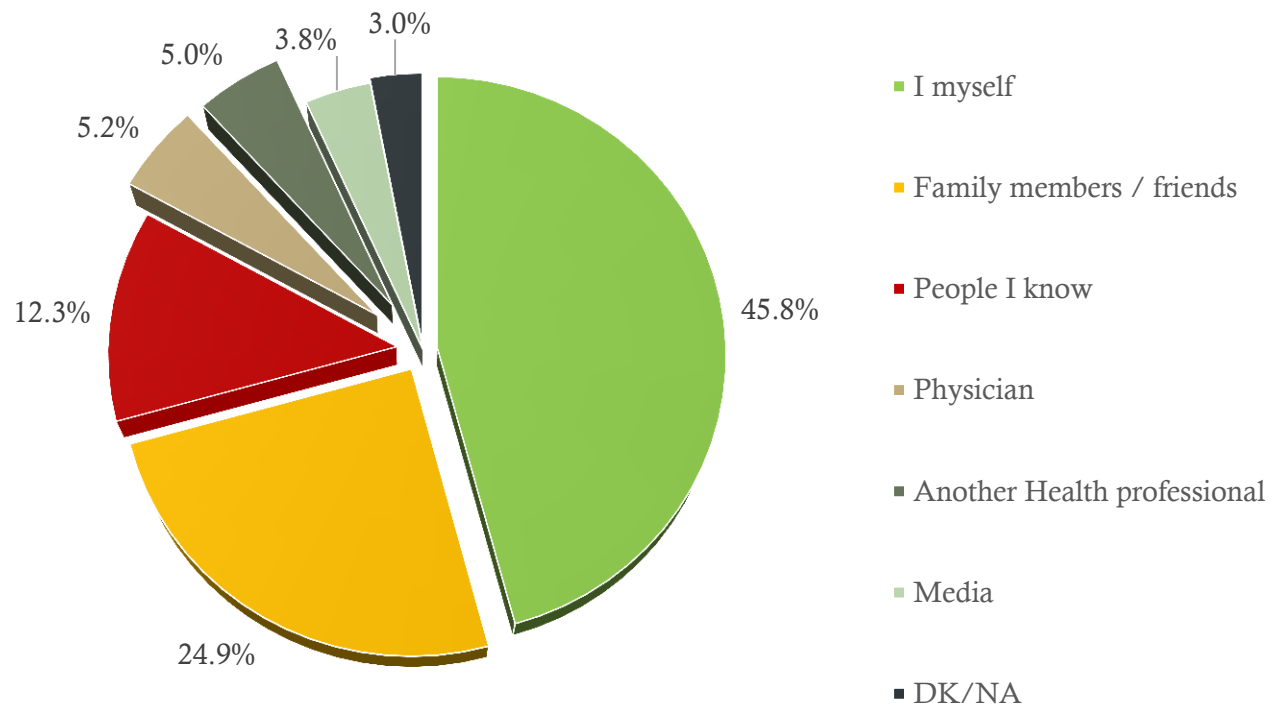
Why did you become interested in this type of treatment?



MC recommendation for health conditions

Monitor Cannabis Uruguay Survey 2017

Who suggested you use cannabis as medicine?



Getting information

Monitor Cannabis Uruguay Survey 2016-2018

- ✓ Access to information
 - Internet: 56.2%
 - Health professionals: 11.9%
 - Only 10.6% of the reported ongoing treatments were recommended by a physician
 - 57% of the interviewees haven't consulted a physician after getting the information

Getting information

Monitor Cannabis Uruguay Survey 2016-2018

- ✓ Consultation and medical follow up:
 - 31% of interviewees reported that were already using cannabis for medicinal purposes:
 - 44.8% self-medication
 - 27.6% as a medical suggestion
 - 17.2% by peer recommendation
 - 10.3% by domestic growers or growshops
 - 58.6% of them said they were doing the treatment without medical supervision

Getting information

Monitor Cannabis Uruguay Survey 2016-2018

- ✓ Reasons for not consulting a medical doctor
 - They think their doctor is not trained to follow these treatments: 23%
 - They are not prepared to discuss with their doctors: 9.5%
 - Their doctors don't support cannabis treatments: 9.5%
 - It's not an appropriate matter to discuss with a doctor: 8.4%
 - They fear rejection: 4.2%

Consultation with a MD

Monitor Cannabis Uruguay Survey 2016-2018

- ✓ 57% of cases the medical consultation did not take place due to barriers in the doctor-patient relationship
- ✓ 40% of the respondents that were already using cannabis for medical purposes were approved by their doctors
- ✓ 45% of the interviewees reported adverse reactions from their doctors: disapproval , ignorance, skepticism, indifference

Consultation with a MD

Monitor Cannabis Uruguay Survey 2016-2018

✓ 45% of the interviewees reported adverse reactions from their doctors:

- disapproval 17%
- ignorance 10%
- skepticism 15%
- indifference 8%

How many people are thinking or interested in MC treatments?

Monitor Cannabis Uruguay Survey 2017

25% of the respondents!

Interviews to clinicians and MS faculty

- ✓ Not prepared for clinical interventions with cannabis and cannabinoids-based medicines
- ✓ Not having accessed to reliable, science-based, relevant clinical information
- ✓ Subject not studied at the Medicine School

The Questions

Patients

- Potential benefits to their ailments
- Compatibility with conventional treatments
- During pregnancy?
- Results
- Side/Adverse effects

Doctors

- Potential benefits in different diseases
- Compatibility and interactions with conventional treatments
- Indication or not during pregnancy and breast-feeding
- Evidence of the efficacy
- Evidence of treatment safety

What diseases and symptoms?

1. Neurology:

- Epilepsy
- Neurodegenerative
- Tourette syndrome

2. Gastroenterology & Nutrition:

- Crohn & Ell
- Nauseas & Vomits
- Anorexia - Cachexia

3. MH disorders and Addiction

- PTSD
- Anxiety/Depression
- Addiction
- Insomnia
- TEA

4. Pain:

- Chronic
- Neuropathic
- Metastatic
- Migraine
- Fibromyalgia
- Rheumatic diseases

5. Autoimmunity:

- Lupus**
- RA**
- Thyroiditis (Hashimoto)**
- Diabetes Type I**
- Raynaud syndrome/disease**
- Others**

6. Oncology & Palliative care:

- Chemotherapy (side effects & optimizing results)**
- Cancer (not alone)**
- HIV-AIDS and Wasting syndrome**
- Terminal states**

7. Dermatology

- Psoriasis**
- Acne**
- Dermatitis**

8. Ophthalmology:

- Glaucoma (open angle)**
- Diabetic retinopathy**
- Neurodegenerative**

9. Bone conditions:

- Osteoporosis**
- Bone fractures (?)**

The Questions

Patients'

- Potential benefits to their ailments
- Compatibility with conventional treatments
- During pregnancy?
- Results
- Side/Adverse effects

Doctors'

- Potential benefits in different diseases
- Compatibility and interactions with conventional treatments
- Indication or not during pregnancy and breast-feeding
- Evidence of the efficacy
- Evidence of treatment safety

Interactions y with con otros tratamientos

- ▮ **Pharmacodynamic**
- ▮ **Pharmacokinetic**

Pharmacodynamics

- ✓ With other sedative drugs enhancing central effects: sedation and impairment of motor performance
- ✓ Psychostimulants can reduce cannabinoids action
- ✓ Warning: drugs and substances with positive chronotropic and inotropic effects (hypertension and tachycardia)

Pharmacokinetics

NCBI Resources ▾ How To ▾

PubMed.gov

US National Library of Medicine
National Institutes of Health

PubMed

Advanced

Format: Abstract ▾

Send to

CNS Neurol Disord Drug Targets. 2017 Apr 13. doi: 10.2174/1871527316666170413104516. [Epub ahead of print]

Neuropsychiatric and general interactions of natural and synthetic cannabinoids with drugs of abuse and medicines.

Arellano AL¹, Papaseit E¹, Romaguera A², Torrens M², Farré M¹.

Author information

Abstract

Cannabis is the most widely used illicit drug. The two most important natural cannabinoids are delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD). The THC content of cannabis has been increasing during the last years and recently appeared in the market a series of synthetic cannabinoids with potent agonist activity. Recreational users frequently combine cannabis with other drugs of abuse as alcohol, amphetamines and derivatives, nicotine and cocaine. In addition these subjects can be taking medicines for acute and chronic medical conditions. The increasing use of medicinal cannabis for chronic pain and neurological and psychiatric disorders can produce potential interactions with medications used for the symptomatic treatment of these or other diseases. THC and CBD are metabolized mainly in the liver by cytochrome P-450 isoenzymes (mainly CYP2Cs and CYP3A4). In vitro studies indicate that THC and CBD both inhibit CYP1A1, 1A2 and 1B1 enzymes, and recent studies have indicated that CBD is also a potent inhibitor of CYP2C19 and CYP3A4. Both cannabinoids may interact with other medications metabolized by the same pathway or by inducers/inhibitors of the isoenzymes. Cannabis produces sedation, impairs psychomotor performance, and increases blood pressure and heart rate. Pharmacodynamics interactions with other sedatives can potentiate the central effects but can be decreased by psychostimulants. This review focuses on the interactions between cannabinoids and alcohol, other drugs of abuse, and prescription medicines.

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KEYWORDS: Cannabis; alcohol; cannabidiol; cannabinoids; interactions; medicines ; tetrahydrocannabinol

SCN

Pharmacokinetics



[Clinical Pharmacokinetics](#)

November 2016, Volume 55, [Issue 11](#), pp 1353–1368

Pharmacokinetic Drug Interactions with Tobacco, Cannabinoids and Smoking Cessation Products

Authors

[Authors and affiliations](#)

Gail D. Anderson , Lingtak-Neander Chan

Abstract

Tobacco smoke contains a large number of compounds in the form of metals, volatile gases and insoluble particles, as well as nicotine, a highly addictive alkaloid. Marijuana is the most widely used illicit drug of abuse in the world, with a significant increase in the USA due to the increasing number of states that allow medical and recreational use. Of the over 70 phytocannabinoids in marijuana, Δ^9 -tetrahydrocannabinol (Δ^9 THC), cannabidiol (CBD) and cannibinol are the three main constituents. Both marijuana and tobacco smoking induce cytochrome P450 (CYP) 1A2 through activation of the aromatic hydrocarbon receptor, and the induction effect between the two products is additive. Smoking cessation is associated with rapid downregulation of CYP1A enzymes. On the basis of the estimated half-life of CYP1A2, dose reduction of CYP1A drugs may be necessary as early as the first few days after smoking cessation to prevent toxicity, especially for drugs with a narrow therapeutic index. Nicotine is a substrate of CYP2A6, which is induced by oestrogen, resulting in lower concentrations of nicotine in females than in males, especially in females taking oral contraceptives. The significant effects of CYP3A4 inducers and inhibitors on the pharmacokinetics of Δ^9 THC/CBD oromucosal spray suggest that CYP3A4 is the primary enzyme responsible for the metabolism of Δ^9 THC and CBD. Limited data also suggest that CBD may significantly inhibit CYP2C19. With the increasing use of marijuana and cannabis products, clinical studies are needed in order to determine the effects of other drugs on pharmacokinetics and pharmacodynamics.

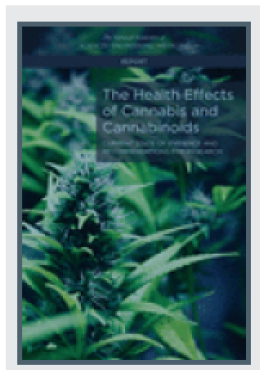
Results - Efficacy

The evidence

THE NATIONAL ACADEMIES PRESS

This PDF is available at <http://www.nap.edu/24625>

SHARE



The Health Effects of Cannabis and Cannabinoids: The Current State of Evidence and Recommendations for Research

2017

DETAILS

440 pages | 6 x 9 | PAPERBACK
ISBN 978-0-309-45304-2 | DOI: 10.17226/24625

AUTHORS

Committee on the Health Effects of Marijuana: An Evidence Review and Research Agenda; Board on Population Health and Public Health Practice; Health and Medicine Division; National Academies of Sciences, Engineering, and Medicine

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REPORT

The Health Effects of Cannabis and Cannabinoids

THE CURRENT STATE OF EVIDENCE AND
RECOMMENDATIONS FOR RESEARCH

2017

ANNEX

Report Conclusions⁵

Chapter 4 Conclusions—Therapeutic Effects

There is conclusive or substantial evidence that cannabis or cannabinoids are effective:

- For the treatment of chronic pain in adults (cannabis) (4-1)
- As anti-emetics in the treatment of chemotherapy-induced nausea and vomiting (oral cannabinoids) (4-3)
- For improving patient-reported multiple sclerosis spasticity symptoms (oral cannabinoids) (4-7a)

CONCLUSION 4-1 There is substantial evidence that cannabis is an effective treatment for chronic pain in adults.

Adverse effects

- From mild to moderate
- No lethal cases reported with exclusive use of cannabis and in healthy people (different from the illicit market synthetic cannabinoids)
- Easily reversible by reducing doses or associated medication
- Take into account the biphasic / bimodal effect: dose response curve

- ✓ Euphoria
- ✓ Fatigue
- ✓ Sedation and drowsiness
- ✓ Dizziness
- ✓ Sickness
- ✓ Tachycardia / Bradycardia
- ✓ Hyper or arterial hypotension
- ✓ Orthostatic hypotension
- ✓ Bronchodilation
- ✓ Dry mouth and reduction of lacrimation

- ✓ Muscle relaxation
- ✓ Disorders of coordination
- ✓ Memory and concentration disorders
- ✓ Psychotomimetic effects
- ✓ Immobilization simulated catatonia
- ✓ Increase in appetite
- ✓ Hyperemesis
- ✓ Hypoglycemia
- ✓ Dependence

And also...

Patients'

- I will be stoned?
- Is it a lifelong treatment?
- Is it a curative treatment?
- Is it possible to interrupt the current treatment or reduce doses?
- What happens when cannabinoids-based treatment is interrupted?
- To quit the treatment, should the doses be reduced slowly?

Doctors'

- Any specific information or clinical aspects to request?
- Routes of administration
- Smoking?
- Doses
- Products and formulations
- Treatment monitoring
- Access to safe products
- Bibliography (reliable clinical information)

Patients'

- I will be stoned?
- Is it a lifelong treatment?
- Is it a curative treatment?
- Is it possible to interrupt the current treatment or reduce doses?
- Shall I become an addict? Dependency?
- What happens when cannabinoids-based treatment is interrupted?
- To quit the treatment, should the doses be reduced slowly? Withdrawal syndrome?

Doctors'

Any specific information or clinical aspects to request?

The clinical interview

1. General features of any other clinical record
2. Diagnosis, Treatment/s (past and current) & Reason for consultation
3. Personal and family pathological antecedents (general and MH)
4. Why cannabis? What led the patient to consider cannabis-based treatment.
Expectations & prejudices
5. Prior and present experience with cannabis (adult use/medicinal)
6. Education of patients and close relationships
7. The prescription: doses, formulation and compounds, routes of administration
8. Treatment follow-up

Doctors'

- **Routes of administration?**
- **Doses?**
- **Products and formulations?**
- **Treatment monitoring?**
- **Access to safe products?**

Doctors

Bibliography (reliable information)

Reliable information about Cannabis and medical use

Elsevier > Books & Journals > Neuroscience > Neuroscience (General) > Neuroscience > Handbook

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Arts & Humanities | Dictionaries & Reference | Law | Medicine & Health | Science & Mathematics | Social Sciences

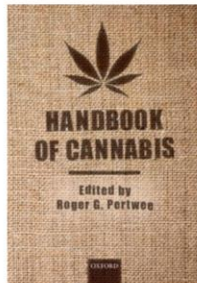
You are here: Home Page > Science & Mathematics > Psychology > Handbook of Cannabis

Overview

Description

Table of Contents

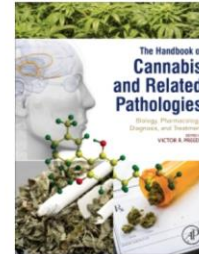
Author Information



Handbook of Cannabis

Edited by Roger Pertwee

- Contains clinical information about cannabis, beneficial to pharmaceutical companies, clinicians and patients in identifying and evaluating the medicinal benefits of cannabis.
- Includes scientific information about cannabis valuable to academic and industrial researchers in gathering current scientific information about cannabis.
- Contains wide-ranging information about cannabis providing policymakers, government advisers, politicians, lawyers, journalists, students and parents with important relevant information about cannabis
- Each chapter is written by a group of one or more authors recognized internationally as an established expert in the topic of that chapter which ensures that the information provided on cannabis in this handbook is relevant, accurate and correctly interpreted.



View on ScienceDirect



Handbook of Cannabis and Related Pathologies

1st Edition

Biology, Pharmacology, Diagnosis, and Treatment

Editors: Victor Preedy

eBook ISBN: 9780128008270

Hardcover ISBN: 9780128007563

Imprint: Academic Press

Published Date: 23rd January 2017

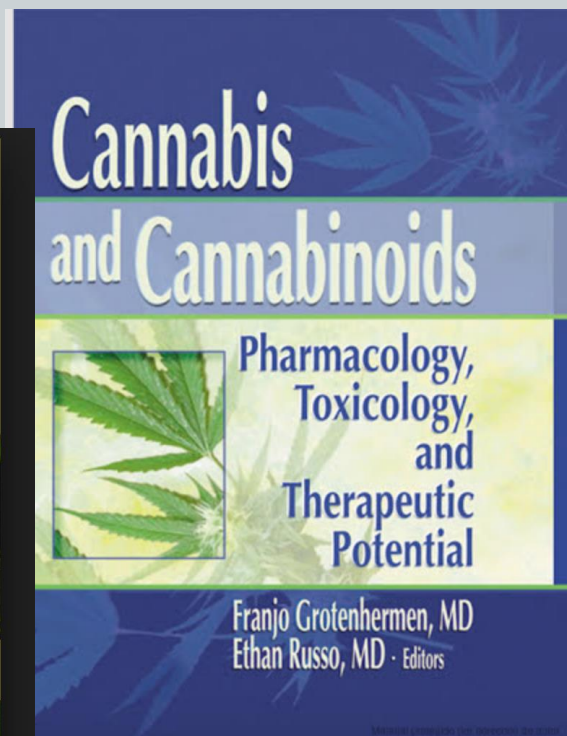
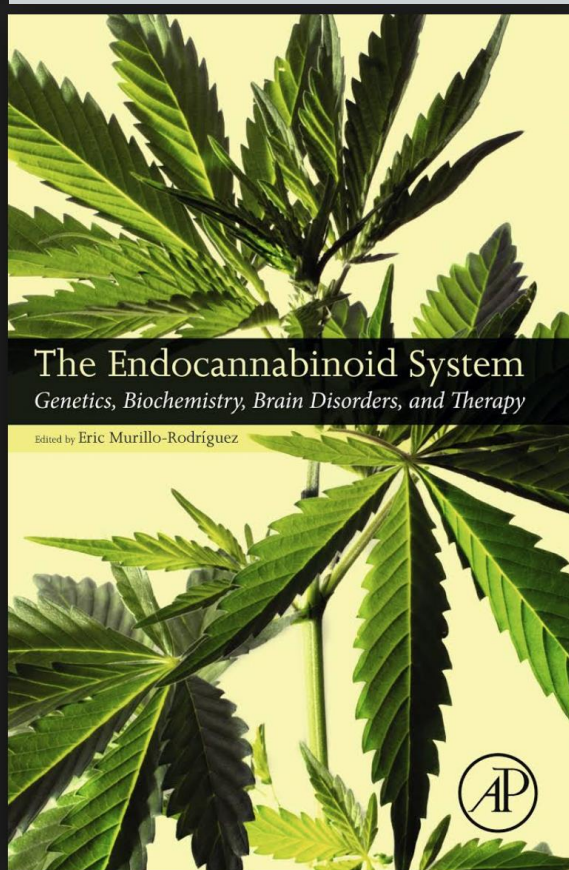
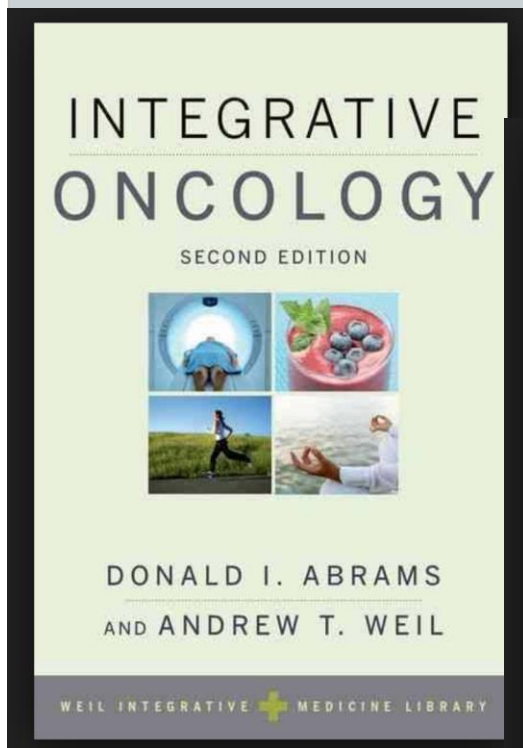
Page Count: 1170

Description

Handbook of Cannabis and Related Pathologies: Biology, Pharmacology, Diagnosis, and Treatment is the first book to take an interdisciplinary approach to the understanding of cannabis use and misuse. Recent

4cdc

Información sobre Cannabis y los usos medicinales



SUN

The Answers

Education

- ✓ General public
- ✓ Medical education

The Answers



General public education

- Systematized and specialized education web platforms
- Public personalized face-to-face approaches
- Educational campaigns
- Medical doctors consultation (?)

Contents endorsed by scientific associations or being duly accredited by bibliography

The Answers



Medical education

- Inclusion of the ECS and its modulation in the official programs of the medicine schools:
(physiology, pharmacology, neurology, dermatology, oncology, gastroenterology, immunology, etc.)
- Education programs of the scientific societies
- Continuing medical education programs

Medical education



Medical Training Course: The Pilot

Goals:

- Training a generation of clinicians with academic standard
- Providing basis for the design of a medical education program at medicine schools
- Recruiting medical doctors
- Improving doctor-patient relationship

T course

- 7 modules in 70 hours
- Modulated interactive lectures
- Clinical cases discussions (most frequent pathologies)

Medical education

Some features

Methodology: Interactive modulated lectures (modules 1 to 6) and workshop for clinical discussions(module 7)

Website

Simultaneous translation

Bibliography: Handbooks and 3 articles provided by the responsible of the topic

Evaluation: Pre and post course
Other

**Why do we talk about
cannabis medicine?
Endocannabinology**

The course:

Endocannabinology and Cannabinoid Medicines

Acknowledgments



Professors “Dream Team”



Danke sehr!

非常感謝

Grazie mille!

Большое спасибо!

Gracias

תודה רבה

Thank you!

Danke schön!

Merci beaucoup!

बहुत बहुत धन्यवाद

Děkuji vám moc

bakka þér kærlega

شكرا جزيلا لك

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