

Safe and effective use of Medical Cannabis in the elderly

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Faculty/Presenter Disclosure

- **Faculty: Tran, Vu Kiet**
- **Relationships with financial sponsors:**
 - **Speakers Bureau/Honoraria:** OCFP, FMS
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 - Tran, Vu kiet has not received payment from any organization for this program
 - No product will be discussed in this program

Mitigating Potential Bias

- No bias in this presentation

Objectives

- The Endocannabinoid System 101
- What is medical cannabis:
Components, Formulations
- Indications for use in the
elderly/long term care population.
- Challenges in prescribing in Long
Term Care

Medical cannabis

Expectation



Reality



Female 72 yrs

- 72 yo female
- Was on 80mg of hydromorphone daily for chronic pain and phantom pain
- On Venlafaxine, Nortriptyline, Gabapentin
- Was put on Cannabis oil bid
- MD was able to reduce to Hydromorphone 2mg tid prn
- Husband no longer wants to pay for the cannabis
- Pain uncontrolled and re-titrating hydromorphone...



First use of Cannabis in medicine

- Medical cannabis has long written history in Eurasia
- Chinese emperor Shen Nung wrote China's first pharmacopoeia

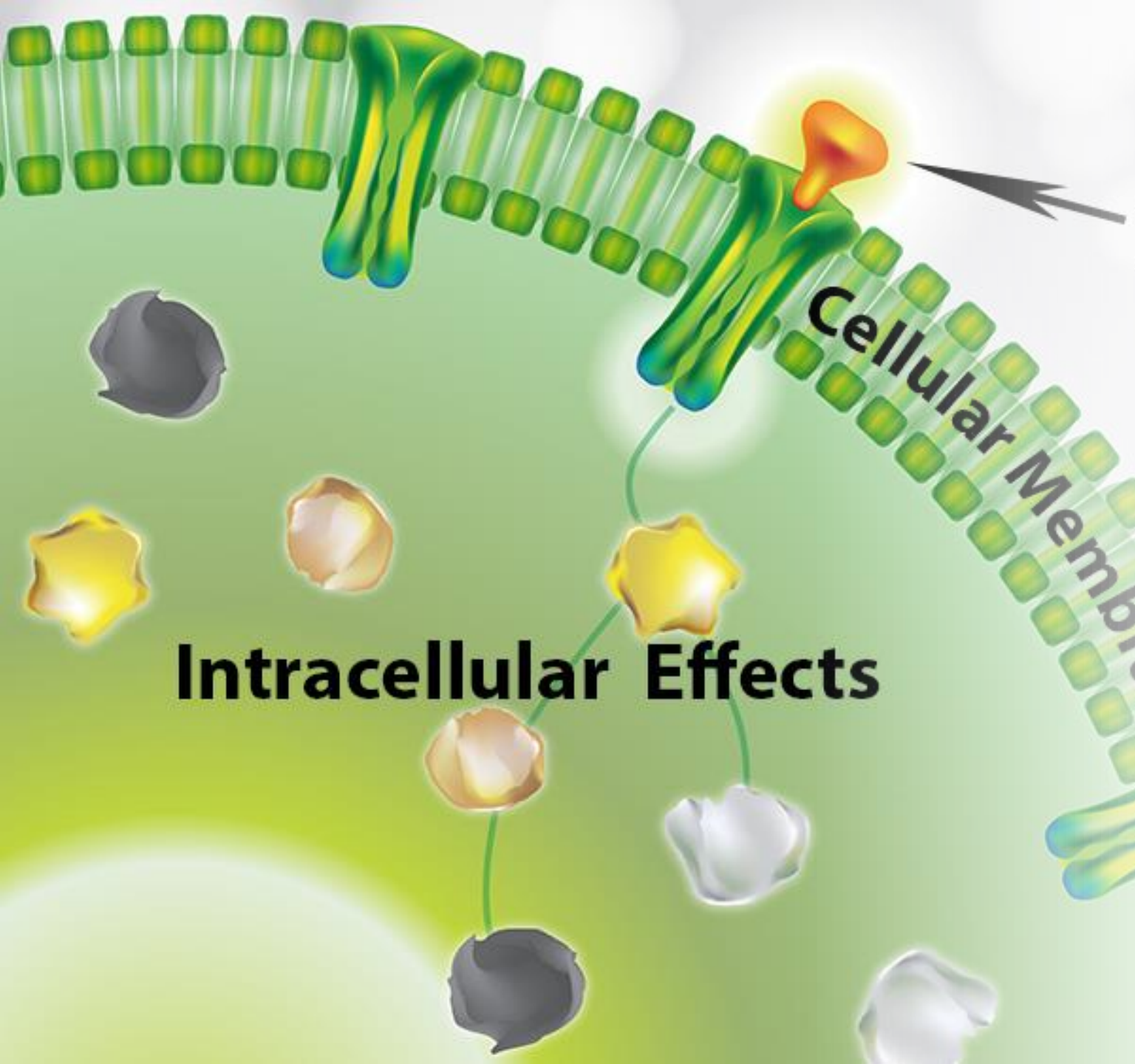




Cannabis

- Cannabis comes in a variety of forms and potencies
- The most widely consumed form is dried, seedless female flowers commonly called Sinsemilla
- Most dispensary stock many different name varieties with a wide variety of chemical compositions and resultant medical effects

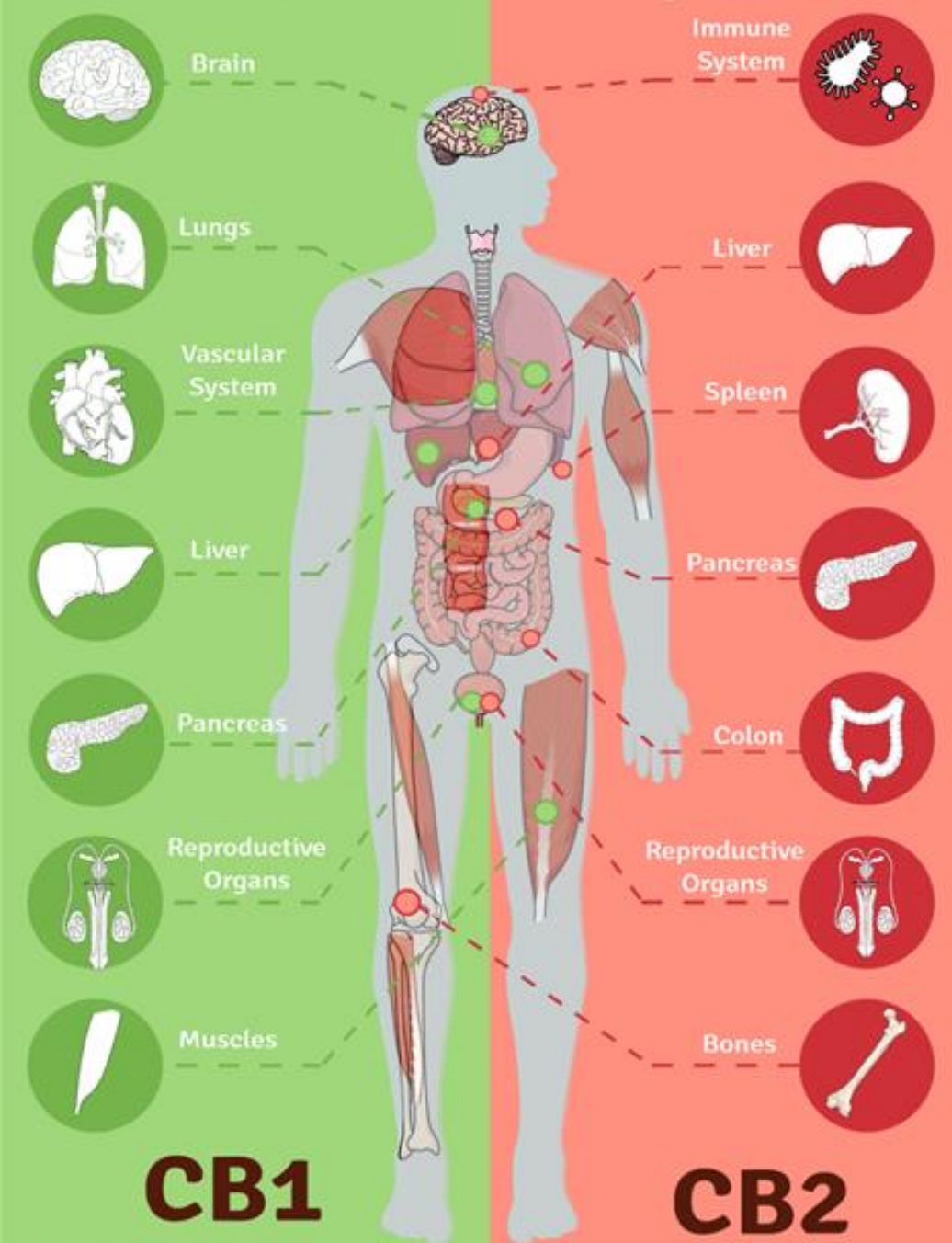




The endocannabinoid System (ECS)

- The ECS is a complex and not fully understood system and is NOT generally taught in the curriculum (eg. Medicine and Nursing)
- Involves three core components: endocannabinoids, receptors, and enzymes.
- Endocannabinoids, also called endogenous cannabinoids, are molecules produced by the body.
- THC exerts its effect primarily through the activation of CB1
- CBD does not bind to either CB1 or CB2 but rather, it inhibits or activates other receptors, enzymes, and molecules

Endocannabinoid system



Homeostasis

The endogenous cannabinoids Play a role in the function and regulation of the endocannabinoid system

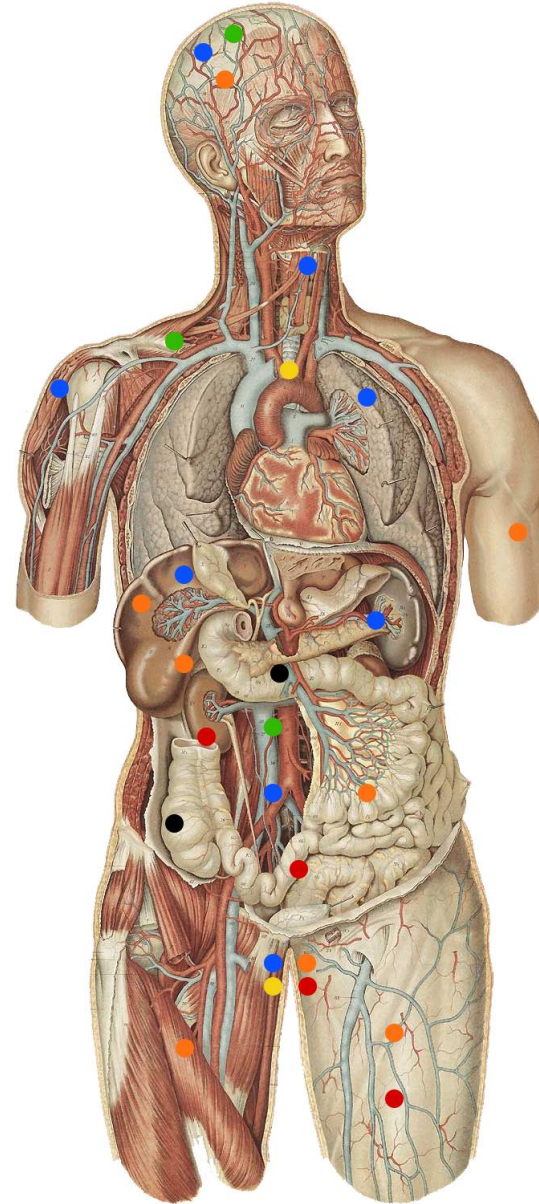
Human Endocannabinoid system

CB1

- Brain
- Spinal Cord
- Pituitary Gland
- Adrenal Gland
- Thyroid Gland
- Fat Cells
- Muscle Cells
- Liver Cells
- Digestive Tract
- Lungs

TRPV1

- Brain
- Bone Marrow
- Muscles
- Liver
- Digestive Tract
- Kidneys
- Bladder
- Reproductive System
- Fat Cells



CB2

- Brain
- Immune System
- Digestive Tract
- Nerves

GPR18

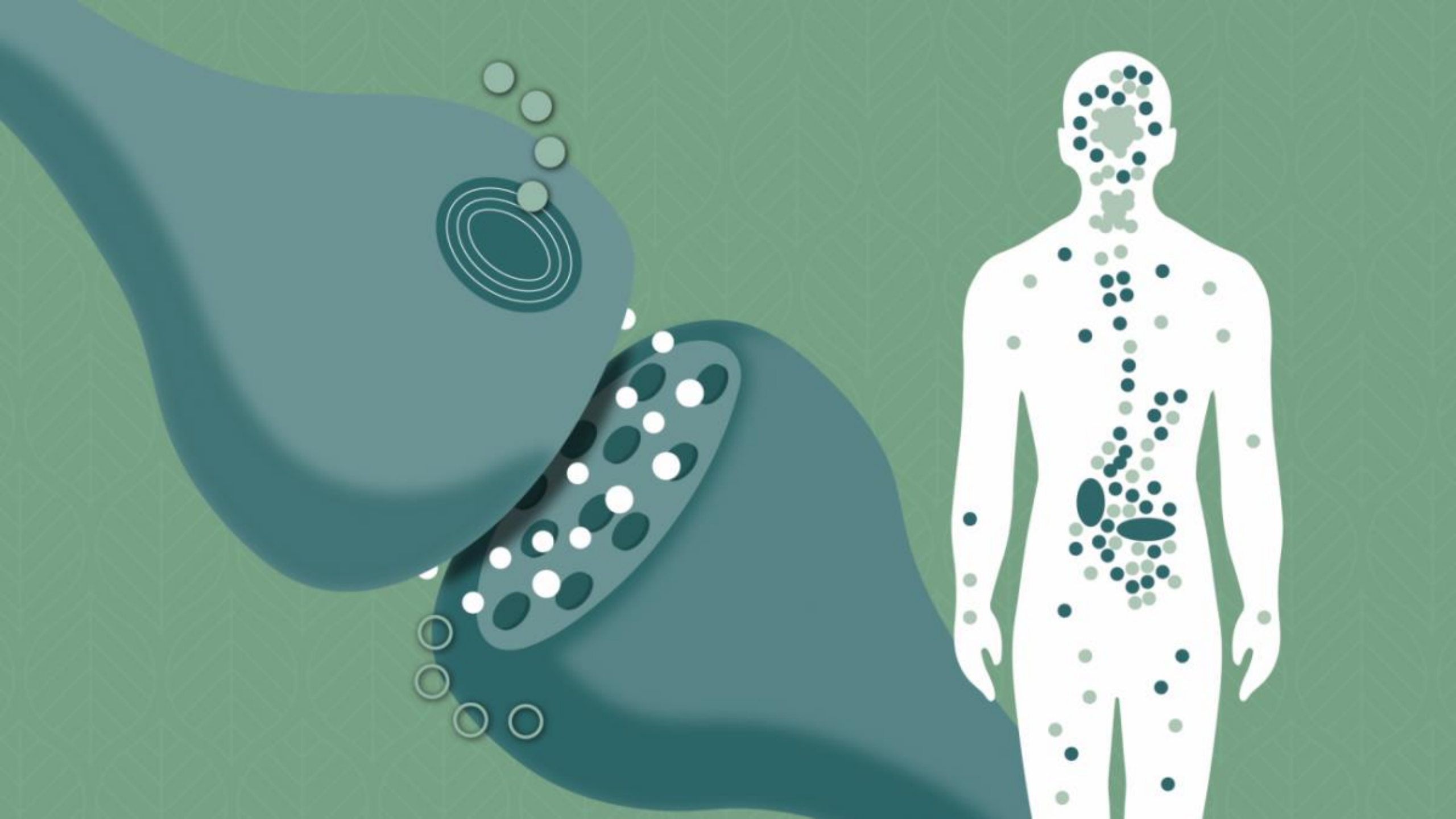
- Bone Marrow
- Immune System
- Reproductive System

GPR55

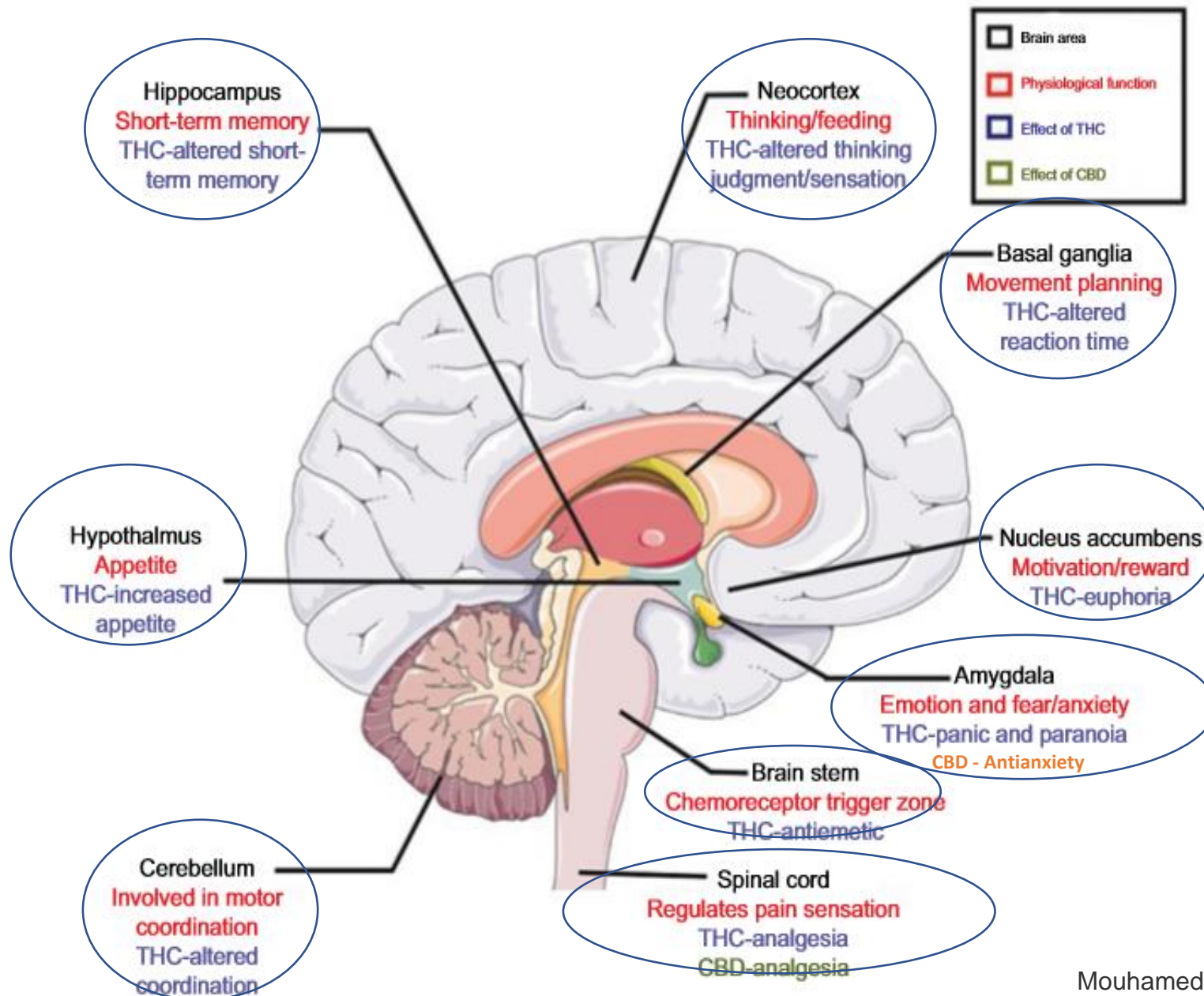
- Brain
- Bone Marrow
- Immune System
- Reproductive System
- Bladder
- Intestines

GPR119

- Pancreas
- Digestive Tract



Central Nervous System



No CB1 receptors in cardiac/respiratory locations of the pons

What is medical cannabis?

Medical cannabis refers to the use of cannabis and its constituent's cannabinoids, as a medical therapy to treat listed diseases as per Health Canada to alleviate symptoms.

There are several hundred natural compounds, including over 120 cannabinoids that have been isolated from cannabis species.

COMPONENTS:

Cannabidiol/**CBD** (non-intoxicating)

THC (intoxicating)

Flavonoids – found in plants/fruit with medicinal properties

Terpenes – provide smell and are associated with additional sensations

...and many more!



Recreational Cannabis vs Medical Cannabis

- Medical cannabis will continue to be subject to different rules than recreational cannabis
- Neither are considered a narcotic or controlled substance as of October 17, 2018
- Stigma is slowly decreasing with respect to cannabis use in the elderly



Formulations:

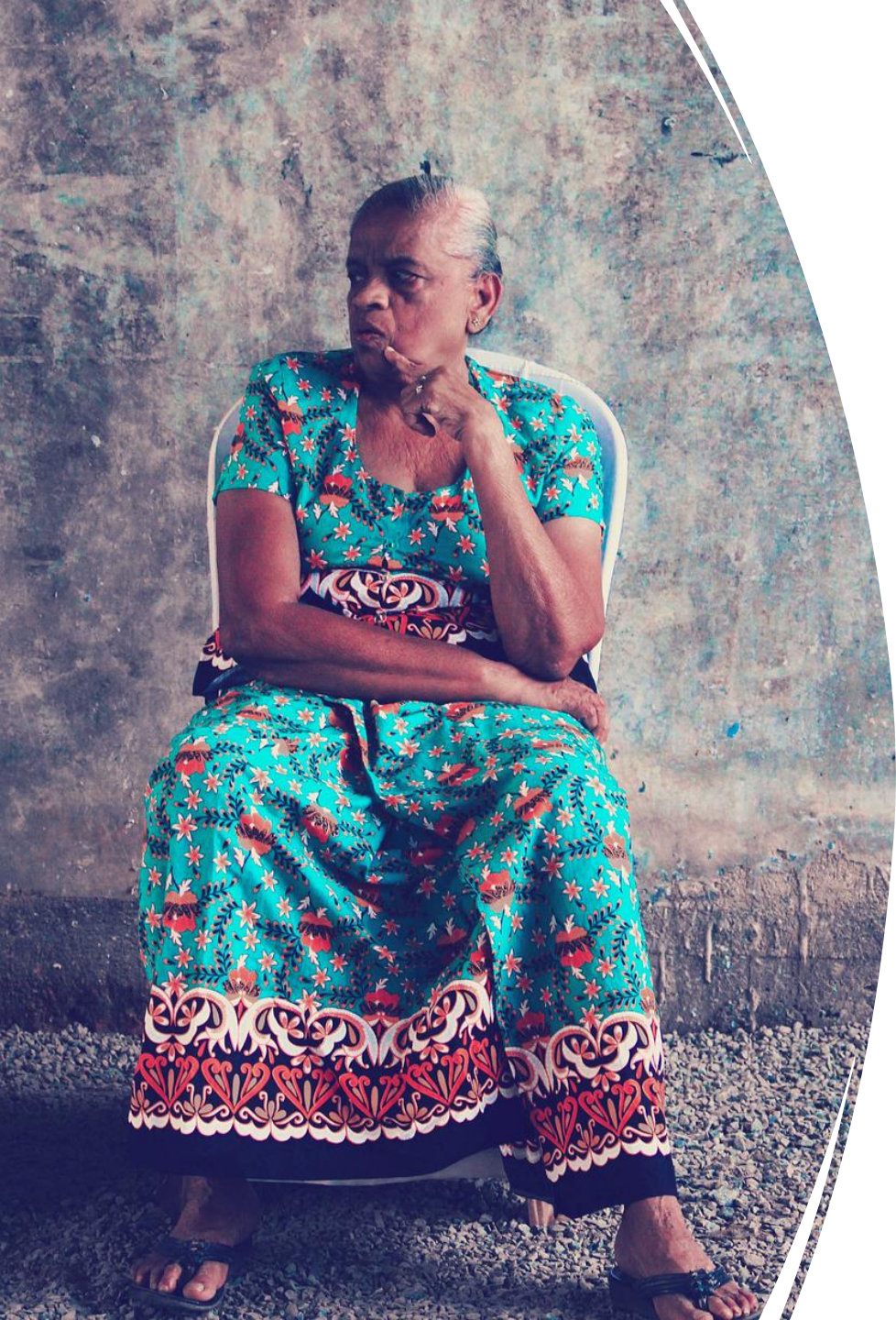
- Dried flower (inhaled)
- Oils (ingested or concentrates inhaled)
- Soft gels and Capsules (ingested)
- Tablets
- Sublingual wafers
- Metered smart vapes
- Edibles (ingested)
- Topical and Transdermal Patch (via skin into bloodstream)



Long-term care Medical Marijuana Policy

- The Marijuana for Medical Purposes Regulation (MMPR) came into force in June 2013 and was amended in 2016.
- The regulation creates conditions for the production and distribution of cannabis for medical purposes
- Policy applies to all residents and clients and pertains to the legal consumption of cannabis for medically prescribed purposes
- Resident/POA must register with Health Canada approved supplier
- Cannabis product must be shipped directly to the facility and be administered by registered staff only
- Resident will not be permitted to smoke medical cannabis on the Home's premises
- Cost \$100-200/month depending on amount and formulation





Ms. JM

- 84yo female
- Severe arthritic pain
- On maximum dose of Acetaminophen, Voltaren gel
- On Medical cannabis until POA decided to stop paying for medical cannabis
- Pain exponentially increased
- Resident no longer can ambulate and started deconditioning
- Multiple falls ensued
- No choice but to introduce Hydromorphone 0.5mg bid

Cannabis and Older Adults

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—MELISSA ETTERIDGE

The
DOCTOR-APPROVED

Cannabis Handbook



Reverse Disease, Treat Pain, and
Enhance Your Wellness with
Medical Marijuana and CBD

BENJAMIN CAPLAN, MD

Why cannabis in the elderly?

- When traditional treatments have failed and looking for a better quality of life

KEY CONSIDERATIONS IN THE ELDERLY:

- Polypharmacy
- Cannot tolerate NSAIDS
- Reduced liver and kidney function
- Increased sensitivity to adverse events
- Opioid-sparing



Considerations in the elderly

- CBD predominate formulations preferred are suggested to be given during the day.
- CBD predominate formulations with combination with THC can be used safely
- Start low and go slow.
- Decreased polypharmacy (specifically AP meds, opioids, benzos).
- Improved quality of life.
- Cost can be a barrier for many seniors.



THC vs CBD

THC:

- **Pain relief**
- Relief from **nausea**
- Reduction of **spasticity**
- Improving **appetite.**”

CBD:

- Reducing inflammation
- Reducing seizures
- Reducing anxiety
- Improving **sleep**
- Not intoxicating and euphoric effects
- Counter-balance the euphoric effects of THC



THC vs CBD

- Adverse events of cannabis medicine pertain primarily to THC
 - Total daily [dose-equivalent](#) should generally be limited to 30 mg/day or less
 - Preferably in conjunction with CBD, to avoid psychoactive sequelae and development of tolerance.
- CBD is less potent
 - Requires much higher doses for its adjunctive benefits on pain, inflammation, and attenuation of THC-associated anxiety and tachycardia

CBN (CANNABINOL)

- Both CBD and CBN are cannabinoids, or compounds derived from cannabis plants.
- CBN is the most sedative out of all the compounds in cannabis.
- CBN was discovered recently from decomposed THC
- "Cannabinoids can be classified in several ways, one of which is Broad vs Narrow,"
 - "CBD is a very broad cannabinoid that does a good job in addressing general inflammation and potentially supporting mood stability.
 - "CBN is very specific and contributes to sleep and the decrease of anxiety."

Medical
indications

Not accepted as a first
line therapy for most
indications



Medical indications



Good support by current Literature:

- Chronic Pain (MSK, joint)
- Neuropathic pain
- Palliative and cancer pain
- Spasticity in Multiple Sclerosis
- Chemotherapy induced nausea and vomiting
- Poor food intake
- Insomnia

Medical indications

Weak support by current literature:

- Responsive behaviours
- Hallucinations and/or delusions
- Anxiety



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Clinical Practice Guidelines for Cannabis and Cannabinoid-Based Medicines in the Management of Chronic Pain and Co-Occurring Conditions

Alan D. Bell,¹ Caroline MacCallum,² Shari Margoese,³ Zach Walsh,⁴ Patrick Wright,⁵ Paul J. Daeninck,^{6,7}
Enrico Mandarino,^{3,8} Gary Lacasse,^{5,*} Jagpaul Kaur Deol,⁹ Lauren de Freitas,¹⁰ Michelle St. Pierre,⁴ Lynne Belle-Isle,⁵
Marilou Gagnon,¹¹ Sian Bevan,¹² Tatiana Sanchez,⁴ Stephanie Arlt,¹⁰ Max Monahan-Ellison,¹³ James O'Hara,¹⁴
Michael Boivin,¹⁵ and Cecilia Costiniuk^{16-18,*}; and External Review Panel[†]

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Abstract

Background: One in five individuals live with chronic pain globally, which often co-occurs with sleep problems, anxiety, depression, and substance use disorders. Although these conditions are commonly managed with cannabinoid-based medicines (CBM), health care providers report lack of information on the risks, benefits, and appropriate use of CBM for therapeutic purposes.

Aims: We present these clinical practice guidelines to help clinicians and patients navigate appropriate CBM use in the management of chronic pain and co-occurring conditions.

Materials and Methods: We conducted a systematic review of studies investigating the use of CBM for the treatment of chronic pain. Articles were dually reviewed in accordance with Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines. Clinical recommendations were developed based on available evidence from the review. *Values and preferences* and *practical tips* have also been provided to support clinical application. The GRADE system was used to rate the strength of recommendations and quality of evidence.

Results: From our literature search, 70 articles met inclusion criteria and were utilized in guideline development, including 19 systematic reviews and 51 original research studies. Research typically demonstrates moderate benefit of CBM in chronic pain management. There is also evidence for efficacy of CBM in the management of comorbidities, including sleep problems, anxiety, appetite suppression, and for managing symptoms in some chronic conditions associated with pain including HIV, multiple sclerosis, fibromyalgia, and arthritis.

Chronic pain

1. Cannabinoid-medicine as monotherapy, replacement, or adjunct therapy, in people living with chronic pain, central or peripheral neuropathic pain.

Strong recommendation, Moderate-quality evidence

The strongest recommendations are for the THC formulations



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Chronic pain

1. Cannabinoid-medicine as monotherapy, replacement, or adjunct therapy, in people living with chronic pain, for mobility in those not achieving adequate response with other modalities.

Weak recommendation, Low-quality evidence

The strongest recommendations are for the THC formulations



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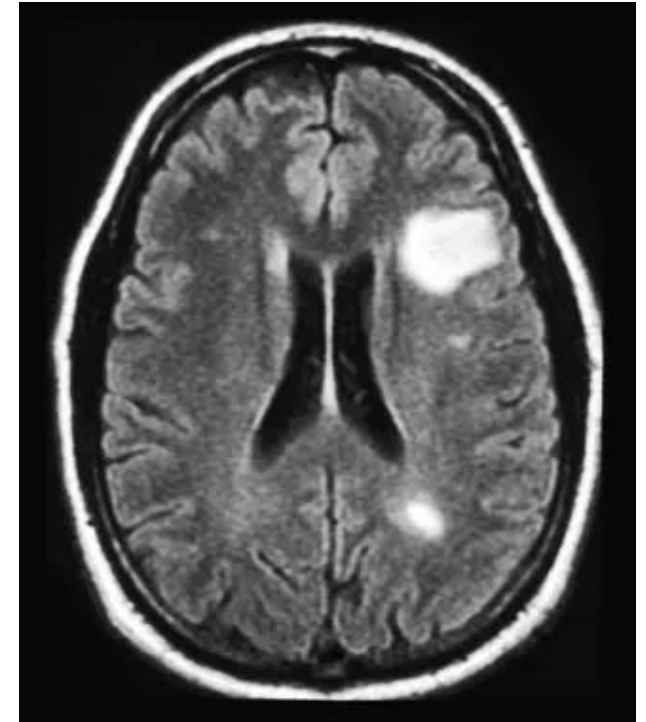
Female, 87 YRS

- Diagnoses: Ophthalmic Shingles, Dementia, T2D, COPD
- Presenting symptoms: Pain from shingles causing poor appetite and severe agitation
- Common medications prescribed for pain management was not effective
- Offered the following cannabis regimen: 1gm/day of CBD oil (CBD 25mg/ml; THC <0.5mg/ml) starting with 0.5ml ingested once daily to gradually 1 ml twice daily.
- Pain improved from 7/10 to 3/10 in her pain scale.
- Treatment outcome was positive, resident was able to return to normal: eat, feed self, stabilized mood, improved sleep

Multiple Sclerosis and chronic pain

1. Cannabinoid medicine as an adjunct treatment, for pain management in people with MS not achieving adequate response to other modalities

Strong recommendation, Moderate-quality evidence

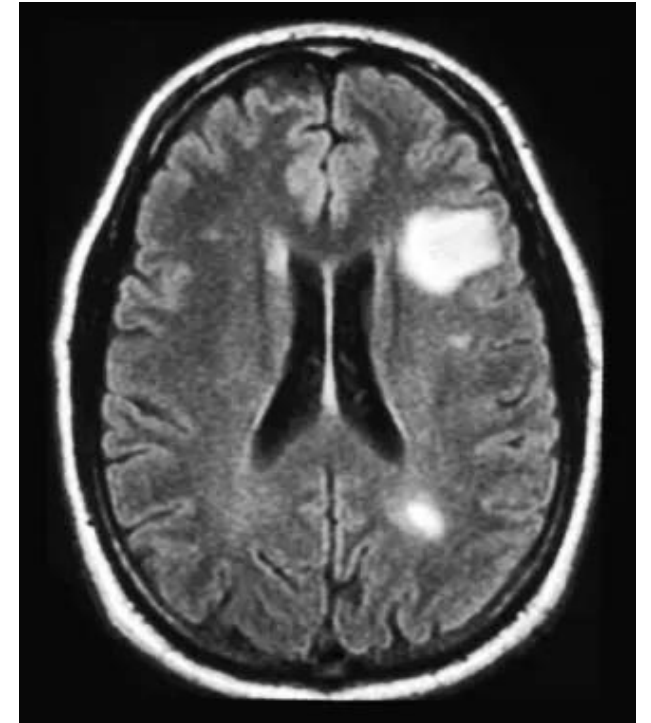


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Multiple Sclerosis and chronic pain

1. Cannabinoid medicine as an adjunct treatment, for the management of muscle spasm in people living with MS not achieving adequate response to other modalities

Strong recommendation, Moderate-quality evidence

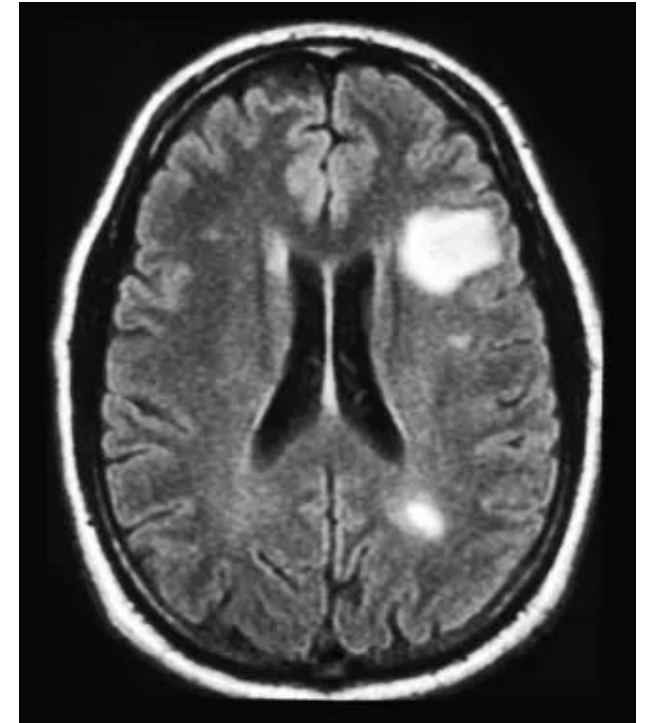


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Multiple Sclerosis and sleep disorder

1. Cannabinoid medicine as an adjunct treatment, for the management of sleep disorder in people living with MS not achieving adequate response to other modalities

Strong recommendation, low-quality evidence



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Arthritic condition and chronic pain

1. Cannabinoid medicine as an adjunct treatment, for the management of chronic pain in people living with arthritic conditions not achieving adequate response to other modalities

Strong recommendation, low-quality evidence



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Fibromyalgia and chronic pain

1. Cannabinoid medicine as an adjunct treatment, for the management of back pain, fibromyalgia pain, or other chronic pain in people living with fibromyalgia not achieving adequate response to other modalities

Strong recommendation, low-quality evidence



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Sleep disorder, sleep deprivation experiencing chronic pain

1. Cannabinoid-medicine as monotherapy, replacement, or adjunct therapy, to improve sleep and symptoms of sleep deprivation in people living with chronic pain not response to, or intolerant of other modalities or pharmacological treatment.

Strong recommendation, Moderate-quality evidence



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Female, 73YRS

- Resident's primary diagnosis is dependence on renal dialysis
- Resident has diagnosis of paranoid personality disorder, delusional disorder and depression. She also has a history of suicidal ideation and attempt
- Residents presenting symptoms: Pain management, sleep issues
- Resident has a long history (since the age of 17) of dependence on multiple narcotics such as hydromorphone and fentanyl for pain management
- Started on medical cannabis which is primarily used for pain management, mood and sleep.
- All hydromorphone has been discontinued and fentanyl has decreased from 75mg to 25mg, with a plan to discontinue in the upcoming weeks

Loss of appetite and chronic pain

1. THC-dominant cannabis for people with problematic loss of appetite in association with chronic pain, over no treatment.

Strong recommendation, Low-quality evidence



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Chronic pain and dissatisfaction with opioids

1. Cannabinoid-medicine as adjunct to opioids, for the management of chronic pain in those experiencing unsatisfactory analgesia form opioid treatment.

Strong recommendation, Moderate-quality evidence



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Opioid-Sparing for chronic pain

1. Cannabinoid-medicine as adjunct treatment among people using moderate/high dose of opioids (> 50mg of morphine equivalent) for the management of chronic pain and/or to increase opioid-sparing.

Strong recommendation, Moderate-quality evidence



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Contraindications and cautions:

- Cannabis should be cautioned in those:
- Under 25 year old for THC
- History of hypersensitivity of cannabis
- Severe cardio-pulmonary disease
- Taking anticoagulants
- Asthma or COPD (for inhalation)
- Severe liver or renal disease
- Personal or family history of paranoia or schizophrenia or bipolar disorder





A practical approach to medical cannabis



Treating the whole patient



- Chronic pain is best treated through **multidisciplinary therapies**
- Multi-modal approach to pain management
 - Physical therapies
 - Psychotherapy
 - Spiritual care
 - Lifestyle management
 - Interventional therapies
- Develop **realistic goals** to reduce the suffering of pain

Inter-professional approach to pain management

assessment

- **Focused assessment using the 'Pain Triad'**
 - Inflammatory and/or neuropathic pain
 - Previous treatments, both successful and unsuccessful
 - Emotional distress associated with pain symptoms
 - Underlying mental health conditions
 - Sleep disturbances associated with pain symptoms
 - Underlying sleep conditions



Assessment and treatment plan



- Review PMHx, medication, and social Hx
- Level of risk
- Review cannabis use Hx
- Cannabis tolerant vs. cannabis naïve
 - Amount
 - Frequency
 - Reason
 - Consumption methods
 - Sources
 - THC concentration if known
 - Treatment Goals and follow up plan



Overdose

No documented evidence of death exclusively attributable to cannabis overdose to date



Challenges in Long term care settings:

- Cost is a barrier
- Physician buy in/willingness to prescribe
- Insufficient evidenced based literature/RCTs
- Requires consistent follow up by prescriber inter professional team
- Process is time consuming for the prescriber and family/resident
- Requires family involvement with ordering/purchase

In summary

- Cannabis use is increasing in the elderly population
- There is better guidance regarding how to use and how to prescribe
- Start low and go slow approach
- Anecdotal outcomes are positive
- Requires clinician buy-in and support





Selected References:

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