

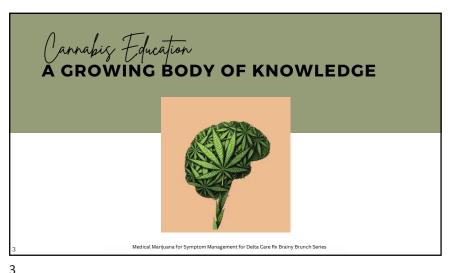
**OBJECTIVES** 



- Recognize the necessity of providing cannabis education to nursing professionals
- Establish nursing's role within the realm of medical cannabis
- Explain the legal framework concerning medical marijuana (MMJ) at both the state and federal levels
- Identify key components of the cannabis plant and their respective effects within the body
- Describe the Endocannabinoid System and its relation to cannabis
- Understand formulations, basic dosing, and routes of administration
- Participate in an open and candid conversations regarding the therapeutic applications of cannabis
- Distinguish medications used in hospice that are at risk for drug-drug interactions with cannabis and other related products

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· Legal and Regulatory · Lack of Research • Stigma and Misinformation Medical Curriculum Gaps · Limited Continuing Education · Lack of Standardization · Patient Education Safety Concerns · Cultural and Regional Differences Limited Access Medical Marijuana for Symptom Management for Delta Care Rx Brainy Brunch Series

## Rolling out the Green Carpet FOR NURSING EDUCATION · Healthcare trainees in general lack sufficient knowledge about

- medical cannabis & do not feel prepared to speak with patients on this topic
- As a nurse, you'll regularly come across patients using cannabis, regardless of whether you practice in a state where cannabis is fully legal for recreational use or in a region where medical cannabis is a viable option
- National Council of State Boards of Nursing (NCSBN) states that nursing professionals and students should be educated on six principles of essential knowledge about cannabis:
- o Current state of legalization and of medical and recreational
- o Federal laws and current legislation around patient use of medical cannabis
- o The endocannabinoid system
- Cannabis pharmacology and the research associated with the medical use
- Safety considerations
- Ways to approach patients without judgment regarding the patient's choice of treatment

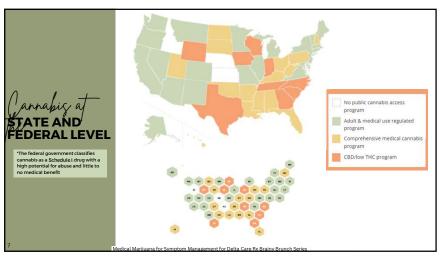
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Laws & REGULATIONS

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· No technical difference between marijuana used for medical or recreational purposes Reveational vs.
MEDICAL CANNABIS • Purchased for the purpose of experiencing the psychoactive effects and enjoyment vs. Used to alleviate medical symptoms, such as pain, nausea, or seizures • Similar THC concentration in both types · Key distinction lies in how they are sold MMJ requires authorization from a healthcare provider and state o Access typically granted through state-approved medical programs or dispensaries. • Recreational marijuana available to anyone over the age of 21 in • Recreational purchases may be exempt from sales and use tax MMJ establishments may be exempt from specific cannabis • MMJ may require annual certification fees and payment to secure an identification card Medical Marijuana for Symptom Management for Delta Care Rx Brainy Brunch Seri



Cannabis vs Marijuana vs Hemp

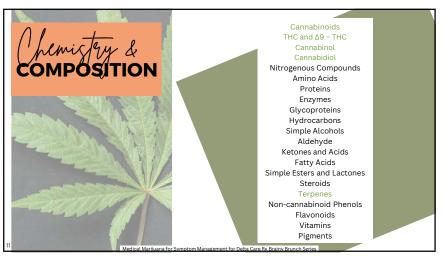
Cannabaseae Farnily Genus: Cannabis Species: Cannabis sativa, Cannabis indica, and Cannabis ruderalis

Cannabis

A plant with many names - marijuana, weed, pot, cannabis, hash, etc.
Consumed for medical and non-medical (recreational) purposes
Has hundreds of chemical compounds, including cannabinoids and terpenes
A broader classification that contains both hemp plants and marijuana plants

Hemp
Refers to varieties of cannabis that contain 0.3% or less delta-9 THC
Textiles, biofuels, seeds, oils, skin care products, beverages

Marijuana
Refers to parts of or products from the plant Cannabis sativa that contain substantial amounts of tetrahydrocannabinol (THC)



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**CANNABINOIDS** 

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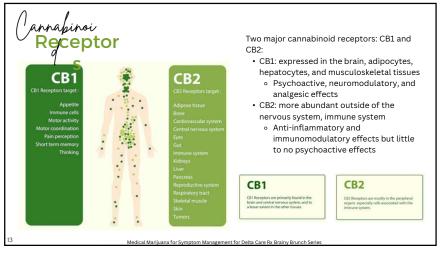
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Cannabinoids encompass any compound capable of influencing the body's endocannabinoid system (EC system)

- The EC System works by regulating the flow of signals that are being sent between cells
  - EC system is the most widespread receptor system in the human body
  - o Connected to almost every major organ system in our bodies
- When the EC system is not functioning properly due to lack or abundance of endogenous cannabinoids, phytocannabinoids consumed may help restore balance
- Everybody's EC system is different
  - Consumers have different experiences when using Cannabis even if it is the same dose, product or strain

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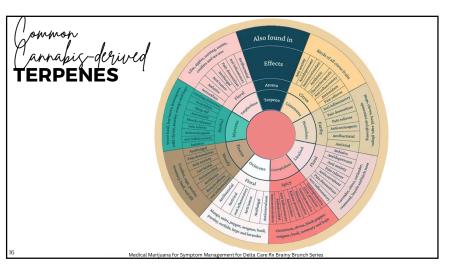




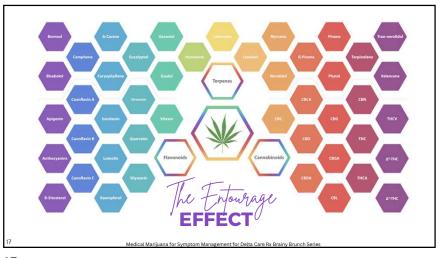
Phytocannapinoids • Cannabis plant produces between 80 and 100 cannabinoids • Enormous variation in quantitative ratios • Two main cannabinoids are THC and CBD • THC has strong psychoactive effects ('high') • Primarily binds with CB1 receptors • Partial agonist activity at CB1 and CB2 CBD has an anti-psychoactive effect that controls or moderates the 'high' o Partial agonist of the CB2 receptor and noncannabinoid receptors o Helps regulate how these CBs and cannabinoids interact • Others remain largely understudied Biological activity remains unknown

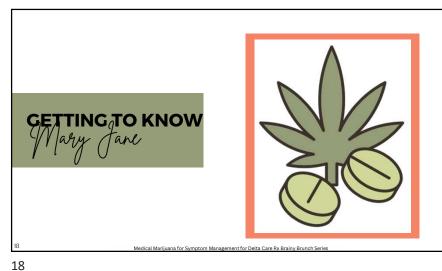
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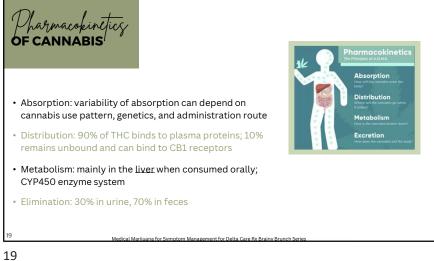


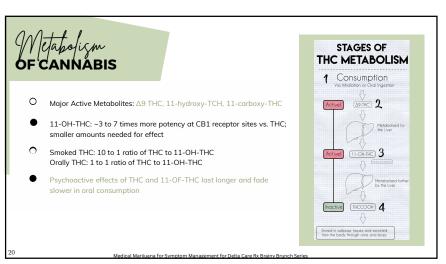


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- · Common Strategy: 'Start low and go slow'
- Use the minimally effective dose require to address a patient's medical needs
- Repeated high doses and exposure can cause the brain to reduce the density of CBRs in the body
- Typical dosing is between 2.5 to 10 mg of THC
  - Address a wide range of patient symptoms
- Inter-individual variability vs. Intra-individual variability



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Available PRODUCTS

- Different strains of dried cannabis flower (smokeable medical cannabis), pre-rolled joints, & blunts
- · Oils, tinctures
- Concentrates, waxes, budder, shatter, kief, Rick Simpson Oil (RSO)
- · Capsules, tablets
- Topicals: ointments, lotions, patches, salves
- Suppositories
- Edible products, drinks, drink mixes

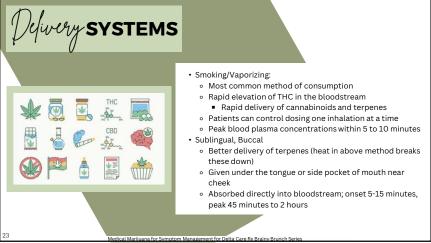


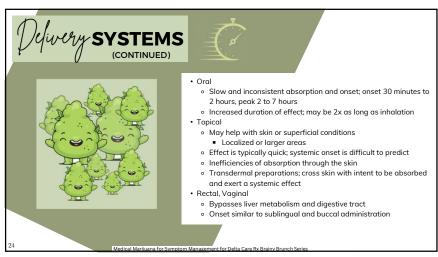
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# Adverse Effects & SAFETY CONCERNS



#### Short-term effects:

- Coughing (inhaled), dry mouth/throat
- · Red, irritated eyes
- · Dizziness, lightheadedness, drowsiness
- Tachycardia, hypotension, palpitations
- · Confusion, anxiety
- Nausea



#### Long-term effects:

- · Bronchitis in long-term smokers
- · Cognitive deficits in long-term, heavy consumers
- · Cannabis hyperemesis syndrome

### Disease state concerns:

- · Schizophrenia, bi-polar disorder, severe depression
- · Heart disease, hypertension
- · Angina, arrhythmias. h/o stroke

### Special populations:

- Elderly
- Pregnant & Lactating patients
- Pediatrics

#### Other safety concerns:

· Store in a safe and secure place

### Symptoms of Dependency

- Excessive, regular (daily) use of cannabis
- Tolerance that requires increased dosing to achieve
- Compulsion to use cannabis whenever available or offered
- Excessive time and resources spent on cannabis
  - · Acquisition, possession, and intake
- Use resulting in a failure to fulfill major role obligations
- · Important activities are given up or reduced because of cannabis use
- · Use in hazardous situations



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## Symptoms of Withdrawal

- Irritability, anger, or aggression
- · Nervousness or anxiety
- Sleep difficulty (i.e., insomnia, disturbing dreams)
- Decreased appetite or weight loss
- Restlessness
- Depressed mood
- Physical symptoms: abdominal pain, shakiness/tremors, sweating, fever, chills, or headache
- Peak intensity on day 4 (range day 1 to 8)



Interactions



Cannabis is metabolized by the Cytochrome P450 enzyme system

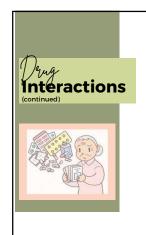
- Substrate of CYP2C9 (major), CYP3A4 (major)
- Cannabinoids either activate or inhibit the activity of liver enzymes
- CYP450 enzyme system is responsible of metabolism of many medications; interactions can increase or decrease the effect

Cannabis can potentiate the effects of alcohol, benzodiazepines, and opiates

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Medications that can INCREASE the effects of cannabis:

- · Clarithromycin, erythromycin
- Fluconazole, itraconazole, ketoconazole
- · Verapamil, diltiazem, amiodarone
- · Ritonavir, atazanavir

Medications that can **DECREASE** the effects of cannabis:

- · Phenobarbital, phenytoin, carbamazepine
- · Rifampin, rifabutin
- · St. John's Wort
- Ritonavir

Cannabinoids can affect levels of other drugs:

- · Increased levels of clobazam, warfarin, tacrolimus
- · Increased clearance of theophylline, olanzapine

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Moderate- to high-quality evidence is available for effective treatment with cannabis for the following conditions:

- Cachexia
- · Chemotherapy-induced nausea and vomiting
- Pain (resulting from cancer or rheumatoid arthritis)
- Chronic pain (resulting from fibromyalgia)
- Neuropathies (resulting from HIV/AIDS, MS, or diabetes)
- Spasticity (from MS or spinal cord injury)

Single moderate- to high-quality clinical study:

- Reduction of seizure frequency (Dravet syndrome and Lennox-Gastaut syndrome)
- · Reduction of posttraumatic stress disorder (PTSD) nightmares
- Improvement in tics (Tourette syndrome)

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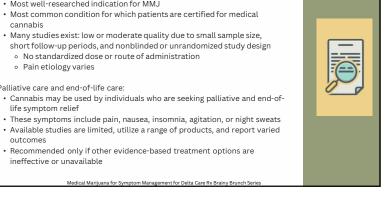
## (finica/APPLICATIONS

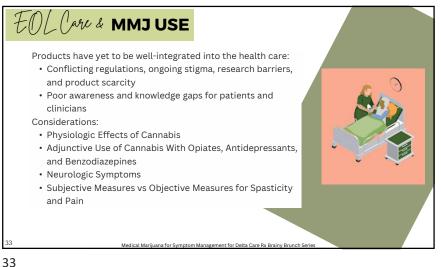
#### Chronic Pain:

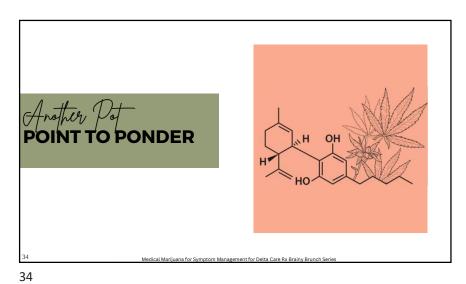
- · Most well-researched indication for MMJ
- Many studies exist: low or moderate quality due to small sample size, short follow-up periods, and nonblinded or unrandomized study design
  - No standardized dose or route of administration
  - Pain etiology varies

Palliative care and end-of-life care:

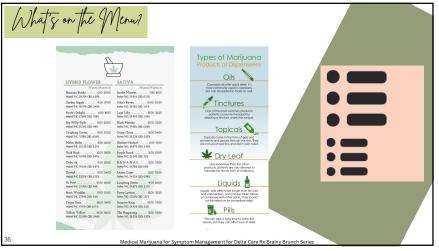
- life symptom relief
- These symptoms include pain, nausea, insomnia, agitation, or night sweats
- outcomes
- ineffective or unavailable

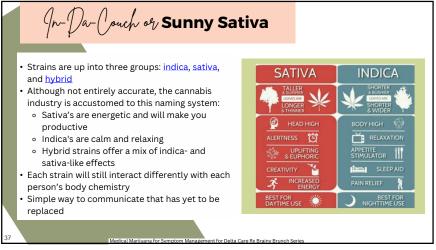












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🗽 (cannabidiol) Indication(s): to treat seizures associated with Lennox-Gastaut syndrome, Dravet syndrome, or tuberous sclerosis complex in patients 1 year of age and older. Lennox-Gastaut Syndrome or Dravet Syndrome: Starting dosage is 2.5 mg/kg by mouth twice daily (5 mg/kg/day). After one week, the dosage can be increased to a maintenance dosage of 5 mg/kg twice daily (10 mg/kg/day). Maximum recommended maintenance dosage of 10 mg/kg twice daily (20 mg/kg/day) Epidyolex\* Tuberous Sclerosis Complex: The recommended starting dosage is 2.5 mg/kg by mouth twice daily (5 mg/kg/day). Increase the dose weekly by 2.5 mg/kg twice daily (5 mg/kg/day) as tolerated, to a recommended maintenance dosage of 12.5 mg/kg twice daily (25). mg/kg/day) • Obtain serum transaminases (ALT and AST) and total bilirubin levels in all patients prior to starting treatment · EPIDIOLEX can cause transaminase elevations o Concomitant use of valproate and higher doses of EPIDIOLEX increase the risk of transaminase elevations • Serum transaminases and total bilirubin levels should be obtained at 1 month, 3 months, and 6 months after initiation of treatment Adverse effects: somnolence, decreased appetite, diarrhea, fatigue, malaise, and rash \*\*Non-preferred hospice medication: considered a last-line, adjunctive agent, and costprohibitive Medical Marijuana for Symptom Management for Delta Care Rx Brainy Brunch Series

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Indications): Anorexia in patients with AIDS, Chemotherapy-induced nausea and vomiting (CINV), & Obstructive sleep apnea, moderate to severe

Initial: 2.5 mg twice daily (1 hour before lunch and dinner); May increase dose gradually based on response and tolerability (maximum: 20 mg per day [in divided doses])

\*\*For CINV: 5 mg/m2 administered 1 to 3 hours before chemotherapy, then give 5 mg/m2/dose every 2 to 4 hours after chemotherapy for a total of 4 to 6 doses/day; increase dose in increments of 2.5 mg/m2 based on response and tolerability (maximum: 15 mg/m2/dose)

#### Considerations:

 If unable to tolerate, considering reducing the dose Adverse effects: >10%. Central nervous system: Euphoria (antiemetic: 24%; appetite stimulant: 8%), hypotension, symptoms similar to cannabinoid hyperemesis syndrome

\*Non-preferred hospice medication for nausea, vomiting, and appetite induction (due to cost and lack of studies showing efficacy)



(Marinol)
Thoughts

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- Medical cannabis is legal in much of the United States as well as other parts of the world and is increasingly utilized in clinical encounters
- With rapidly changing laws and increasing access to cannabis, incidence and prevalence of cannabis use has also changed
- There are several formulations of <u>medical cannabis</u>, with different routes of administration. Medical cannabis has varying concentrations and ratios of cannabinoids, and formulations are usually characterized by the ratio of delta-9tetrahydrocannabinol (THC) and cannabidiol (CBD)
- Chronic pain is one of the most common applications for medical cannabis. Other conditions include, but are not limited to, multiple sclerosis, posttraumatic stress disorder (PTSD), chemotherapy-induced nausea, and seizure disorders.
- Certain co-occurring conditions require caution
- · Certain medications have important interactions with cannabis
- Choosing a starting product and route of administration is based on the risks and benefits of each of the available products
- Medical cannabis education among healthcare trainees is lacking for several reasons
   There is a need for a baseline body of evidence and knowledge for those in roles providing care to patients who use cannabis medicinally

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THANK YOU FOR ATTENDING

Please contact hayley, kay@deltacarerx.com for any comments, questions, or concerns.

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