

# A PRIMER ON MARIJUANA AND ITS DENTAL IMPLICATIONS

*Hosted by the*

## ***California Dental Association*** ***The Art and Science of Dentistry***

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### **I. *General information***

- A. A weed-like plant that has been used a source of food, medicine, as a recreational drug, and fiber for clothing since prehistoric times.
- ganja, sensimilla, giggle smoke, mary jane, dab, scat, shatter
  - the term “**dope**” rarely used today more contemporary term is weed”
  - April 20 is considered “Annual Cannabis Day” (**the number “420” refers to marijuana**)
- B. Identification of cannabis
- Plant stem will have an odd number of leaves (3, 5, or 7).
  - Each leaf exhibits a serrated edge and the vein pattern is unique
- C. Three Species
1. cannabis sativa
    - plants are tall and sparse (may be up to 20 feet)
    - leaves are long and slender
    - usually grown outdoors
    - ~13 weeks to mature with lower yields
    - more potent than indica species
    - higher concentrations of tetrahydrocannabinol (THC) resulting in more mood changes, perception, behavior, and hallucinations
  2. cannabis indica
    - plants are short and compact
    - leaves are broader and short
    - usually grown indoors (shorter growing season)
    - higher levels of cannabidiol (CBD) makes you more drowsy than sativa

- may useful as a sedative, treating epilepsy resistant to traditional medications, relieve pain, muscle spasms and tremors
  - 3. cannabis ruderalis-not significant
- D. Parts of the Plant
1. Seeds, leaves, and stems-low concentration of psychoactive cannabinoids
    - often referred to as “**marijuana**”, “**grass**”, “**weed**”
    - seeds do not contain any psychoactive cannabinoids-used to grow more plants
    - ground up seeds, stems, and leaves are rolled into “**joints**” or “**spliffs**”
    - as the joint burns down it is referred to as a “**roach**”
    - cigars can be hollowed out and packed with marijuana called “**blunts**” or “**rillos**”
    - **Hemp** contains less than 0.3% THC
      - used to make rope, soaps, cosmetics, clothing, and car parts
      - Hemp lollypops can be purchased in shops selling drug paraphernalia
  2. The “Flowers or “buds”
    - Sex of plant very important-female plant contains higher concentrations of psychoactive chemicals
    - **Sinsemilla** (without seeds)
    - The buds contain hair-like projections called “trichomes”
      - Trichomes contain a resin which is released with heat and pressure-called **hashish**
      - **Hashish** has the highest concentration of psychoactive cannabinoids
- E. Chemical composition of cannabis
1. Approximately 483 compounds have been identified 65 have been identified as cannabinoids (active)
  2. proportion and type of cannabinoids vary according to species, variety (strain) and growing conditions.
  3. strain is named by the grower according to smell, appearance, and psychoactive effects

F. Pharmacology

1. Cannabinoid receptors have been located in the central nervous system (CB<sub>1</sub>) and as well as the peripheral nervous system (CB<sub>2</sub>). These receptors are referred to as the endocannabinoid system of activity.
2. The endogenous cannabinoid is named **anandamide**.
3. CB<sub>1</sub> receptors are located in the basal ganglia, limbic system, hippocampus, and cerebellum. They are absent in the medulla oblongata which is responsible for respiration and cardiovascular functions.
4. CB<sub>2</sub> are located mostly in the spleen and associated with the immune system which might be responsible for the anti-inflammatory properties of Marijuana

G. Clinical pharmacologic effects

1. dose-dependent
2. determined by set and setting of the intoxicated person
3. euphoria (mellowing out)  $\implies$  everything becomes comical  $\implies$  problems disappear, munchies  $\implies$  time and space distortion  $\implies$  dysphoria  $\implies$  paranoia, fear, anxiety  $\implies$  accidental death
4. signs/symptoms of marijuana use
  - a. blood shot eyes
  - b. slow to respond
  - c. slurred speech
  - d. glazed eyes
  - e. odor on breath and clothes
5. Excretion/detection
  - a. casual user-2 to 4 days
  - b. heavy user-30 to 60 days

H. Routes of administration

1. smoked in the form of a cigarette (joint, spliff, etc.)
  - most efficient method
  - quick onset, short duration
  - smoke is dry and harsh
  - water pipe, hookah, "Bong"
2. vaporized in its native state (vegetative material)
  - almost as efficient as smoking without the harsh dry feeling
  - use commercial vaporizers
  - E-cigarettes can be used

3. the cannabinoids can be extracted, concentrated and vaporized
  - butane hash oil (BHO)
  - “dab, “scat”, “shatter”
4. cannabinoids extracted and incorporated into food such as candy, brownies, cakes, etc.
  - very slow, irregular absorption
  - slow onset, long duration
  - cannabutter

## II. Medical Uses

- A. Glaucoma
  - need to smoke 6 to 8 times a day-not practical
- B. Multiple sclerosis
- C. Chronic pain
- D. Antiemetic
- E. Hypnotic/Sedative
- F. Epilepsy
- G. FDA approved cannabinoid-like synthetics
  1. approved for anorexia associated with weight loss in patients with AIDS
  2. To treat nausea and vomiting associated with cancer chemotherapy
  3. dronabinol (Marinol)-AbbVie, Inc.
  4. dronabinol (Syndros)-INSYS Therapeutics
  5. nabilone (Cesamet)-Valeant Pharmaceuticals

## III. Impact on the Dental Practice

- A. Patient
  - used by patient to reduce anxiety
  - marijuana is a CNS depressant and may amplify oral or IV sedation
  - short term memory is impaired. Give written take home instructions
  - have witness for consent forms
  - heavy 3 or 4 times a week smokers have characteristic stain on teeth
- B. Dentist/Staff
  - psychomotor skills can be impaired for 24 hours after using marijuana
  - Questions: Should dentists be allowed to use marijuana for medical purposes and continuing practicing?
  - How do you measure impairment?

C. Family

- Is Marijuana addictive-YES. According to the National Institute of Drug Abuse (NIDA) research 9% of marijuana users will become dependent and this increases to 17% when they begin in teen years.
- According to NIDA heavy marijuanas smokers function at a lower intellectual level compared to non-smokers affecting attention span, memory, cognitive ability, and psychomotor skills

IV. Useful Websites for marijuana information

[www.drugfree.org](http://www.drugfree.org)

[www.dea.gov](http://www.dea.gov)

[www.drugabuse.gov](http://www.drugabuse.gov)

[www.nida.nih.gov](http://www.nida.nih.gov)

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