

GENERAL EFFECTS OF TOBACCO SMOKING

It is well known that smoking cigarettes is not a healthful activity. In fact, the first sentence of the Centers for Disease Control 'Overview on the Health Effects of Cigarette Smoking' states that 'tobacco smoking harms nearly every organ in the body.' Some of the most important effects follow:

Besides obvious high risk for oral and lung cancer, as well as respiratory diseases, tobacco is also associated with increased risk for cardiovascular diseases such as coronary heart disease and stroke by up to four times. Coronary heart disease is the leading cause of death in the United States and has gained particular attention in dentistry because of its relationship to periodontitis. Both cardiovascular disease and periodontitis are inflammatory diseases which exacerbate each other.

For postmenopausal women, smoking is associated with lower bone density and increased risk for hip fracture.

Tobacco increases the risk for infertility, and causes damage to infants in terms of pre-term low birth weight, still birth, pre-term delivery and sudden infant death syndrome.

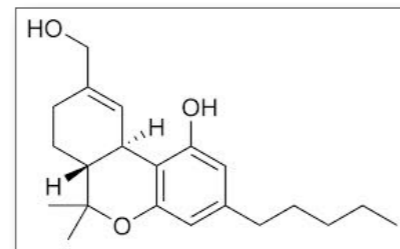
Tobacco is a risk factor for 6 of the 8 leading causes of death world-wide. It causes 1 in 5 deaths in the US per year, greater than all deaths caused by HIV, illegal drug use, alcohol use, motor vehicle injuries, suicides and murders combined. It reduces life expectancy by about 14 years.

As will be expounded in the coming panels, smoking tobacco is undeniably worse than smoking marijuana.

GENERAL CONSIDERATIONS OF MARIJUANA SMOKING

Now that cannabis use is legal in our state, it seems relevant to review the effects of marijuana not only on the health in general, but of course, with regard to oral health in particular. The topic is quite pertinent, as according to a recent review in the New England Journal of Medicine, marijuana is the most commonly used 'illicit' drug in the United States, with 12% of people aged 12 or older reporting use in the last year, with particularly high rates among young people.

The immediate effects of smoking cannabis are a pleasant, dreamy state, with impaired attention, cognition, and psychomotor performance. Although seemingly a pleasurable and harmless activity, smoking marijuana has multiple general ill effects. Those effects are particularly worse and irreversible for young people under the age of 21 whose brains are still developing as the tetrahydrocannabinol (THC - the primary



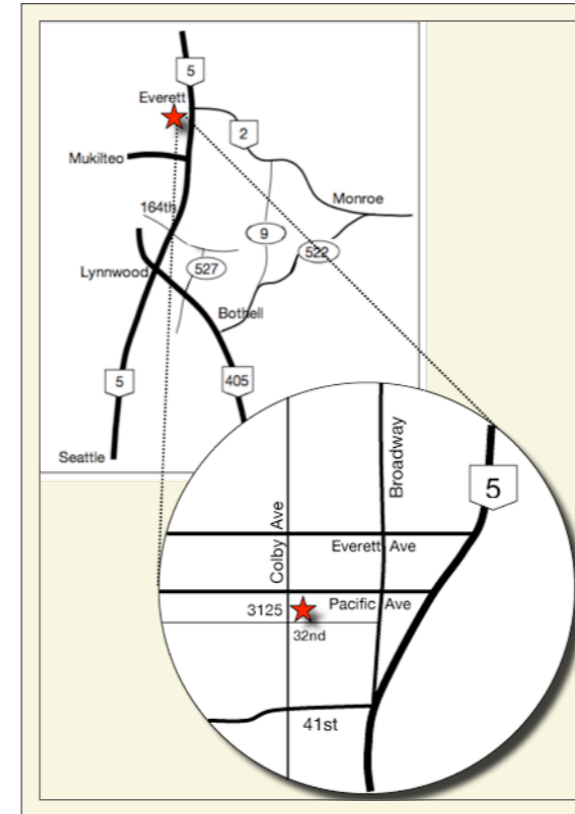
Chemical Structure of THC

active ingredient in marijuana) has its greatest effect on brain function. This, as well as some potentially beneficial effects of marijuana use, will be reviewed in greater detail in the following panels of this issue of **ProbeTips**. We will also compare tobacco smoking to marijuana smoking.

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Pamela A Nicoara DDS MSD PLLC

PERIODONTOLOGY IMPLANTOLOGY ORAL MEDICINE



3125 Colby Avenue, Suite H
Everett WA 98201
T: 425-374-5380 F: 425-374-5382

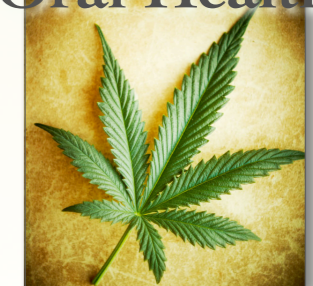
www.NICOARAPERIO.com
doctor@NICOARAPERIO.com

PROBE TIPS

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NEWSLETTER

BY PAMELA NICOARA DDS MSD

Marijuana and Oral Health



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Marijuana and Oral Health

GENERAL EFFECTS OF MARIJUANA SMOKING

Despite prevailing opinion that marijuana smoking has little negative outcomes, there are several important adverse consequences of which to take note:

Adverse Effects: Marijuana smoking has definite systemic cardiovascular, immunosuppressive and respiratory effects. These effects are particularly strong in those who start smoking during adolescence, or have heavy or long term use of marijuana.

High Level of Confidence/Scientific Evidence:

1. Risk for Addiction to Marijuana:

For those who experiment with marijuana, 9% will become addicted. In those who begin using marijuana as a teenager, the risk elevates to 17%, and for those who smoke daily, the risk of addiction is 25-50%. Nearly 3 million people met the criteria for addiction to marijuana in 2012, compared to over 8 million addicted to alcohol. The evidence suggests a moderate degree of confidence that addiction to marijuana may lead to use and addiction to other drugs.

2. Risk for Motor Vehicle Accidents
3. Symptoms of Chronic Bronchitis
4. Diminished Lifetime Achievement

Moderate Level of Confidence:

5. Schizophrenia (in those genetically susceptible)
6. Depression or Anxiety
7. Abnormal Brain Development with Lower IQ and Impaired Short Term Memory
8. Altered Judgement increasing the risk of acquiring a sexually transmitted disease with decreased immune function and increasing risk of viral and bacterial infections.

Low Level of Confidence:

9. Lung Cancer

With so much concern over the negative consequences, there are several positive aspects to the use of marijuana. Research is currently focusing on how to harness the medical benefits of the marijuana plant without exposing sick people to its intrinsic risks.

Beneficial Effects:

1. Stimulating Appetite for patients with AIDS and associated wasting syndrome.
2. Reducing chemotherapy induced nausea/vomiting, severe pain, and some forms of spasticity.
3. Reducing intra-ocular pressure in Glaucoma.
4. Reducing inflammation in Rheumatoid Arthritis, Crohn's disease and ulcerative colitis.

TOBACCO SMOKING VS MARIJUANA SMOKING AND PERIODONTITIS

It is well known that tobacco smoking increases the risk of bone loss, loss of connective tissue around teeth, tooth loss, and edentulism; all signs of periodontitis. Data from NHANES III (National Health and Nutrition Examination Survey 1988-1994) published in 2000 reported that tobacco smoking increases the risk of developing periodontitis by up to 6 times, and that this risk is dose dependent: the more you smoke tobacco the greater your risk. Even 2nd hand tobacco smoke nearly doubles the risk of developing periodontitis. They conclude that 41% of all periodontitis cases in the United States was attributable to tobacco smoking.



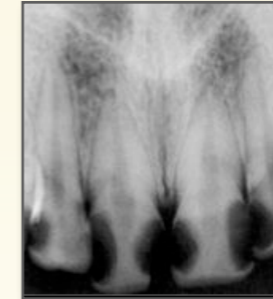
The same is not true, however, for marijuana smoking. There is no strong evidence to indicate increased risk for periodontitis from marijuana singularly, other than secondary risk from poor oral hygiene when using marijuana regularly.

OTHER ORAL EFFECTS OF MARIJUANA SMOKING

Smoking cannabis regularly causes chronic inflammation in the oral mucosa which leads to gingivitis, gingival hyperplasia, and uvulitis. Other common problems are listed below.

Xerostomia:

Marijuana smoking is associated with greater risk of dry mouth compared to cigarette smoking (70% vs 19%) leading to greater risk of caries and periodontitis. This is exacerbated by typically poorer oral hygiene in persons who smoke marijuana regularly.



Taken from Google Images

Leukoedema: Considered a variation of normal anatomy, leukoedema may also be a response to low grade chronic irritation like marijuana smoke. It is more common in persons smoking tobacco, chewing betel nut, chewing coca leaf, and cheek biting. With long term irritation, negative more permanent changes in the soft tissues can occur, such as leukoplakia, the precursor of cancer.



Taken from Google Images

Tachycardia: Use of local anesthetics with epinephrine prolong the tachycardia and vasodilation produced by an acute dose of cannabis.

Candida albicans:

Oral yeast infection risk is higher in marijuana smokers compared to tobacco smokers or non-smokers.

OTHER FORMS OF MARIJUANA

Smoking marijuana is the most common form of administration because it is easy to prepare and the effects are rapid. It is important to note that a marijuana cigarette is often combined with tobacco to assist in burning, and being hand rolled, would not have filters as would a mass produced tobacco cigarette. Using a **water pipe**, or 'bong', instead of a cigarette allows the smoke to be inhaled through a layer of water which removes some of the tar and irritants.

Vaporization of the marijuana, which consists of heating the cannabis to a level that avoids combustion but forms cannabinoid vapors, avoids production of irritating respiratory toxins, and may be a potential route of administration for patients with chronic and debilitating diseases.

It is also important to recognize that two other forms of cannabis other than marijuana exist: hashish and hash oil. These consist of resins from the flowers and do not include the leaves as marijuana does. They offer more potent forms of THC administration with delayed but prolonged effects. These are also either smoked, vaporized, or alternatively baked and eaten in food. However, ingestion reduces cannabis absorption by 25% due to first pass metabolism by the liver.

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