

Welcome to the Future of Medicine



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GLOSSARY OF TERMS

CBN - degraded THC - benefits indicated - sedation (sleep), anticonvulsant, pain relief, anti-cancer, burn treatment, antibacterial, bone growth

CANNIBIS - a tall plant with a stiff upright stem, divided serrated leaves, and glandular hairs. It is used to produce hemp fiber and as a drug.

CANNABINOID - Various naturally-occurring, biologically active, chemical constituents (such as **cannabinol**) of **hemp** or **cannabis**, including some that possess psychoactive properties (such as **THC** and to some extent **CBN**)

MARIJUANA - cannabis, especially as smoked or consumed as a psychoactive (mind-altering) drug.

DECARBOXYLATION - removal, by heating, of a carbon molecule to transform THCA (Tetrahydrocannabinolic Acid) into THC

HEMP - a cousin plant of Marijuana that contains less than .03% of THC

EXOCANNABINOID - Cannabinoids produced outside the body (by plants or chemically)

ENDOCANNABINOID system - the internal body system that interacts with cannabinoids to create homeostasis (CB1, Nervous System/CB2 Endocrine System)

EXTRACTS - Concentrates of the cannabinoids produced by a CO2 or alcohol process

EDIBLES - Cannabis ingested either in solid or liquid form

SHATTER - (also wax, honeycomb, oil, crumble, sap, budder, pull-and-snap) - various forms of extractions and concentrations of cannabinoids

TERPENE - the aromatic compounds secreted by the leaves of cannabis plants., as well as other plants, bugs and fruits.

THC - Tetrahydrocannabinol - a psychoactive cannabinoid

TINCTURE - cannabinoids dissolved in pure alcohol for ingestion. Cannabinoids are insoluble in water

TOPICAL - Creams, lotions and other forms of cannabis applied to the skin


VAPE - Smoking form of intake of cannabis (and nicotine for that matter)

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“Marijuana is an unstable mixture of over 400 chemicals including many toxic psychoactive chemicals which are largely unstudied and appear in uncontrolled strengths.”

[California Narcotics Officers Association](#), Official policy statement “The Use of Marijuana as a Medicine” Oct. 31, 2005

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HISTORY OF MEDICAL MARIJUANA

2700 BC - Chinese Emperor Shen Nung Said to Discover Healing Properties of Marijuana

"According to Chinese legend, the emperor Shen Nung (circa 2700 BC, also known as Chen Nung) [considered the Father of Chinese medicine] discovered marijuana's healing properties as well as those of two other mainstays of Chinese herbal medicine, ginseng and ephedra."

[Janet Iov, PhD, Alison Mack, Marijuana as Medicine: Beyond the Controversy, 2001](#)

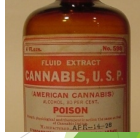
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1930s - American Pharmaceutical Firms Sell Extracts of Marijuana as Medicines

Parke-Davis cannabis lecture bottle
Source: [antipain.com/antipain.com/processed/Oct_22_2011/](#)

"As demand for marijuana-based medications accelerated, pharmaceutical firms attempted to produce consistently potent and reliable drugs from hemp. By the 1930s at least two American companies – *Parke-Davis* and *Eli Lilly* – were selling standardized extracts of marijuana for use as an analgesic, an antispasmodic and sedative. Another manufacturer, *Grimault & Company*, marketed marijuana cigarettes as a remedy for asthma."


[Marijuana as Medicine: Beyond the Controversy, 2001](#)



The Controlled Substances Act unfortunately lumped all cannabis together, failing to recognize the [differences between marijuana and hemp](#). The act, which makes cannabis illegal under federal law, is still in place today.

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ANOTHER EXAMPLE



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Expanding acceptance of Medical Marijuana and Recreational Marijuana use

Updated numbers: 34 states approved Medical Marijuana, 11 states and the District of Columbia approved adult, recreational marijuana. (New Jersey Considering it now)



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What is driving the growth of Medical and Recreational Marijuana use?

- Changing societal views and morals
- Money - public coffers
- Research into cures for a number of difficult diseases
- Investment opportunities



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California was the first state to approve medical marijuana in 1996.

Texas allow the use of low THC Medical Marijuana for only Cancer, Dravet syndrome by the "Compassionate Use Act". A proposed law would expand use for glaucoma, HIV, Alzheimer's, PTSD, autism, chronic pain, nausea and muscle spasms.

Illinois, at the end of January 2019, is to begin a longer range Medical Cannabis Pilot Program as an alternative to Opioids.

Hemp derived CBD are now legal at the federal level with the passage of the 2018 Farm Bill.

New Jersey - May 16, 2019 A new medical cannabis bill would eliminate sales tax more quickly, increase monthly product limit to 4 oz., and includes a pilot program for home grow cannabis.

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RECENT DEVELOPMENTS

1/14/2019 PAIR OF STUDIES LINK CANNABIS USE TO REDUCED RISK OF ALCOHOL-INDUCED PANCREATITIS & ALCOHOLIC GASTRITIS

1/15/2019 ILLINOIS GOVERNOR J.B. PRITZKER REAFFIRMS COMMITMENT TO LEGALIZE MARIJUANA DURING INAUGURAL ADDRESS

1/23/2019 MAJORITY OF U.S. MAYORS SUPPORT MARIJUANA LEGALIZATION, SURVEY SHOWS

1/24/2019 OPIOID ADDICTION NOW QUALIFIES FOR MEDICAL MARIJUANA IN NEW JERSEY

2/01/2019 Tennessee [introduces legislation](#) that would allow out-of-state medical marijuana cards

02/25/2019 [Cannabis Does Not Cause Morphological Changes in the Brain, Two Studies Find \(Univ of Pennsylvania and Univ of Colorado Boulder\)](#)

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Top chefs predict CBD will be the biggest culinary trend of 2019

By Sean McCaughan
Jan 11, 2019

An annual survey of chefs conducted for the [National Restaurant Association](#) found that CBD-infused drinks and food will be the number one and number two dining trends in 2019. They both trump zero-waste kitchens, the third biggest dining trend the chefs selected for 2019.

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Definition of *cannabinoid*

1 : any of various naturally-occurring, biologically active, chemical constituents (such as [cannabidiol](#) or [cannabinol](#)) of [hemp](#) or [cannabis](#) including some (such as [THC](#)) that possess psychoactive properties

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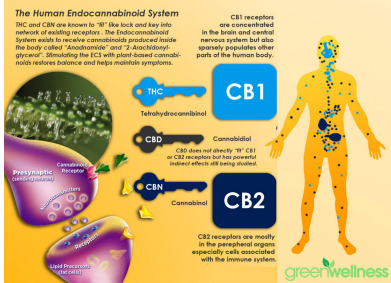
• **PHARMACOLOGY OF CANNABIS**

Cannabinoid Receptors naturally occur in the body in the brain and central nervous system (CB1) regulating such things as appetite, anxiety, sleep and sex drive.

Receptors regulating the internal organs (CB2), and present in the brain to a lesser extent, affect the immune system and the endocrine system. Found in large quantity in the gastrointestinal system. CBD's and THC are among 480 different naturally occurring elements in Marijuana



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Marijuana vs Hemp

- THC - Tetrahydrocannabinol
- CBD - Other Cannabidiols

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Cannabidiol (CBD) is one of the 400+ ingredients found in marijuana and is not psychoactive. Many states have passed laws allowing for the use of a CBD extract, usually in oil form, with minimal tetrahydrocannabinol (THC), and often for the treatment of epilepsy or seizures in seriously ill children.

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THC

- Arthritis
- Bone growth and bone health
- Depression
- Pain
- PTSD
- Spinal Chord injuries
- Traumatic Brain Injuries

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OTHER STUDIES CANNABINOIDS

CBN - Preliminary studies have shown effectiveness:

- As a sleep aid
- For Pain Relief
- As an Anti-inflammatory
- As an Anti-convulsive
- Bone Growth Stimulation

CBC - Effectiveness"

- Pain Relief
- Anti-depressant
- Anti-anxiety
- Anti-inflammatory
- Bone Growth Stimulation

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EMERGING TREATMENTS

- Diabetes
- Irritable Bowl syndrome
- Alzheimer's
- Parkinson's
- Cancer
- Head trauma prevention- football injuries
- Weight loss and smoking cessation

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Opinions differ with regard to safety, efficacy and potential for addiction

"A day doesn't go by where I don't see a cancer patient who has nausea, vomiting, loss of appetite, pain, depression and insomnia. (Marijuana) is the only anti-nausea medicine that increases appetite. I could write six different prescriptions, all of which may interact with each other or the chemotherapy that the patient has been prescribed. Or I could just recommend trying one medicine."

Donald Abrams, MD
Professor of Clinical Medicine at the University of California, San Francisco
"Marijuana is a Wonder Drug When It Comes to the Horrors of Chem"

"Although I understand many believe marijuana is the most effective drug in combating their medical ailments, I would caution against this assumption due to the lack of consistent, repeatable scientific data available to prove marijuana's medical benefits."

Based on current evidence, I believe that marijuana is a dangerous drug and that there are less dangerous medicines offering the same relief from pain and other medical symptoms."

Bill Frisk, MD
Former US Senator (R TN)
Correspondence to ProCon.org
Oct. 20, 2003

© Can Stock Photo

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"There is now promising research into the use of marijuana that could impact tens of thousands of children and adults, including treatment for cancer, epilepsy and Alzheimer's, to name a few. With regard to pain alone, marijuana could greatly reduce the demand for narcotics and simultaneously decrease the number of accidental painkiller overdoses, which are the greatest cause of preventable death in this country... Marijuana is a medicine, that should be studied and treated like any other medicine."

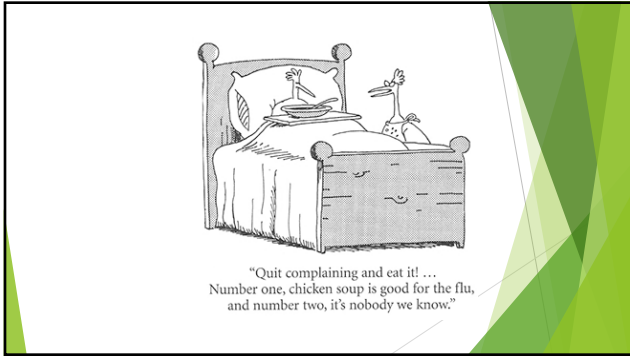
Medical Corr
"It's Time for a Medical Mar"

"[T]here really is no such thing as medical marijuana... The dangers and risks of marijuana use are well-known by the scientific community, even if they are downplayed by corporate interests wishing to get rich off legalization. Apathy, lost productivity, addictive disease, deterioration in intellectual function, motor vehicle accidents, and psychosis are all among the negative outcomes, all from a product that has no demonstrated benefit. For nearly all conditions for which marijuana has purported benefits, using medications - safe retreat to have value."

Clinton MD, MPH, MBA
Chair of the ASAM Board of Directors
nate Committee on the Judiciary
July 13, 2016

© Can Stock Photo

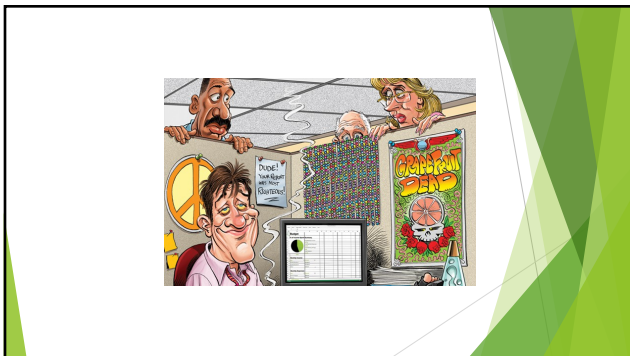
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The rate at which U.S. workers are dying on the job from drug overdoses has increased sharply, and opioids and illicit drugs are the main culprits, the National Institute for Occupational Safety and Health reported.


The annual rate of workplace overdose fatalities climbed, by 24% from 2011 to 2016, reaching about 1.5 deaths per million workers in 2016, according to the NIOSH researchers. In contrast, the overall rate of work-related fatalities increased by only 0.2% during that time. *June 3 2019*

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COMMON OPIOIDS AND THEIR SIDE EFFECTS

Codeine - Constipation, Drowsiness, Dry mouth, Nausea, vomiting, Pinpoint pupils, Sweating
 Hydrocodone (Vicodin, Hycodan) - headache, anxiety, fatigue, fever, weight gain or loss, nasal congestion, chest tightness, difficulty breathing
 Morphine (MS Contin, Kadian) - Constipation
 Allergic reactions like skin rash, itching or hives, swelling of the face, lips, or tongue, Breathing problems, Confusion, Seizures
 Oxycodone (Oxycontin, Percoset) - Constipation, Dry mouth, Nausea, vomiting, Tiredness
 Hydrocodone - headache, anxiety, fatigue, fever, weight gain or loss, nasal congestion, chest tightness, difficulty breathing
 Hydromorphone (Dilaudid) - Blurred vision, convulsions; light headedness, thoughts
 of suicide, unusual tiredness,
 Fentanyl (Duragesic) - the above and much more

And in all cases - potential for ADDICTION



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COMMON BENZODIAZEPINES AND THEIR SIDE EFFECT

- Diazepam
- Alprazolam
- Librium
- Xanax
- Klonopin
- Valium
- Ativan
- Restoril

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Combinations of Opioids and Benzodiazepines are

DEADLY



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Liability while under the influence



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CONTRIBUTING FACTOR

- RELIABILITY OF TESTING METHODS
- HOW LONG DOES IT STAY IN THE SYSTEM?
- DOES IT AFFECT INDIVIDUALS DIFFERENTLY?
- WHAT ARE THE LONG TERM EFFECTS?
- IS IT ADDICTIVE

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ARE THERE RELIABLE METHODS TO TEST FOR INTOXICATION?

- Saliva, Urine and Blood tests
- Field sobriety tests
- "Potilizer" type testing equipment



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HOW LONG DOES IT STAY IN THE SYSTEM?

Frequency of use, tolerance, genetics



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HOW DOES MJ AFFECT INDIVIDUALS DIFFERENTLY?

- The more CB1 or CB2 receptors a person has the greater the effect on the body
- The frequency of use, and therefore, the tolerance level will be different
- Gender may be a in individual.



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WHAT ARE THE LONG TERM HEALTH EFFECTS?

In most cases, drinking alcohol is not life-threatening. However, when people consume too much alcohol, it can be fatal. The CDC reports that nearly 88,000 alcohol-related deaths occur each year. And binge drinking accounts for about half of these deaths. In comparison, the number of deaths caused by marijuana is almost zero. A study found that a fatal dose of THC, the potent chemical in marijuana, would be between 15 and 70 grams. To give you an idea of how much marijuana that is, consider that a typical joint contains about half a gram of marijuana. That means that you would have to smoke between 238 and 1,113 joints in a day to overdose on marijuana. That's a lot of joints.

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Is it Addictive?

Physical vs Psychological addiction

Is it a "gateway" drug?

NIDA - National Institute on Drug Abuse - Typically, addicts started with legal drugs like cigarettes and alcohol

- Marijuana use increases the possibility of addiction to alcohol and tobacco and vice versa
- The Majority of Marijuana users do not go on to use harder drugs
- Biological makeup and social factors weigh heavily on propensity to addiction.
- The use of Nicotine increases the potential for addiction to any opioid.

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Does it work?

unpredictable

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MARIJUANA VS OPIOID USE

- Addiction risks of medical marijuana
- Substitute for opioids
- Effective substitute?



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QUESTIONS??



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