OREGON PUBLIC HEALTH DIVISION • OREGON HEALTH AUTHORITY

MARIJUANA USE IN OREGON: WHAT WE KNOW AND WHAT WE DON’T

“T

he oldest known written
record on Cannabis use
comes from the Chinese
Emperor Shen Nung in 2727 BC. An-
cient Greeks and Romans were also
familiar with cannabis.”1 In the 1840s,
Dr. W.B. O’Shaughnessy, a surgeon
working in India, introduced Cannabis
into Western Medicine, promoting
its use as an analgesic, sedative, anti-
inflammatory, and anticonvulsant.2

Fast forward: In 2012, voters in
Colorado and Washington approved
ballot measures that legalized the rec-
reational use of marijuana. Oregon is
one of 22 states and the District of Co-
lumbia that allow medical marijuana,*
and in March 2014 Oregon began
licensing establishments for the retail
sale of medical marijuana.

While marijuana has been tried for
medicinal and recreational purposes
throughout the world for thousands
of years, questions still exist about the
risks and benefits of its use. The Con-
trolled Substances Act lists marijuana
as a Schedule 1 drug; therefore, it has
not been approved for evaluation in
clinical trials (the gold standard for de-
termining the efficacy of medications).
Nonetheless, there is a growing body
of scientific literature on the acute and
chronic health effects of marijuana use.

This CD Summary provides an
overview of marijuana use in the
U.S. and Oregon, and summarizes
what is known about its health effects
from three sources: a 1999 Institute of
Medicine (IOM) authoritative report,
“Marijuana and medicine: Assessing
the science base”;3 National Institutes
of Health web-based “comprehensive,
peer-reviewed, evidence-based” infor-
mation about Cannabis use in treating
people with cancer”;4; and the June
2014 National Institute on Drug Abuse
review article “Adverse health effects
of marijuana use.”4

WHAT IS MARIJUANA?

The scientific name for marijuana
is Cannabis (genus) sativa (species);

subspecies: sativa and indica. The
primary psychoactive ingredient in
marijuana is δ-9-tetrahydrocannabinol
(THC); marijuana also contains can-
nabidiol (CBD), although this chemi-
cal has been less studied. Cannabis
strains can be cultivated to contain
different amounts of THC and CBD.
The THC content (i.e., potency) in
samples seized by the Drug Enforce-
ment Agency increased 4-fold between
the 1980s and 2012. When the flowers
and leaves of the marijuana plant are
dried, they can be smoked, usually in
marijuana cigarettes, pipes, and water
pipes. Marijuana can also be ingested
(e.g., in brownies, tea), or heated and
vaporized so that the oils are volatil-
ized and inhaled.†

CD Summary

OREGON MEDICAL MARIJUANA

Oregon’s Medical Marijuana Program
is administered by the Public Health Divi-
sion; currently, more than 60,500 persons
hold an Oregon medical marijuana card
(renewed annually). Card-qualifying
medical conditions are set in state statute.
Primary conditions for current card hold-
ers: severe pain (59,670); persistent muscle
spasms (15,888); nausea (9,101); cancer
(2,827); and seizures (1,490) (these condi-
tions are not mutually exclusive). Other
conditions include agitation, cachexia,
glaucoma, HIV/AIDS, and post-traumatic
stress disorder.¶

HEALTH EFFECTS

THC is lipid-soluble and accumulates
in fatty tissues; the tissue elimination
half-life is approximately 7 days. THC
stimulates the release of dopamine,
§ a school-based survey administered among
8th and 11th graders
¶ http://public.health.oregon.gov/DiseasesCondi-
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resulting in increased heart rate and blood pressure, increased appetite, and control of nausea and vomiting. Dronabinol is a synthetic THC and is the main active ingredient in Marinol®, marketed to reduce nausea and vomiting associated with cancer chemotherapy, and to stimulate appetite in patients with HIV/AIDS. THC plays a role in pain modulation and has been shown to reduce neuropathic pain in cancer patients. Other conditions with symptoms that may be alleviated by THC include glaucoma; inflammation (e.g., rheumatoid arthritis, Crohn’s disease); multiple sclerosis; and epilepsy.

THC can reduce anxiety and produce relaxation, sedation, and feelings of euphoria. These effects can influence the potential therapeutic value and may be beneficial for some patients and undesirable for others.

THC can alter sensory perception and decrease coordination and reaction time. In some people, THC can cause acute dysphoria, hallucinations, and paranoia. Other adverse effects include: decreased motor control, coordination and reaction time; disinhibited behaviors; and altered judgement, which can increase the risk of injury (e.g., motor vehicle crash), or acquiring a sexually transmitted infection. Data from SAMHSA indicate that in 2011, marijuana ranked second to cocaine as a cause of Emergency Department visits for illicit drug use. Marijuana use is also associated with impaired short-term memory and ability to learn.

DEVELOPMENTAL IMPACTS
Marijuana can have adverse effects on development. Use during pregnancy has been linked to low birth weight, preterm labor, higher NICU admissions, and developmental delays. Marijuana use can have a deleterious effect on the developing brains of infants and children. THC concentrates in breast milk, and may produce sedation, reduced muscular tone and poor sucking in infants. Use of marijuana in teenagers has been associated with impaired attention, memory, and learning, and increased risk of addiction.

LONG-TERM ADVERSE EFFECTS
An estimated 9% of those who experiment with marijuana become dependent. While withdrawal symptoms are not as serious as those for opiates or alcohol, they include irritability, anxiety, dysphoria, insomnia. SAMHSA data show that 18% of state-funded treatment episodes in 2009 were related to marijuana usage, compared to 7% in 1993. Marijuana smoke is associated with abnormalities of cells lining the human respiratory tract, and like tobacco smoke, is associated with increased risk of cancer (including lung, head/neck, bladder, brain, and testis), and lung damage. In addition, marijuana smoke has cardiac effects similar to those of tobacco smoke.

PRUDENT RECOMMENDATIONS
• Smoke of any kind can cause health problems, including lung cancer and cardiovascular disease. Avoiding the inhalation of smoke (including marijuana smoke) is important for health.
• Infants, children and adolescents with developing brains should not be exposed to THC. Further, mothers who are pregnant or breastfeeding should not expose their babies to THC.
• Cognitive impairment, whether from alcohol, the use of medications, or marijuana can lead to increased risk of injury (e.g. from a car crash). Persons should not drive or operate heavy machinery while under the influence of mind-altering substances.

CONCLUSION
As the societal discussions around the role of medical and recreational marijuana evolve, the public health, medical, and drug treatment communities play an important role in grounding these discussions: we need to improve our understanding of how to harness the potential medical benefits of the marijuana plant without exposing people to its intrinsic risks.^

REFERENCES