







## Adverse Health Effects of Marijuana Use

Nora D. Volkow, M.D., Ruben D. Baler, Ph.D., Wilson M. Compton, M.D., and Susan R.B. Weiss, Ph.D.

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### Effects of long-term or heavy MJ use

- Addiction\*
- Altered brain development\*
- Poor educational outcome\* (increased drop-out risk)
- Cognitive impairment\* (lower IQ function among frequent adolescent users)
- Diminished life satisfaction and achievement\*
- Symptoms of chronic bronchitis
- Increased risk of chronic psychotic disorders (including schizophrenia) in predisposed individuals
- \* the effect is strongly associated with initial MJ use in early adolescence







Medical = 23 states, Wash DC

### **Recreational =**

Colorado, Washington, Alaska, Oregon, Wash DC, and Portland, ME. There are currently 288 studies being conducted by the National Institutes of Health to research the cannabinoid constituents in marijuana.



SOURCE: White House Office of National Drug Control Policy, 2014.

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# Clinical conditions with symptoms that may be relieved by MJ/cannabinoids:

- Epilepsy
- Glaucoma
- Nausea
- Multiple Sclerosis
- AIDS associated wasting syndrome
- Chronic pain
- Inflammation

<b>Medical cannabis</b> will be available to <b>Minnesota</b> residents whose health care provider certifies them to be suffering from conditions including:
Cancer associated with severe/chronic pain, nausea or severe vomiting, or cachexia or severe wasting.
Glaucoma.
HIV/AIDS.
Crohn's Disease
Tourette's Syndrome.
Amyotrophic Lateral Sclerosis (ALS).
Seizures, including those characteristic of epilepsy.
Severe, persistent muscle spasms, in characteristic of multiple sclerosis.
Terminal illness, with a life expectancy of less than one year, if the illness or treatment produces severe/chronic pain, nausea or severe vomiting, cachexia or severe wasting.





Current trends:

# Synthetic drugs

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## Synthetic drugs

- Manufactured in China
- Sold online
- Labeled "not for human consumption"
- Unknown chemical compounds
- Unknown & unpredictable effects
- State and Federally banned
- Chemists develop new compounds
- DEA reports 5 6 new ones /month



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# Synthetic THC effects

Anxiety attacks Agitation Elevated heart rate Elevated blood pressure Vomiting Paranoia Hallucinations













































