FOR PERSPECTIVE –
LET’S LOOK AT CURRENT
**ALCOHOL** AND **TOBACCO**
USE IN THE U.S....
Results from the 2021 National Survey on Drug Use and Health: Graphics from the Key Findings Report

Center for Behavioral Health Statistics and Quality
Substance Abuse and Mental Health Services Administration
U.S. Department of Health and Human Services

PAST MONTH ALCOHOL USE, BINGE ALCOHOL USE, AND HEAVY ALCOHOL USE: AMONG PEOPLE AGED 12 OR OLDER; 2021

47.5% OF TOTAL US POPULATION OVER AGE 12 HAS DECREASED BY 3.5M IN 4 YEARS

133.1 Million Alcohol Users
60.0 Million Binge Alcohol Users (45.1% of Alcohol Users)
16.3 Million Heavy Alcohol Users (27.2% of Binge Alcohol Users and 12.3% of Alcohol Users)

SOURCE: SAMHSA 2021

Note: Binge Alcohol Use is defined as drinking five or more drinks (for males) or four or more drinks (for females) on the same occasion on at least 1 day in the past 30 days. Heavy Alcohol Use is defined as binge drinking on the same occasion on 5 or more days in the past 30 days; all heavy alcohol users are also binge alcohol users.
FOR PERSPECTIVE –
LET’S LOOK AT CURRENT
ALCOHOL AND TOBACCO
USE IN THE U.S....

Past Month Tobacco Use or Nicotine Vaping: Among People Aged 12 or Older; 2021

- No Past Month Tobacco Use or Nicotine Vaping: 218.2 Million People (78.0%)
- Past Month Tobacco Use or Nicotine Vaping: 61.6 Million People (22.0%)

- Cigarettes: 43.6M
- Cigars: 10.3M
- Smokeless Tobacco: 7.3M
- Pipe Tobacco: 1.8M
- Nicotine Vaping: 13.2M

Note: The estimated numbers of current users of different tobacco products or nicotine vaping are not mutually exclusive because people could have used more than one type of tobacco product or used tobacco products and vaped nicotine in the past month.
Type of Past Month Tobacco Use and Nicotine Vaping: Among Past Month Nicotine Product Users Aged 12 or Older; 2021

![Chart showing percentages of past month nicotine product users.]
Teens and E-cigarettes

Teens are more likely to use e-cigarettes than cigarettes.¹

9th grade: 3.6%
10th grade: 6.3%
12th grade: 14.0%

past month use

"2x as many boys use e-cigs as girls"

VAPING TOBACCO IS THE 'GATEWAY'!

Past Month Nicotine Vaping: Among People Aged 12 or Older; 2021

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Percent Using in Past Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 or Older</td>
<td>4.7</td>
</tr>
<tr>
<td>12 to 17</td>
<td>5.2</td>
</tr>
<tr>
<td>18 to 25</td>
<td>14.1</td>
</tr>
<tr>
<td>26 or Older</td>
<td>3.2</td>
</tr>
</tbody>
</table>
Type of Vaping Use: Among Past Month Users Aged 12 or Older Who Vaped Any Substance; 2021

- Only One Substance (65.0%)
- Two of the Three Substances (25.0%)
- All Three Substances (5.1%)
- Other (Substances Unknown) (4.8%)

Note: People who vaped any substance could have used vaping devices to vape substances other than nicotine, marijuana, or flavoring.
Note: The percentages may not add to 100 percent due to rounding.
PROONENTS OF VAPING

SAFER THAN CONVENTIONAL CIGARETTES

DOESN’T BURN TOBACCO – FREE RADICALS AND THOUSANDS OF ADDITIONAL CHEMICALS TO INHALE

SKEPTICS OF VAPING

FLAVORED LIQUIDS AND CHEMICALS UNREGULATED

UNKNOWN HEALTH EFFECTS

INITIAL STUDIES QUITE UNFAVORABLE

MYSTERIOUS VAPING LUNG ILLNESS

2100 CASES – 42 DEATHS

MOST DAILY CANNABIS OR CANNABIS/NICOTINE VAPE USERS

SYMPTOMS: COUGH, SOB, CHEST PAIN / TIGHTNESS, N/V

HIGH LEVELS OF FAT-LADEN MACROPHAGES IN THE LUNGS SCAVENGING DEBRIS?

USE OF ‘OILY’ VITAMIN E ACETATE IN VAPING LIQUID IMPLICATED IN MOST CASES – NOT STORE BOUGHT NICOTINE VAPING PRODUCTS

FDA ANALYZING MANY OTHER POTENTIAL SUBSTANCES
VAPING INCREASED RISK OF MI, CAD, DEPRESSION
LOWER RISK THAN TRADITIONAL SMOKING

TAKEAWAY ISN’T THAT VAPING IS ‘SAFER’ THAN SMOKING
INSTEAD, VAPING ‘STILL INCREASES THE RISK’ OF
CONDITIONS ASSOCIATED WITH SMOKING

THE ONLY SAFE ALTERNATIVE TO SMOKING IS NOT SMOKING

AMA & ADA CALL FOR TOTAL VAPING BAN

AMA PROPOSAL ON ALL E-CIGARETTE DEVICES
SURGE IN UNDER-AGE USE
LUNG ILLNESS FROM BLACK MARKET PRODUCTS

ADA ACKNOWLEDGES VAPING RESEARCH IS LIMITED
SUGGESTS CARIES, PERIODONTAL DISEASE, AND ORAL CANCER MAY BE IMPLICATED

BOTH WOULD ALLOW VAPING PRODUCTS APPROVED BY THE FDA FOR SMOKING CESSATION
HOW PERVERSIVE IS THE USE OF CANNABIS IN OUR PATIENT POPULATION?

Past Month Substance Use: Among People Aged 12 or Older; 2021

<table>
<thead>
<tr>
<th>Substance</th>
<th>Number of Users</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>133.1M</td>
<td>47.5%</td>
</tr>
<tr>
<td>Tobacco Products</td>
<td>54.7M</td>
<td>19.5%</td>
</tr>
<tr>
<td>Nicotine Vaping</td>
<td>13.2M</td>
<td>4.7%</td>
</tr>
<tr>
<td>Marijuana</td>
<td>36.4M</td>
<td>13%</td>
</tr>
<tr>
<td>Rx Pain Reliever Misuse</td>
<td>2.4M</td>
<td>1%</td>
</tr>
<tr>
<td>Hallucinogens</td>
<td>2.2M</td>
<td>1%</td>
</tr>
<tr>
<td>Cocaine</td>
<td>1.8M</td>
<td></td>
</tr>
<tr>
<td>Methamphetamine</td>
<td>1.6M</td>
<td></td>
</tr>
<tr>
<td>Rx Tranquilizer or Sedative Misuse</td>
<td>1.4M</td>
<td></td>
</tr>
<tr>
<td>Rx Stimulants Misuse</td>
<td>1.1M</td>
<td></td>
</tr>
<tr>
<td>Inhalants</td>
<td>830,000</td>
<td></td>
</tr>
<tr>
<td>Heroin</td>
<td>589,000</td>
<td></td>
</tr>
</tbody>
</table>

Note: The estimated numbers of current users of different substances are not mutually exclusive because people could have used more than one type of substance in the past month.
Past Year Illicit Drug Use: Among People Aged 12 or Older; 2021

No Past Year Illicit Drug Use
218.6 Million People (78.1%)

Past Year Illicit Drug Use
61.2 Million People (21.9%)

- Marijuana: 52.5M
- Rx Pain Reliever Misuse: 8.7M
- Hallucinogens: 7.4M
- Rx Tranquilizer or Sedative Misuse: 4.9M
- Cocaine: 4.8M
- Rx Stimulant Misuse: 3.7M
- Methamphetamine: 2.5M
- Inhalants: 2.2M
- Heroin: 1.1M

Note: The estimated numbers of past year users of different illicit drugs are not mutually exclusive because people could have used more than one type of illicit drug in the past year.

State Regulated Cannabis Programs

Limited adult possession and growing allowed, no regulated production or sales: DC

- Adult & medical use regulated program
- Adult use only no medical regulated program
- Comprehensive medical cannabis program
- CBD/Low THC program
- No public cannabis access program

May 2022
**COLORADO REVIEW - MARIJUANA USE 2021**

NATIONAL MARIJUANA USE IN LAST 30 DAYS: 13%
COLORADO HIGH SCHOOL STUDENT USE IN LAST 30 DAYS: 20.5%
HIGHEST USE: MALES 18-25
MARIJUANA-RELATED ER VISITS HAVE DECREASED SINCE 2019
MARIJUANA-RELATED DUI INCREASED ABOUT 20% FROM 2014 TO 2020
TRAFFIC FATALITIES WITH MARIJUANA POSITIVE DRIVER INCREASED 140% FROM 2013-2019 (TOTAL 132)

**PERCEIVED RISK OF HARM?**

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**STATE REVIEW - MARIJUANA USE 2021**

NATIONAL MARIJUANA USE IN LAST 30 DAYS: 13%
COLORADO: 15.5% WASHINGTON: 14% CALIFORNIA: 9.5%
COLORADO ROUTE OF USE:
SMOKED 84% EDIBLES: 40% VAPORIZED: 30%
HIGH SCHOOL STUDENT USE IN LAST 30 DAYS
COLORADO: 20.5% WASHINGTON: 17% CALIFORNIA: 14.5%
HIGHEST USE: MALES 18-25
MANY USERS (38% IN CALIFORNIA) REPORTED DRIVING A VEHICLE WITHIN 3 HOURS OF USING MARIJUANA

PERCEIVED RISK OF HARM IS DECREASING
33% OF WASHINGTON TEENS PERCEIVE LITTLE RISK
CONVENTIONAL DRUG DEVELOPMENT

Discovery of Drug
Development and Screening of Compounds
Safety and Dose Estimates
Phase I-III Clinical Trials
Approval of Drug Sought
by Drug Maker
Labelled Indication
Proven Safety & Efficacy
MEDICAL ACCESS TO CANNABIS
Has Occurred in ‘Reverse’ to Conventional Drug Development!
Because of It’s Schedule I Status...
‘No Acceptable Medical Use’
‘High Potential for Abuse’
Long History of Use Before It was Known...
How the Drug Worked
Identification & Understanding of the Ingredients

‘CLINICIANS ARE BEING ASKED TO WORK WITH A DRUG THAT HAS COME TO THEM BACKWARD.’
‘FIRST WE HAVE THE DRUG, THEN WE FIGURE OUT HOW IT WORKS’
CANNABINOID RECEPTORS

G Protein-Coupled Receptor Superfamily
Activated by 3 Major Groups of Ligands...

1. Endocannabinoids – produced by the mammillary bodies in the Hypothalamus
2. Plant Cannabinoids
3. Synthetic Cannabinoids

ENDOCANNABINOIDS

First identified in 1992

ANA (Anandamide) – ‘Internal Bliss’
2-AG (2-Arachidonyl Glycerol)
Nolandin Ether (2-Arachidonylglycerol)
Virodhamine
NADA (N-Arachidonyl Dopamine)

*Brief Effects
*Chocolate has Anandamide Analogs
SYNTHETIC CANNABINOIDES

FDA Approved

Dronabinol
Nabilone
   Treatment of Chemotherapy-Induced N/V and Wasting Syndrome due to Cancer/AIDS

Epidiolex (CBD)
   Treatment of Lennox-Gastaut Syndrome and Dravet Syndrome

CANNABINOID RECEPTORS

CB₁ Receptors
   Exists Mainly in the Brain
   Other Sites – Lungs, Liver, Kidneys
   Inhibits GABA Receptors
   Release of Norepineprine
      Dopamine
      Serotonin
      Acetylcholine
   Modulates Opioid/NMDA Receptor
   Responsible for Psychotropic Effects Dependence
CANNABINOID RECEPTORS

CB₂ Receptors
Exists Mainly in the Immune System
Other Sites – Hematopoietic Cells
Inhibitory Effects Inflammation
Immune Function
Nociception

Non-CB₁, Non-CB₂ Receptors
Exists in Endothelial Cells, CNS

ENDOCANNABINOID SIGNALING SYSTEM

Modulates the Activity of Most Neurotransmitters in the CNS
Undergoes Dynamic Changes Throughout Adolescence
Vast Clinical Potential of Cannabinoid Drugs to Treat a Host of Neurologic Disorders
   Huntington’s Disease
   Parkinson’s Disease
   Schizophrenia
   Psychosis
PLANT CANNABIS

Over 100 Bio-Active Compounds Identified...
  THC – Tetrahydrocannabinol
  THCa – Tetrahydrocannabinoic Acid
  CBD – Cannabidiol
  CBN – Cannabinol
  CBC – Cannabichromene

Some Cannabinoids Clearly have Therapeutic Value...

THC - TETRAHYDROCANNABINOL

Psychoactive Effects – ‘The High’ – Euphoria
Relaxing Feeling
Memory/Cognitive Impairment
Lack of Coordination
Disorganized Thinking
Altered Time Perception
Apprehension
Irritability
Paranoia
THC EFFECTS

Low/Moderate dose
Anxiolytic
Increase in Sympathetic activity
Inhibition of Signaling to the Vagus Nerve
Reduction of Parasympathetic activity
Tachycardia
Increased Cardiac Output
Myocardical Depression

Slows Gastric Emptying Time by 4x... 30min-120min

THC EFFECTS

High dose
Anxiogenic
Inhibition of Sympathetic activity
No Inhibition of Parasympathetic activity
Bradycardia
Hypotension
Myocardical Depression
Increased in SVT and Ventricular Ectopy

*Potentiates effects of drugs affecting BP, HR
THC POTENCY

National Institute on Drug Abuse: Potency has Increased

Potent Forms Available – 30% THC ‘Shatter’ – 80% THC

THC:CBD Ratio is also Increasing...

CBD - CANNABIDIOL

Anti-Emetic
Anti-Convulsant
Anti-Psychotic
Anti-Tumoral?

Does Not Interfere with Psychomotor Functions
UNIQUE PROPERTIES OF CBD

Wave of Products Hitting the Market
Non-Competitive 5HT3A Antagonist
Anti-Psychotic Properties are the Most Compelling
Anti-Convulsant Properties Act at Neuronal Transmembrane Receptors
Does Not Attach to CB1/CB2 Receptors
Controls Tone By Hindering Uptake of ANA (Anandamide)

RATIO OF THC:CBD

THC: Anxiety & Psychomimetic Effects
CBD: Anxiolytic & Anti-Psychotic Effects

Ratio is Vital Because CBD Attenuates THC’s Psychoactive Effects
Higher Concentrations of CBD “Protecting’ of Cognitive Impairment
Differentiate Between Chronic Smoker of High THC Marijuana and Daily User of Oral CBD
Increasing Levels of THC May be Aggravating Psychotic Disorders
Type of Marijuana Use: Among Past Month Marijuana Users Aged 12 or Older; 2021

- 12 or Older: 79.5%
- 12 to 17: 60.0%
- 18 to 25: 73.0%
- 26 or Older: 82.6%

- Marijuana Use but Not Marijuana Vaping
- Marijuana Vaping
EFFECTS OF SMOKING CANNABIS

Burns at a Higher Temperature – Compared to Tobacco
2/3 Greater Puff Volume
1/3 Greater Depth Inhalation
4x Longer Breath Holding

Inhaled Cannabis – **Bronchodilator Effect**
Increases FVC and FEV₁
Don’t seem to Develop COPD

EFFECTS OF SMOKING CANNABIS

Smoking Cannabis Causes...
Upper airway irritability
Enlarged Mucous Glands
Hypersecretion of Mucus
Impaired Ciliary Clearance
Daily Cough
Sputum Production
COMMON CONDITIONS ELIGIBLE FOR MEDICAL MARIJUANA TREATMENT

AIDS – HIV +
AMYOTROPHIC LATERAL SCLEROSIS (ALS)
ALZHEIMER’S DISEASE
CANCER
CHRONIC TRAUMATIC ENCEPHALOPATHY (CTE)
CROHN’S DISEASE
EPILEPSY (SEIZURES)
FIBROMYALGIA
GLAUCOMA
HEPATITIS C

SPINAL CORD DISEASE / INJURY
TOURETTE’S SYNDROME
TRAUMATIC BRAIN INJURY (TBI)
ULCERATIVE COLITIS
INFLAMMATORY BOWEL DISEASE
MULTIPLE SCLEROSIS
CHRONIC/INTRACTABLE PAIN
PARKINSON’S DISEASE
POST-TRAUMATIC STRESS DISORDER (PTSD)
SICKLE CELL ANEMIA
EVIDENCE STATEMENTS
NATIONAL ACADEMY OF SCIENCE – JANUARY 2017

Conclusive or Substantial Evidence

Effective Treatment of Chronic Pain in Adults
Effective Anti-Emetic for Chemotherapy Induced Nausea/Vomiting
Effective in Improving Multiple-Sclerosis Spasticity Symptoms
Development of Schizophrenia – Higher Use = Higher Risk
Initiating Use at Earlier Age Increases Risk for Problem Use

EVIDENCE STATEMENTS
NATIONAL ACADEMY OF SCIENCE – JANUARY 2017

Moderate Evidence

Improving short-term sleep outcomes in OSA, Fibromyalgia, Chronic Pain, Multiple Sclerosis
Increased risk of overdose injuries among pediatric populations in U.S. states where cannabis is legal
Increased symptoms of mania and hypomania in patients with Bipolar Disorder
Increased incidence of social anxiety disorder with regular cannabis use
EVIDENCE STATEMENTS
NATIONAL ACADEMY OF SCIENCE – JANUARY 2017

Insufficient Evidence
Effective treatment for cancers
Effective treatment for Irritable Bowel Syndrome
Effective treatment for epilepsy
Effective treatment for spasticity in spinal cord injury
Increased risk of myocardial infarction
Increased risk of multiple cancers

COMMON CONDITIONS ELIGIBLE FOR MEDICAL MARIJUANA TREATMENT

AIDS – HIV *
AMYOTROPHIC LATERAL SCLEROSIS (ALS)
ALZHEIMER’S DISEASE
CANCER *
CHRONIC TRAUMATIC ENCEPHALOPATHY (CTE)
CROHN’S DISEASE
EPILEPSY (SEIZURES)
FIBROMYALGIA *
GLAUCOMA
HEPATITIS C
SPINAL CORD DISEASE / INJURY
TOURETTE’S SYNDROME
TRAUMATIC BRAIN INJURY (TBI)
ULCERATIVE COLITIS
INFLAMMATORY BOWEL DISEASE
MULTIPLE SCLEROSIS *
CHRONIC/INTRACTABLE PAIN *
PARKINSON’S DISEASE
POST-TRAUMATIC STRESS DISORDER (PTSD)
SICKLE CELL ANEMIA
NO DOSE – RESPONSE STUDIES

NO DOUBLE-BLIND COMPARISON TO CONVENTIONAL MEDICAL THERAPIES

REVIEW OF THE LITERATURE

MOST ARE REVIEWS OF SCIENCE, OPINIONS, LETTERS TO THE EDITOR & CASE REPORTS

MANY STUDIES RELY ON ‘SELF-REPORTED USE’ AND ONLY STUDY SMOKERS

VERY LITTLE SCIENTIFIC RESEARCH
REVIEW OF THE LITERATURE

‘Induction dose of propofol in patients using cannabis’


‘EFFECTS OF CANNABIS USE ON SEDATION REQUIREMENTS FOR ENDOSCOPIC PROCEDURES’
TWARDOWSKI MA, ET AL J AM OSTEOPATH ASSOC

Medical Record Review: Self-Reported Use
250 Records – 1 Endoscopist
Increased Amounts of Medication Required
14% More Fentanyl
20% More Midazolam
220% More Propofol
REVIEW OF THE LITERATURE


‘Weeding out the problem: The impact of preoperative cannabinoid use on pain in the perioperative period’

‘CARDIOVASCULAR EFFECTS OF CANNABINOL DURING ORAL SURGERY’ GREGG, ET AL. ANES ANALG 55:203 1976

Study #1
10 male patients – Age 19-28
All with previous marijuana experience
4 separate weekly trials – 1 3rd molar removed
1. 0.044 mg/kg IV THC
2. 0.022 mg/kg IV THC
3. Diazepam 0.157 mg/kg
4. Placebo
Study #2
10 patients – (7 women 3 male) – ASA I, II
5 previously smoked marijuana last 72 hours
Extraction 2-4 3rd molars
Received IV atropine, fentanyl, diazepam, methohexital

Predisposition of patients to...
Syncopal hypotension with THC – dose related
Tachycardia – dose-related suggesting synergy between THC & atropine/methohexital
Arrhythmias – benign
THC compromised the patient’s adaptability to stress
QUESTIONABLE STUDIES?

- Regular Cannabis Use Linked to Cardiac Abnormalities. Khanji M, et al. JACC Cardiovascular Imaging

CANNABIS & SEIZURES

- 2 Double Blind Studies of CBD
  - Dravet Syndrome
    - 120 Children – Poor Control
    - 20mg/kg/day Oral CBD – 14 Weeks
    - Seizures Decreased 23%
    - Almost Half of Cases 50% Reduction
  - Lennox-Gastaut Syndrome
    - 171 Children & Adults
    - Seizure Frequency Dropped 44% vs 22% with Placebo
CANNABIS AND THE ADOLESCENT BRAIN

THE HUMAN BRAIN UNDERGOES SIGNIFICANT DEVELOPMENT UNTIL AGE 25
‘SYNAPTIC PRUNING’
-STREAMLINES NEURAL CIRCUITRY
-EXPANDS COGNITIVE SKILLS
-NEURON MYELINATION

ENDOCANNABINOID SYSTEM (ECS) HAS A ROLE IN BRAIN MATURATION
- PLANT THC MAY ALTER THE PRODUCTION OF ENDOGENOUS
  ANANDAMIDE – ALTERING THE ECS

ARE ADOLESCENTS MORE VULNERABLE TO THE HARMFUL EFFECTS OF
CANNABIS THAN ADULTS? A PLACEBO CONTROLLED STUDY IN MALES.
MOKRYSZ C, ET AL. TRANSL PSYCHIATRY 2016

YOUNGER ONSET OF THC USE – HIGHER INCIDENCE OF PSYCHIATRIC ILLNESS
INCREASED RISK OF ADDICTION

LIFETIME ADDICTION RATE: 17% IF USE BEGINS IN ADOLESCENCE
CANNABIS HYPERALGESIA
PATIENTS BELIEVE MARIJUANA IS EFFECTIVE FOR PAIN MANAGEMENT

EFFICACIOUS - TREATMENT OF CHRONIC NEUROPATHIC PAIN
ACUTE PAIN: LOWERED PAIN THRESHOLD IN FROM SURGERY & INCREASED NEED FOR PAIN MEDICATION

CLINICAL TRIALS: ANALGESIC EFFICACY OF CANNABINOIDS
ACUTE PAIN NOT SUPERIOR TO PLACEBO

‘CANNABIS INEFFECTIVE FOR ACUTE PAIN’
STEVENS AJ, ET AL. ACTA ANAESTHESIOL SCAND 2017

CANNABIS WITHDRAWAL SYNDROME

REQUIRES 3 OR MORE OF THE FOLLOWING CRITERIA...
- IRRITABILITY, ANGER, ANXIETY, INSOMNIA, DECREASED APPETITE, RESTLESSNESS, DEPRESSED MOOD

REQUIRES 1 OR MORE PHYSICAL SYMPTOMS...
- ABDOMINAL PAIN, SHAKING, SWEATING, FEVERS, CHILLS, HEADACHE

TYPE A CWS: EXPERIENCE A PEAK IN SYMPTOMS 2-6 DAYS AFTER LAST EXPOSURE
CANNABINOID HYPEREMESIS SYNDROME
PARADOXICAL HYPEREMETIC EFFECT IN CHRONIC USERS

SEVERE NAUSEA, VOMITING, ABDOMINAL PAIN

REFRACTORY TO STANDARD ANTIEMETICS

RELIEF OF SYMPTOMS WITH HOT WATER BATHS
BYPASS OF BLOOD FLOW FROM MESENTERIC
CIRCULATION TO THE SKIN – ‘CUTANEOUS STEAL SYNDROME’

RAPID IMPROVEMENT AFTER CANNABIS CESSATION

OVERALL CANNABIS CONCLUSIONS...

History Should Include...
Frequency?
Route of Administration?
Last Use?

Physical Exam...
Pulmonary Effects
Cardiovascular Effects

*Pulmonary Effects Vary by Frequency/Route of Use
*Cardiovascular Effects – Highest Risk - Early Acute Intoxication
OVERALL CANNABIS CONCLUSIONS...

More Research is Clearly Needed
Important to Differentiate THC Use from CBD Use
Avoid Treatment in the Acutely Intoxicated Patient
Important to Differentiate the Heavy User (Daily/Near Daily) from the Casual One
Heavy Users Should be Expected to Require Significantly Increased Doses of Anesthetic Medications and the Practitioner Must Actively Plan for Airway Intervention
Treat Patients that Smoke Cannabis Like Tobacco Smokers

Consider Longer NPO Times Due to Gastric Emptying Delay
Marijuana is a ‘mood-intensifying drug’
   Potentiates the Depressant Effects and Summates the Excitatory Effects
THC Causes a Predisposition Towards Sustained Tachycardia and Syncope
Drugs *increasing* heart rates such as Ketamine, Atropine, Epinephrine, and Methohexital should be used with Caution
OVERALL CANNABIS CONCLUSIONS...

THC Appears to Compromise Many Patient’s Adaptability to Stress – Poor Premedication Choice
Effects May be Seen For a Long Period of Time after Cannabis Intake
   Elimination Half-Life – Occasional user 20-30 hours
   Elimination Half-Life – Chronic user 72+ hours
Cannabis Users Report Higher Postoperative Pain Scores, Could Require More Rescue Analgesics

OVERALL CANNABIS CONCLUSIONS...

Require the Patient to Avoid Use of the Psychoactive Forms of Cannabis in the ??? Hours Leading up to Anesthesia is Indicated...
QUESTIONS?

THANK YOU!