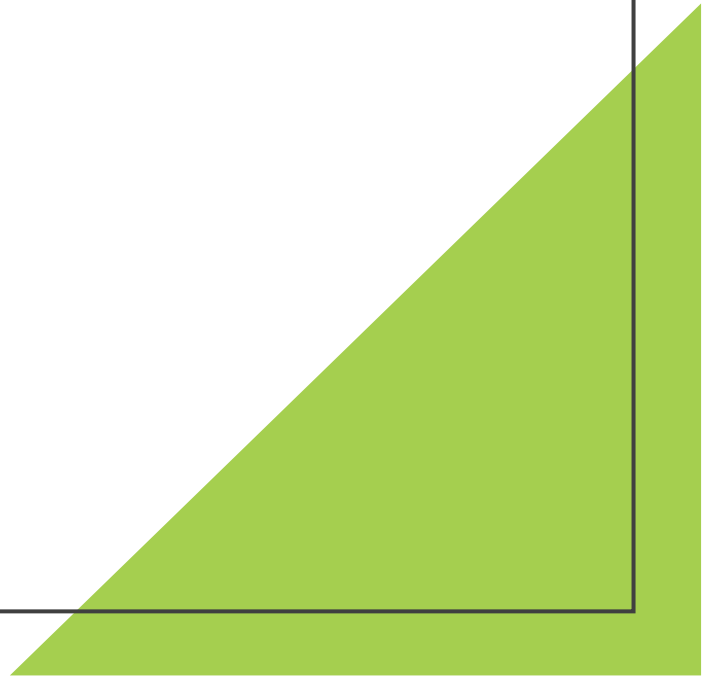




Horizon
HEALTH SERVICES

CANNABIS 201

THE BLUNT TRUTH



WHO WE ARE



Leaders in mental health and substance use treatment.



Providers of cutting-edge and science based personalized treatment.



Innovators of increasing access to care.



Advocates for our patients.



Partners in our community.



CANNABIS SEEMS TO FOLLOW ME...

- SAFER Project Director
- MACP, CASAS-M
- 20+ years clinical experience
- Cannabis Specialization
- “Cannabis Queen”





DIFFERENT PERCEPTIONS

- Drugs are neither all good or all bad
- All substances have risks and benefits
- Factual information is necessary to promote safety



INTRODUCTIONS / ICE BREAKER

Who was here
for Cannabis
101?

Who lives
within 5 minutes
of a dispensary?

CANNABIS 201

THE BLUNT TRUTH



A BRIEF HISTORY OF CANNABIS

- Originated in Central Asia, Northern India, and Siberia.
- Largely used medicinally and for hemp
- 1600's cultivated by colonial farmers
- "Poison Laws" banning weed and opium
- 1937 Marijuana Tax Act banned sale, possession, and transport of hemp
- 1941 removed from all pharmacopoeias
- 1970's and 80's War on Drugs
- 1996 First medical legalization in California
- Medically legalized July 2014 in NYS
- Legalized recreationally in NYS March 31, 2021



CLINICAL TRAIN HAS LEFT THE STATION

Scientific research is playing catch up

Some evidence

No evidence

Emerging evidence

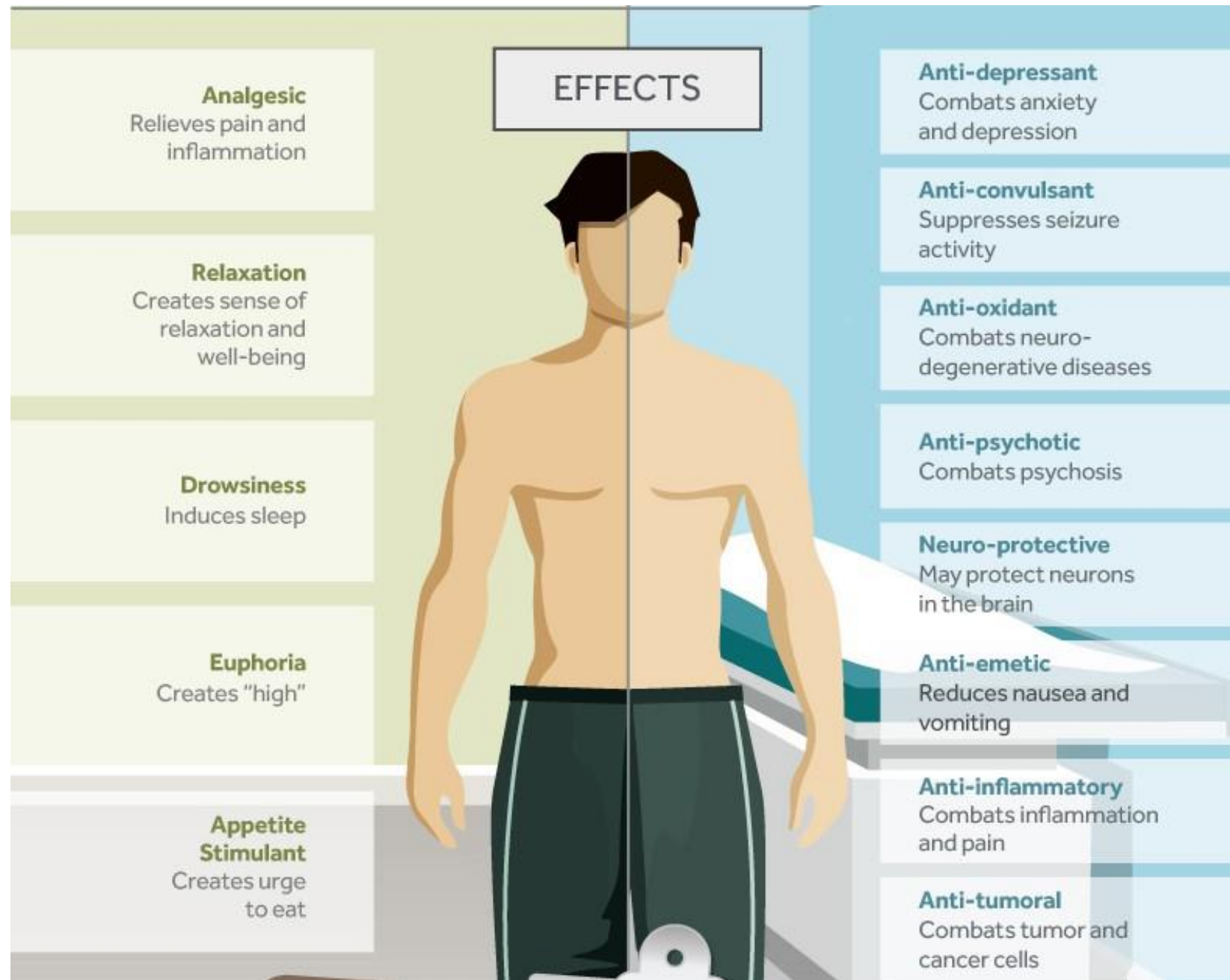
We all want better treatments



MEDICAL CANNABIS IN NYS

- Expansion of qualifying medical conditions
- Greater medical product variety
- Increased dispensing limits (60 day supply)
- On-site pharmacists
- No minimum age limit with caregiver designates
- Home cultivation permitted
- Can smoke whole flower medicinally





CBD CAUTIONS

Snake oil

Contaminants

Dosing for kids unclear

Absorption & Brain delivery



CBD MEDICINAL USES

- **Seizure Disorders / Autism in children**
 - Inflammatory diseases - Arthritis, Chron's
 - **Inflammatory / neuropathic pain**
 - Anxiety / Depression / Insomnia
 - **Spasticity related to MS / spinal injuries**
- Alzheimer's / Dementia



THC MEDICINAL USES

- Musculoskeletal /Neuropathic / inflammatory pain
- HIV/AIDS
- Nausea / vomiting
- Wasting syndromes
- Sleep disorders
- PTSD nightmares
- Cancer (adjunct therapy)
- Cesamet, Marinol, Syndros



DRUG SUBSTITUTION

- Opiates / Alcohol / Benzodiazepines
- Tobacco
- Benzodiazepines
- Safer alternative to pharmaceuticals ?
- Better safety profile?
- Psychoeducation, counselling and ongoing monitoring.



MEDICAL USE



- Don't want the "HIGH"
- Micro-dosing
- 90% using oils and vaping
- Protected strains CBD dominant
- No diverting
- Baby Boomers (55 avg age)
- Women
- Pain, sleep, anxiety, PTSD



RECREATIONAL USE

- Seeking “HIGH” or euphoria
- Macro dosing
- Higher risk methods / products
- High potency THC preferred
- Sharing and diverting
- Youth / Adults
- 25 - 30% at risk of dependence / withdrawal
- Some self-medicating / mixed motivations



MEDICINAL CONSIDERATIONS

- Research and PHARMA need to catch up
- Patients can be assessed remotely
- Little monitoring of dosage, formulation, strain availability
- Not all prescribers provide education
- Known negative effects into adulthood
- Medical cannabis recalls



MORE MEDICAL CONSIDERATIONS



Cautions prescribing under age 25 - evidence mix and sparse



Qualifying medical conditions are now **AT THE DISCRETION** of the prescriber



Dosing is tricky. Start LOW go SLOW



STOP when you get where you needed to GO



MEDICINAL METHODS



Vape cartridge / pens

Transdermal patches

Capsules / tablets / oils

Oral spray / powder

Lozenges

Ground flower for vaping

RARELY smoked whole flower
cannabis



WHOA! 387 DRUG INTERACTIONS!



- 26 drug interactions with moderate – severe warnings where the risks outweigh the benefits! Greatest caution is around combining THC cannabis with **central nervous system depressants** like alcohol or opiates or any other medication that could affect your alertness or increase sedation.
- **Alcohol and weed** - can increase side effects such as dizziness, drowsiness, confusion, and difficulty concentrating



THC & MED MIXING

- **Viagra** – increased risk of heart attack
- **Warfarin** (blood thinner) - marijuana affects the cytochrome P450 enzymes, it may inhibit the breakdown of warfarin, leading to an increase in warfarin's effects
- **Benzos** - marijuana can increase the drowsiness caused by benzodiazepines and overly suppress the central nervous system (breathing, heart rate alertness)
- **Prozac** (antidepressant) - can inhibit cytochrome P450 enzymes and may slow down the metabolism of THC and therefore increase the concentration of THC in the body. Documented cases of increased psychosis and mania.
- **Depakote** – Valproic Acid may cause elevated liver enzymes

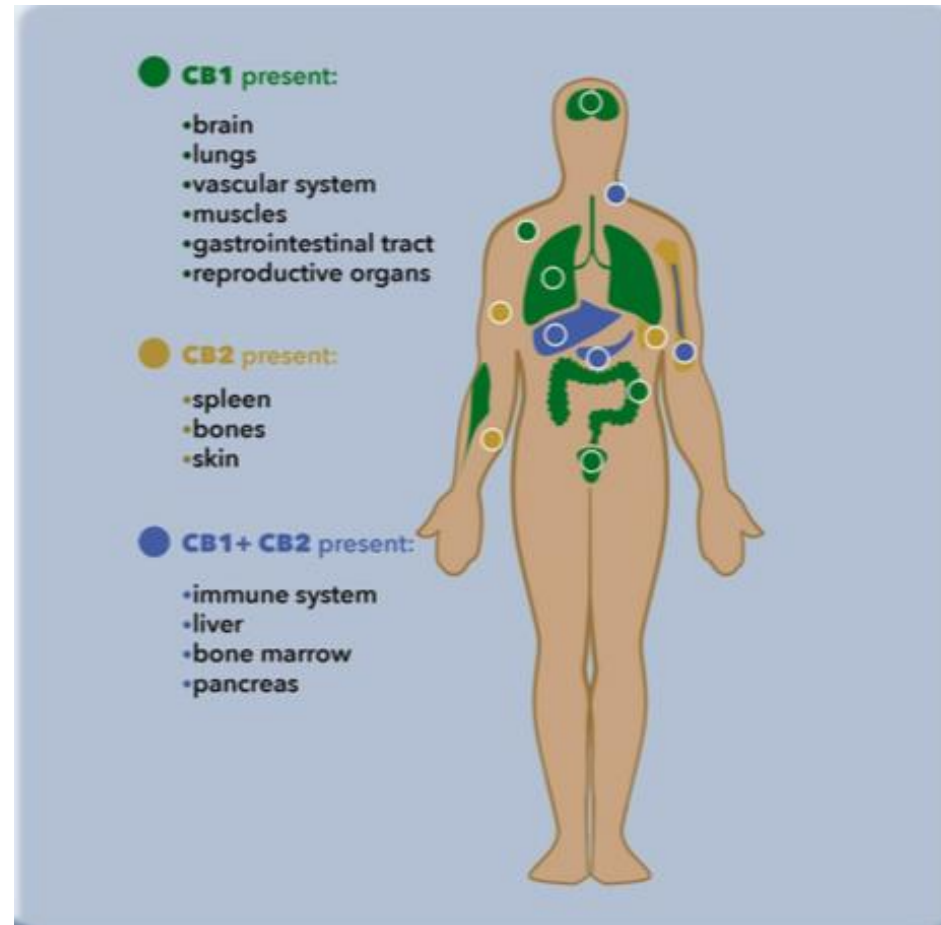


THE DOWNSIDES OF HIGH

THC ACROSS THE LIFESPAN



THE ENDOCANNABINOID SYSTEM



LEGAL DOESN'T MEAN SAFE FOR EVERYONE

- Pregnant or breastfeeding
- Under age 24 or 25
- Middle Aged
- Cardiac conditions
- Pre-existing SPMI
- Family hx of SPMI



FERTILITY

FEMALES

- Harms egg health
- Conception difficult and longer
- Embryo implantation x2 miscarriages
- Disrupts ovulation
- Fewer eggs retrieved during IVF

MALES

- One vape session or blunt per week can lower sperm count by 30%
- Lasts up to 3 months
- Decreases LH = low fertilization rates, testicular dysfunction, lower sex drive, ED



PREGNANCY

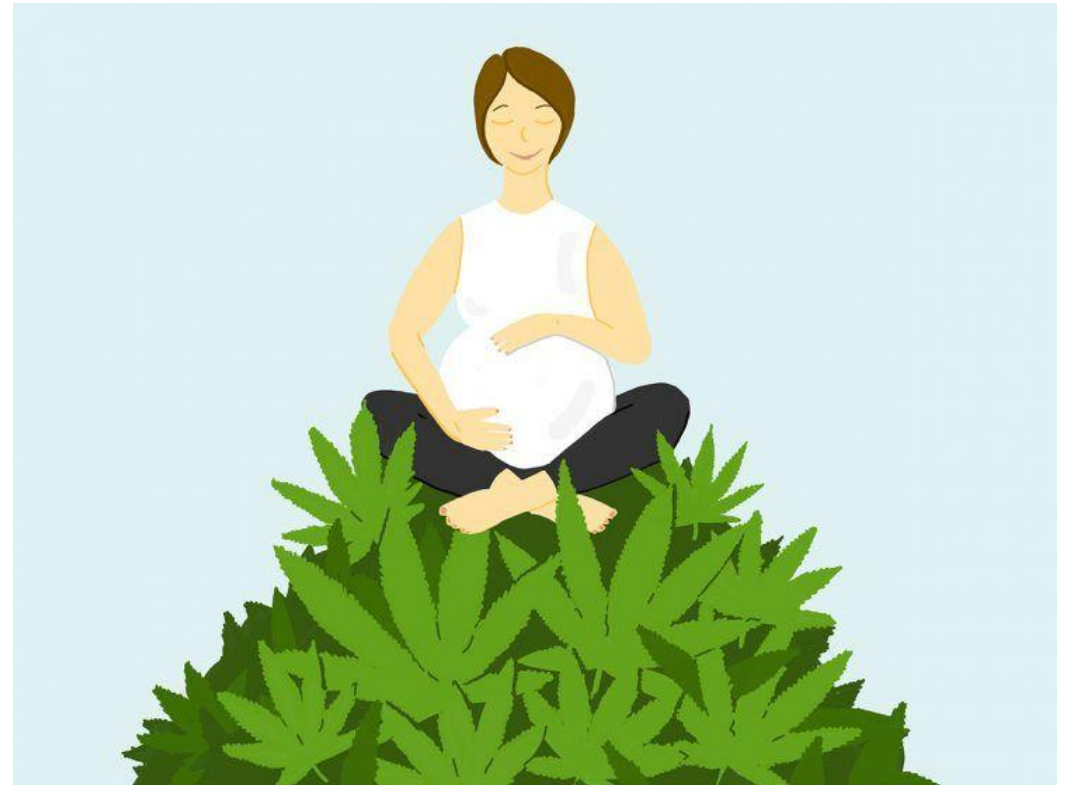


- Use during pregnancy to self-medicate for nausea / vomiting
- Increased risk of stillbirth
- Preterm babies, lower birthweight, need for neonatal care
- Autism
- SIDS



GANJA MAMAS

- 5% of pregnant women report smoking cannabis (USA)
- Most common illicit drug used during pregnancy (CANADA)
- NO SAFE AMOUNT
- Effects on neurocognitive function of child throughout their lifespan
- greater risk of developing SUD by age 18



NEUROCOGNITIVE IMPACT

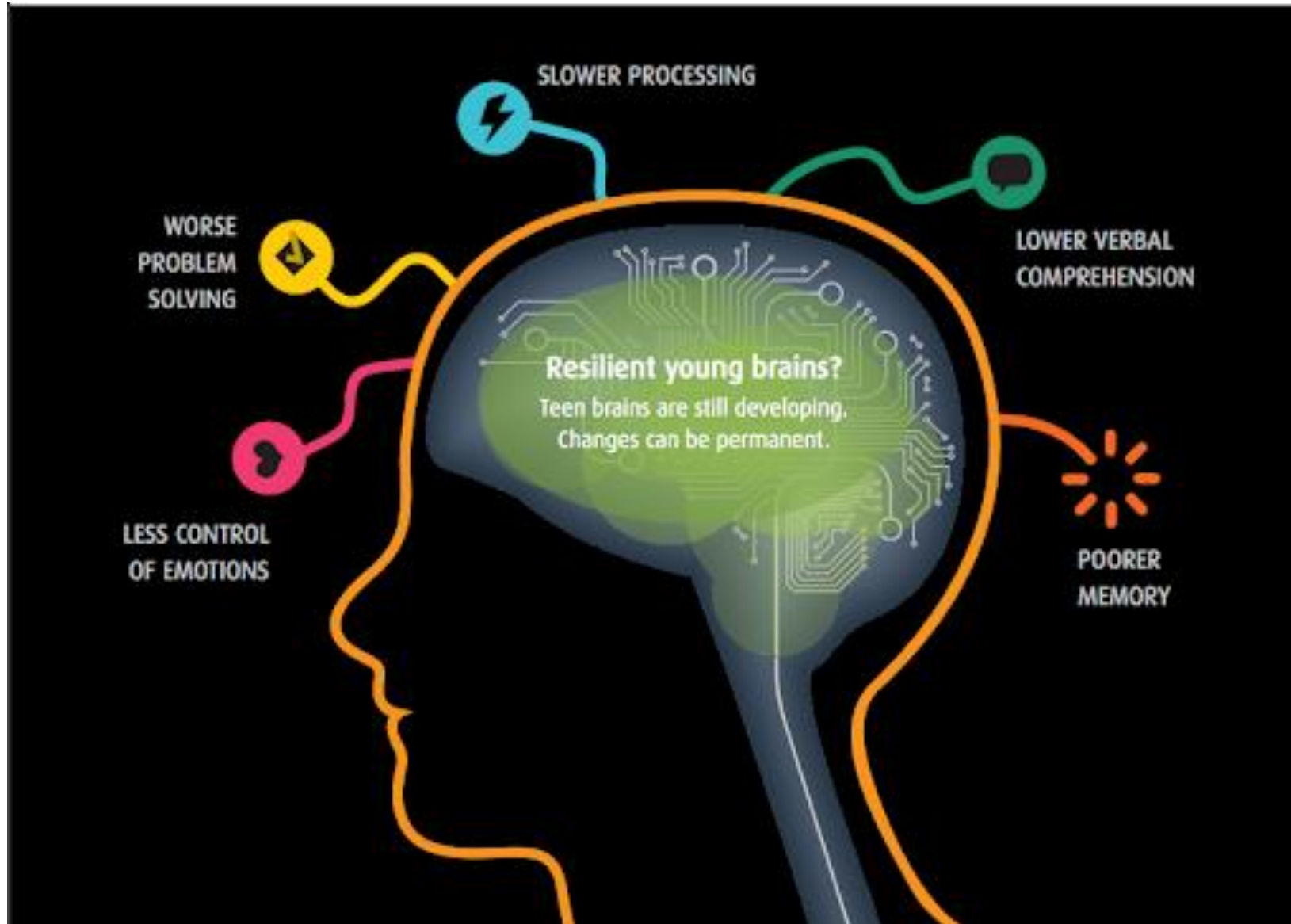
- Learning / processing speed
- Memory problems
- Deficits in executive functioning
- Decreased emotion regulation
- Poor verbal fluency
- Attentional deficits
- Amotivation / Anhedonia
- Dependency



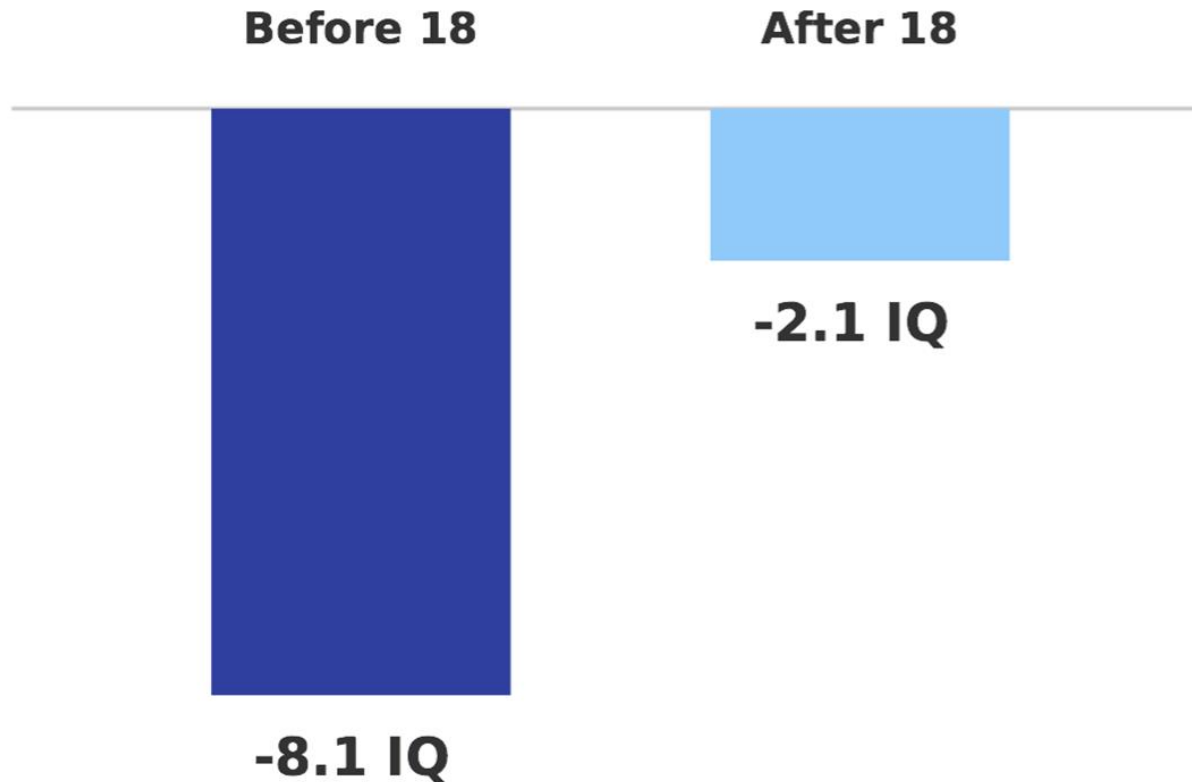
THE DEVELOPING BRAIN

- Endocannabinoid system drives brain development until the age of 25
- Fine tuning of neural circuitry involving pruning, rearrangement, and proliferation of white matter.
- Flooding the brain with exogenous cannabis interferes with this process





Marijuana+IQ: Adults vs Kids



Adult Marijuana users who started as kids experienced an average loss of:

8 IQ Points

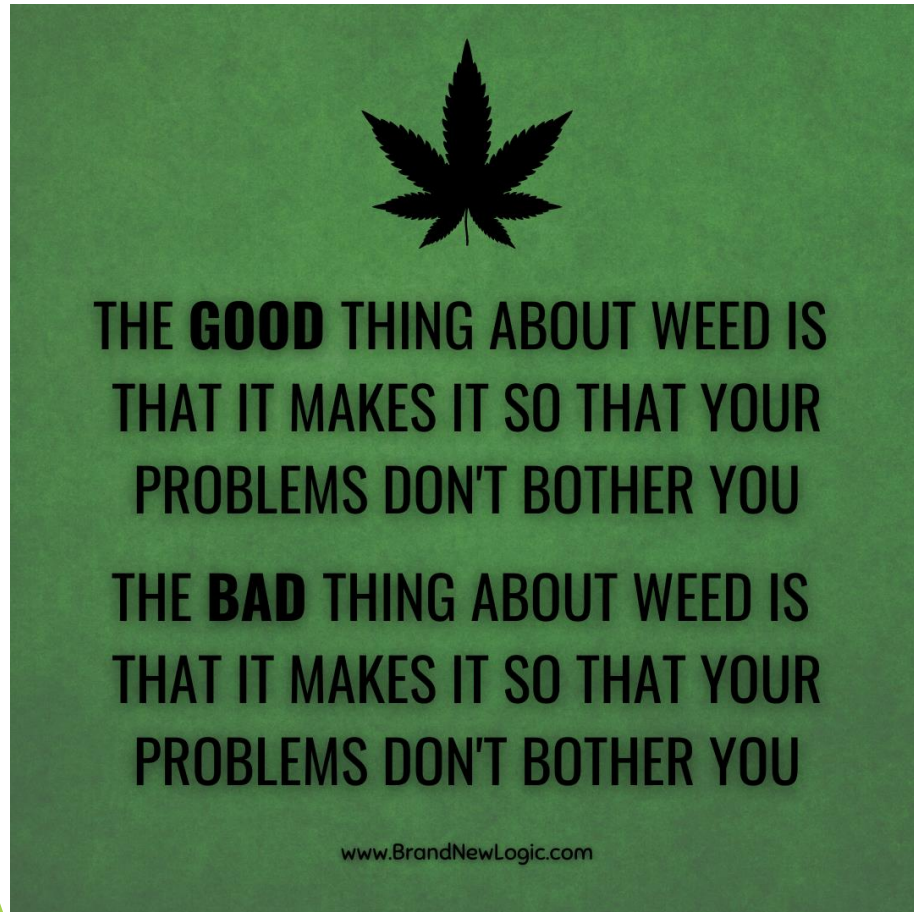
upon reaching adulthood.

HAZY FUTURE

- 60 % less likely to obtain a college / university degree
- Lower life satisfaction
- Difficulty achieving meaningful life goals
- Youth become dependent on THC faster than adults



AMOTIVATIONAL SYNDROME



- Anhedonia and apathy
- Mimics symptoms of depression
- Lack of goal-directed behaviors
- Lack of emotions / blunting
- Decreased interest





CANNABIS & PSYCHOSIS

- Cannabis is a modifiable risk factor for psychosis
- Serious mental disorder where thoughts and emotions are impaired
- Paranoia, suspiciousness, confused thinking / speech
- Visual / Auditory hallucinations / Delusions



THC & MENTAL ILLNESS

Anxiety

Depression

Suicide

Psychosis

Schizophrenia

WHO IS AT RISK?

Early cannabis users

Frequent “chronic” users

High potency users

Family history of mental illness

Family history of substance use

Stressed out / Poor coping

Preexisting mental health issues



THE BLUNT TRUTH

- Early Use
- High Potency
- Heavy use
- 4 times greater of psychosis
- Rates are expected to rise



MIDDLE AGED BRAINS

- Regular use in middle age can result in a 5.5% IQ drop from childhood.
- Memory and attentional issues
- Increase risk of early onset dementia



PHYSICAL HEALTH EFFECTS FOR ALL AGES

Greening out
& the spins

Toxins and
carcinogens

EVALI

Respiratory
infections

Weakened
immune
system

Skin damage
& aging

Mouth and
gum disease

Cardiac
Effects

CARDIOVASCULAR DOWNSIDES

- Reduced blood vessel function whether smoked or consumed
- Increased risk of heart attack and stroke
- Increased risk of heart failure
- Cardiac arrhythmias
- Myocardial infarction
- 35% increased risk of Afib





VAPING RISKS

- Heavy metal contamination
- Leaching from vape components
- 2nd and 3rd hand smoke effects
- Respiratory health of kids and pets
- EVALI
- Environmental impact

HYPEREMESIS

- Recurring episodes of intractable nausea, abdominal pain, weight loss and vomiting in chronic users
- Onset typically occurs after several years of chronic use
- Symptoms resolve with cessation / reduction of cannabis



EPIGENETICS

- chemical modifications to DNA that control whether genes are turned on or off
- changes that modulate depressive-anxious, psychotic, and addictive behavioral phenotypes.
- Can damage a cell's genetic information which can lead to DNA mutations, accelerated aging and cancer
- May be passed on through DNA to future generations
- More research is needed to study dose dependent effects



LEGALIZATION

GIVING THE GREEN LIGHT



HIGH TIME FOR A CHANGE



- The changing legal status of a substance does **NOT** alter its medical risk / benefit profile



WHAT IS LEGAL?

- Possession of 3 ounces of cannabis flower or 24 grams of cannabis concentrates.
- Up to 6 home grown plants per household
- NOT legal to smoke in a motor vehicle, private home, or on any federal property
- Legal to share with other adults 21 years of age or older
- Selling without a license “gifting” is not
- NOT legal to sell to or share with minors



BENEFITS



- Consumer Safety
- Ease of access
- Product variety
- Social Justice
- Tax revenue
- Job growth
- Reduced stigma
- Research advancements



CONSUMER SAFETY

- Cannabinoid content and ratios
- Heavy metals
- Bacteria / microbials
- Mycotoxins
- Residual solvents
- Pesticides
- Tracking from seed to store



CANNABIS TRENDS

- Strong black / gray market sales
- Underage sales without penalty
- Dabbing high potency oils, waxes and resins
- Decline in smoking cannabis flower
- Increased use of edible products
- Low consumer product awareness
- Mixed economic benefit



UNINTENDED CONSEQUENCES

- Growing perception of safety
- Increase in Drug Impaired Driving offences
- Unintended exposure with children / pet
- Increase in youth rates of mental illness
- Greater presence of cannabis in school settings
- Double the rates of prenatal cannabis use



PERCEPTION OF SAFETY

- Youth and Parents
- Clyde survey data
- Vape and smoke effects
- Safer than tobacco
- Cannabis advertising





Cannabis Impaired Driving

- Driving HIGH is still a DUI
- Perception of safety with users who have tolerance
- 600,000 New Yorkers self report driving cannabis impaired annually
- Drug Recognition Experts
- Slow reaction time, impair cognitive performance, and make it difficult to stay in a steady position in your lane



UNINTENDED INGESTION

Increasing access to edible products that look like everyday snacks



Acute toxicity, affecting the heart, breathing, brain



Alertness, motor-coordination



Severe cases ICU admissions and seizures



Dangerous packing and high potency



KIDS DON'T KNOW THE DIFFERENCE



SAFETY CONSIDERATIONS

REDUCING HARM



THE HARM REDUCTION MESSAGE

The safest use is no use

If you choose to use, choose to be safer

With respect and non-judgement, let's talk about how you can develop a safer relationship with cannabis

TIPS FOR TOKING IT EASY

- Consult a physician
- Don't mix substances
- Most responsible caregiver
- Don't drive high
- Don't use in public
- Avoid or limit use under age 25





UNWANTED EXTRAS

- Fentanyl – VERY dangerous
- Cocaine / Amphetamines
- Heavy metals
- Pesticides
- Mold and Bacteria
- Fake cannabis / K2 or Spice
- Mislabeled products
- Vape oils - Vitamin E Acetate

FENTANYL CONTAMINATION

- Any source other than a pharmacy or legal dispensary could be deadly
- Narcan Kits
- Fentanyl test strips
- Synthetic cannabis most risky



SAFER SOURCING

Medical / Legal
recreational
dispensary

Grow your
own

Stick to the
same source

Buy organic-ish

Buy outdoor
grown

Know your
producer

Low waste
packaging



SAFE STORAGE

- Stored away from children just like any other drug, medication or household chemical
- High spaces out of reach and out of sight
- Lock and key recommended as with controlled substances
- Original child proof packaging

THC HARM REDUCTION

- Use the safest method for YOU
- 72 hour “T” breaks
- Sober October
- Start low, go slow
- Eat a meal
- Stay hydrated
- Sober sitter

Smoking is the most harmful way to use cannabis.

Talk to your doctor about your cannabis use.



SET & SETTING

- Check your **MINDSET** and motivation before using
- How safe is your **SETTING** or environment?
- Watch your **TIMING**
- Outside is the safest **LOCATION**



BOOSTING YOUR NATURAL CANNABIS

- Dark chocolate
- Fun exercise
- Foods rich in polyphenols
- Omega 3 fatty acids
- Reduce your stress
- Herbal teas
- Exposure to cold
- Social connection



WHY IMPROVE YOUR CANNABIS IQ?

- Legal status
- Risks and Benefits
- Unintended consequences
- Misinformation & mixed messages
- Optimal brain functioning
- Future goals





Q & A

- Thank-you!!
 - Final thoughts and take aways
- 