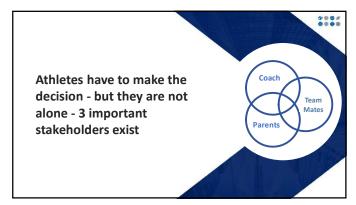


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# We focus on athletics because...

- 50-60% of students play high school sports
- Culture created in athletics can spill into the general population
- District guidelines generally supporting "substance-free athletics"
- Coaches have a unique influence in our kids lives – it can be leveraged if supported













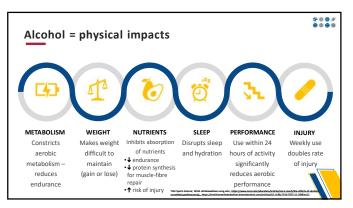


# Alcohol

- · Alcohol is a depressant
- It causes impairment (drunkenness) in a relatively nonspecific way – dehydration alters the cellular membranes in the brain – changing the way cells and neurotransmitters function
- Alcohol a.k.a ethanol is water soluble and flushes out of body in 24 hours



10



11

### Marijuana

- Marijuana is a hallucinogen distorts perception – distorts time and space
- It causes impairment (high) in a specific way – spoofing the endocannabinoid receptor system and neurotransmitters disrupting brain function





Marijuana, cont.

• Marijuana is fat soluble (lipophilic) and can stay in the body for weeks

000 #

• Weekend use may compromise skill and performance improvements all week

13

# Marijuana = neurological impacts







Brain = Adaptive Your brain is highly adaptive. It is the repository of who you are and manages your arc of understanding



4000

Brain = Athletic Tool

Condition, practice, play, get feedback - repeat = Athletic knowledge - physical and intellectual repository

14

# Marijuana = understanding how it works

Endocannabinoid Receptor Site System (CB1 & CB2):

- Anandamide naturally occurring cannabinoid
- THC (Delta 9 Tetrahydrocannabinol) rides on CB1 & CB2 receptors
- $\bullet$  THC interferes & takes over Anandamide's role
- Can see the similarities between them molecularly

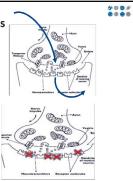


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# Marijuana = synaptic connections

- Homeostasis: balance & neutrality
- Over stimulating a synaptic system will cause receptors to shut down



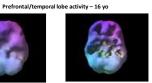
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#### Marijuana = neural compromise

Receptor shut down = real physiological event

It reduces neural activity overall





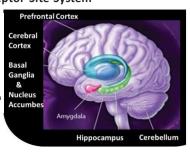
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2 year daily user

17

# **Endocannabinoid Receptor Site System**

- CB1 & CB2 over entire body
- 6 major regions of the brain contain huge number of endocannabinoid receptors
- This indicates anandamide is important for proper function in these regions





#### **Endocannabinoid signalling**

Hippocampus-memory or not

· Memory storage; eliminates memory

#### Frontal Lobes – working memory

- Ideas, thoughts, goals spark here
- Working memory –held for up to 2 minutes before processed through rest of the brain for implementation & long-term memory storage

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#### Basal Ganglia - body organization

Translates prefrontal cortex goals into action plan



19

### Endocannabinoid signalling, cont.

#### Cerebellum – fine motor

Manages grace & fine motor movement

#### Amygdala – emotional processing

- Bonding, nurturing connection
   Boredom, excitability, virtual newness motivation
- Spirituality awe

#### Nucleus Accumbens - pleasure/reward pathway

- why we do NOT get addicted to anti-biotics
  "Importance meter" Dopamine
- Anticipatory pleasure



20



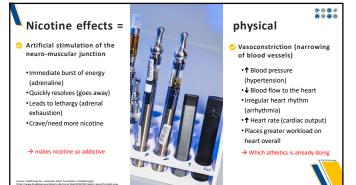


#### **Nicotine**

- Nicotine is a stimulant
- It doesn't intoxicate, but over stimulates the adrenaline system and can addict
- Nicotine is water soluble



22



23

#### Consuming via lungs

(Smoking or vaping Nicotine or THC)

- Repetitive bronchi-dilation caused by smoke or aerosol:
  - repetitive proncin-inlation caused by strioke or aerosc.

    Reduces the capacity of lungs to take in oxygen over time

    Decreases oxygen in bloodstream (critical for endurance)

    Air breathed in contains less oxygen

    Carbon monoxide (smoke) and chemicals (areosol) binds to hemoglobin which should be bound to oxygen

  - Ingesting carcinogens and other toxins
- Causes the release of enzymes that break down and slow the synthesis of collagen needed for healing/recovery of tendons, ligaments and bones
- Athletes who use via lungs:

  - Affrietes who use via lungs:

    Have less endurance,
    Recover more slowly,

    Heal more slowly,

    Are weaker, and
    Suffer more injuries than their non-smoking peers



Opioids – Athletes need to be careful – Oxycontin, Vicodin, Percocet

- Highly addictive need to stay aware of how they are affecting you
- · Don't be over-prescribed
- · Dispose of properly
- CDC flyer is good
- Heroin street opioid. Street drugs (cocaine, meth-amphetamines, ecstasy, etc...) are becoming lethal –fentanyl



25

# Addiction – protect yourself

- 90% of Adult Addicts started using something before 18
- Addiction is a chronic disease
- Your brain is not fully developed until 26
- If addiction is in your family, you have a 50% greater chance of becoming addicted
- 3 gateway drugs:
  - Alcohol 15% 20%
  - Marijuana 30%
  - Nicotine 85% 90%



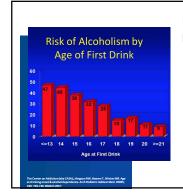
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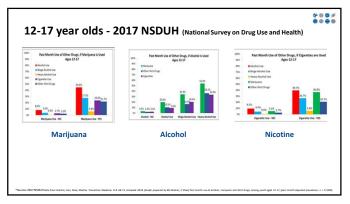


# More alcohol and drug basics for parents

- Adult addiction is now seen as **childhood** onset disease
- It's not easy, but empower your kids with knowledge of family addiction
- Youth use can cause mental illness (anxiety, depression, psychosis)
- There are 3 gateway drugs for adolescents: alcohol, marijuana & nicotine new understanding



31



32

# How to reduce risk

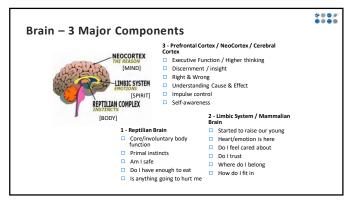
- Some will avoid use b/c of information
- More will avoid use b/c of **consequences** parent opinion, community opinion, family rules
- $\bullet$  Some will be mostly influenced by  $\underline{\textbf{peers}}$

Athletics offers all - which may discourage or delay use

- Information,
- Appropriate level of consequences & Relationships







35

#### Teen Brain - different from adults

12-17 – Limbic system

18-25 – Prefrontal cortex

26+ -- full neural capacity established for processing complicated things

NEOCORTEX

REPTILIAN COMPLEX

Drugs and alcohol are complicated neurologically
 Fact: the 12-17 brain is not ready for AOD neurologically



