A DISEASE OF THE BRAIN
WHO IS AT RISK?

- Genetics
- Environment
- Exposure
EMOTIONAL MOTIVATION

- Responding to Feelings
  - Social Anxiety
  - Anger
  - Depression
GENDER AND DRUGS
Emotional Intensity

- Ages 11 – 24 years
- Amygdala
  - Hormones
  - Larger and more active
- 2 to 4 times
Risk Taking and Peers

- Change at 13 years old
- New sites appear in brain
- Emotional reward for risk taking
- Peer influence
Better Studies

- Refute old studies
  - Medical properties, cancer, seizure disorder, pain

Brain Imaging

- Daily Marijuana Use Is Not Associated with Brain Morphometric Measures in Adolescents or Adults
Psychology of Addictive Behaviors

Chronic Adolescent Marijuana Use as a Risk Factor for Physical and Mental Health Problems in Young Adult Men

Online First Publication, August 3, 2015. Helene R. White, Dustin Pardini, Jordan Bechtold, and Theresa Simpson,
MARIJUANA ONLINE

- Cut.com
  - Grandmas smoking weed
    - 20 million views

420 web sites
Social Media
- YouTube, Tumblr, Facebook, Twitter
- Instant information
- Personal communication
- Possibly anonymous
- Nearly every young person has access

BRAIN FACTOR, CON’T.
EMERGING RESEARCH

- Demographic
  - Age, gender, set and setting

- Route of Administration
  - Smoked, vaporized, eaten

- Potency
  - Strength, % of cannabinoids

- Dose
  - How much, how often
STRESS IN AMERICA-APA STUDY

- 13-23
  - Highest stress  First time ever
    - 27% Extreme stress  8-10
    - 55% Moderate stress  5-7
GIRLS VS BOYS

Stress in Girls vs. Boys
More teen girls than boys report symptoms of stress and are more likely to say stress impacts their happiness a great deal.

- **Their appearance is a significant source of stress**
  - 68% girls vs. 55% boys

- **Report feeling irritable or angry in the past month**
  - 45% girls vs. 36% boys

- **Feel bad when comparing themselves to others on social media**
  - 30% girls vs. 13% boys

- **How others perceive them on social media is a significant source of stress**
  - 39% girls vs. 29% boys

- **Say they feel pressure to be a certain way**
  - 34% girls vs. 22% boys
STRESS IN AMERICA

- Emotional cost
- Negative emotions
- Anxiety
- Depression
- Frustration
- Anger

- Shift in age for suicidal behaviors
Seek drugs for:
- Create positive effect in brain chemistry
  - Dopamine release in reward sites
- Suppress negative emotions
- Activation in specific sites
MARIJUANA MARKETING: SEX, BUDS, AND ROCK AND ROLL
MARIJUANA MARKETING: IT’S GOOD FOR YOU

alcohol kills cannabis chills
MARIJUANA SUBSTITUTES

- Wicked X, Posh, Dank, K2 Compliant, Shakabuku, Kush, Bombay Blue, Aztec Gold

- “Not for human consumption”
  - Sold as potpourri or aromatherapy

- Discreet shipping

- Blend of herbal compounds may include:
  - Canavalia rosea, Clematis vitalba, Nelumbo nucifera, Pedicularis grandifolia, Heimia salicifolia, Leonurus sibiricus and Ledum palustre, Damiana, Lavender, Baybean, Yerba Mate
THE PRODUCTS: MARIJUANA SYNTHETICS

- Cannabinoids

- 3 experimental strands:
  - JWH-073, JWH-018, 200, 250
  - CP 47, CP 80
  - HU-210

- Clemson University

- John W. Huffman

- Higher Potency
MARIJUANA SYNTHETICS: RESEARCH APPLICATION

- Animal Studies

- Medical Use of Cannabinoids
  - Pain management
  - Appetite regulation

- No human clinical trials
  - Tested on primates and rodents
MARIJUANA SYNTHETICS: DIVERTED TO THE PUBLIC

- K2, Spice, Blond, Standard, Spice Gold, Zohai, Serenity
  - 3-4 years under radar
  - 2009 testing showed few herbal compounds
  - New synthetic cannabinoids discovered

(knockoff)
MARIJUANA, MARIJUANA SYNTHETICS: EFFECTS

- Physical
  - Rapid onset
  - Dilated pupils
  - Time distortion
  - Speech may be confused and non-responsive

MARIJUANA, MARIJUANA SYNTHETICS: EFFECTS, CON’T

- Social/Emotional
  - Bouts of laughter
  - Interference with color and sound

http://beckyland.wordpress.com/tag/synesthesia/
Behavioral

- Increased appetite
- Cognitive deficiencies

In vulnerable individuals:

- May lead to psychosis
- May deepen depression
MARIJUANA SYNTHETICS: SIGNIFICANT RISKS

- Addiction
  - Anandamide influence
  - High potency – more activity in CB1 and CB2 sites
  - May lead to dependency and addiction
  - Tolerance
  - Withdrawal
  - Compulsion
  - Loss of Control
  - Continued Use Despite Consequences
MARIJUANA SYNTHETICS: SIGNIFICANT RISKS, CONT

- Non-responsive
  - High dose – no divided attention
    - Operation of any moving vehicle
    - 2x more likely to have accident
  - Not attentive to environmental risks

- Cognitive impact
  - Measurable impact on memory and learning
  - IQ drop in early age onset
  - Potential paranoia and/or psychotic in vulnerable individuals
MARIJUANA SUBSTITUTES: RISKS

- Lung function
  - Joints, blunts, pipes, bongs
  - Vaporizers

- Unknown herbal products
  - Damiana
  - Yerba Mate

- Loaded Blunts
  - Herbals plus smokable:
    - Marijuana
    - Heroin, H-Bomb
    - Cocaine, Coco Puffs
    - Methamphetamine, M&Ms
    - Ketamine, Water
MARIJUANA SUBSTITUTES: EFFECTS

- Physical
  - Mild mental stimulation
  - Body relaxation

- Social/Emotional
  - Relaxation
  - Laughter

- Behavioral
  - Disconnected
MJ-Xchange is your Lifestyle Community

MJ-Xchange provides an interactive forum for members to socialize, share ideas, life events, news, network and make friendships. The site was created for members, by members and will continually evolve to meet members desires.
MARKETING MARIJUANA: CLOTHING, JEWELRY, TATOOS
NEW FORMATS
NEW PRODUCTS

- Marijuana edibles
THE HEALTHY ALTERNATIVE
NEW PRODUCTS: DABBING

- Butane Hash Oil
- Amber, Shatter, Ear Wax
NEW PRODUCTS

- Cloud 9
- AB-PINACA + Others

**Synthetic Cannabinoids**
- High Potency
- Dabbing
- E-pens
- Beverages

- Extractions always increase risk for bad outcomes!
- Addiction, Overdose, Accidental Death
DEVICES

User friendly
Magnetic
SOCIAL, EMOTIONAL COGNITIVE

- Internalize new skills
  - Neural pathways and chemistry
    - How to learn
    - How to manage emotions
    - How to behave
Brain Changes Related to Substance Abuse

- Reward System Shutdown
  - Systemic Chemical Change
  - CREB

- Embedded Emotional Memory
  - New Protein Activity
  - PKMzeta
LIFE CHANGES

- Limited Practice Skills
  - Medicate for Feelings
  - No Life Skills
    - Social/Emotional
    - Relationship

- Adult Brain
  - Less Fire Power
  - Harder Work
Legal Status
- 21 and over
- Limited amount
- No vehicle operation
- No public use

Impact on Brain Development

College Campus
TALKING THE TALK

- Conversation not Lecture
  - Use active listening
  - Use “I” statements
- Don’t be surprised at resistance
FOCUS ON THE FOLLOWING

- Impact of Marijuana on Learning
- Impact of Marijuana on Lifestyle
- Impact of Marijuana on Health
Don’t get high and Drive

Don’t get high and Drink

Don’t get High before School

Don’t get High Pregnant