

## Vaping in Adolescents Fire, Stupid or Boujee?



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# Title and Affiliation

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# Disclosure

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- Nothing to disclose

# Learning Objectives

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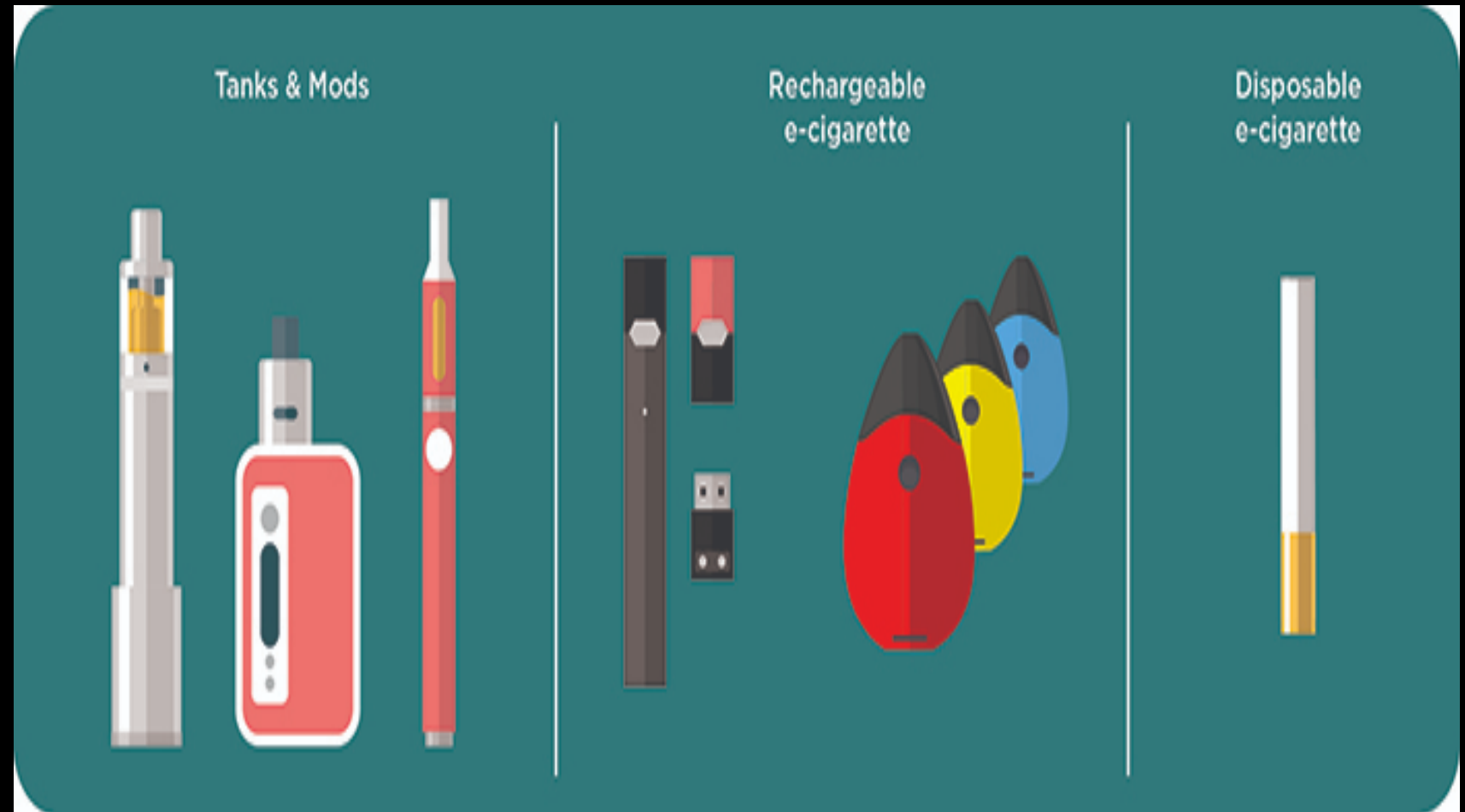


- Define vaping in adolescents
- Discuss effects on physical health
- Describe effects on mental health
- Review how to talk to an adolescent and still sound fly-AKA Stages of Change and Motivational Interviewing (MI)
- Define how MI and Mindfulness can be used for the chronic pain population



# Common street Names

- E-cigs
- E-Hookahs
- Mods
- Vape Pens
- Vapes
- Juuls
- Juuling



# Social Media and Vaping

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Juul was first major E-cig brand to use social media as part of marketing strategy

#Juul

#deliverypods

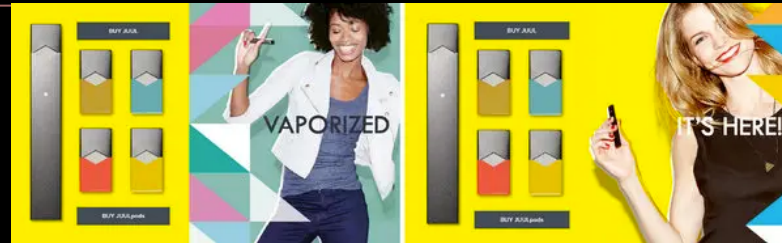
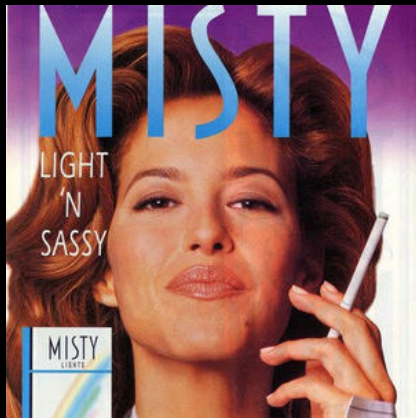
#juuling

#Juulmango

**#More flavor, More buzz**

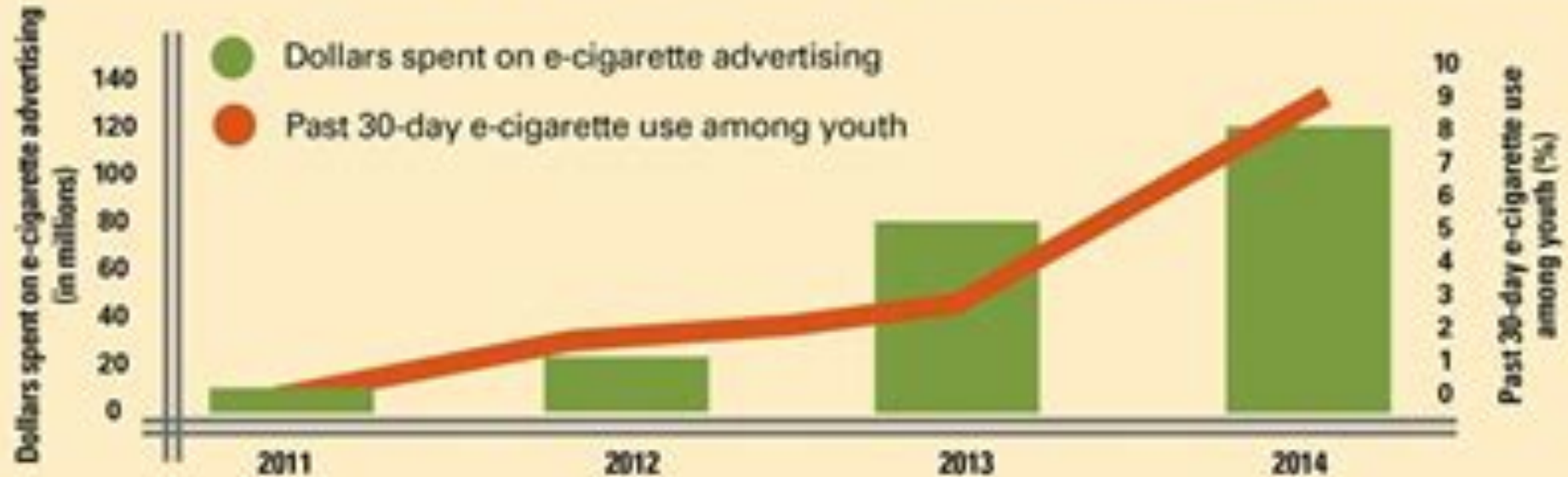
WILLETT, JEFFREY G., ET AL. "RECOGNITION, USE AND PERCEPTIONS OF JUUL AMONG YOUTH AND YOUNG ADULTS." *TOBACCO CONTROL* 28.1 (2019): 115-116.

# Vaping Industry copying Big Tobacco strategy



# What's the Impact from Advertising?

E-cigarette use among youth is rising as e-cigarette advertising grows



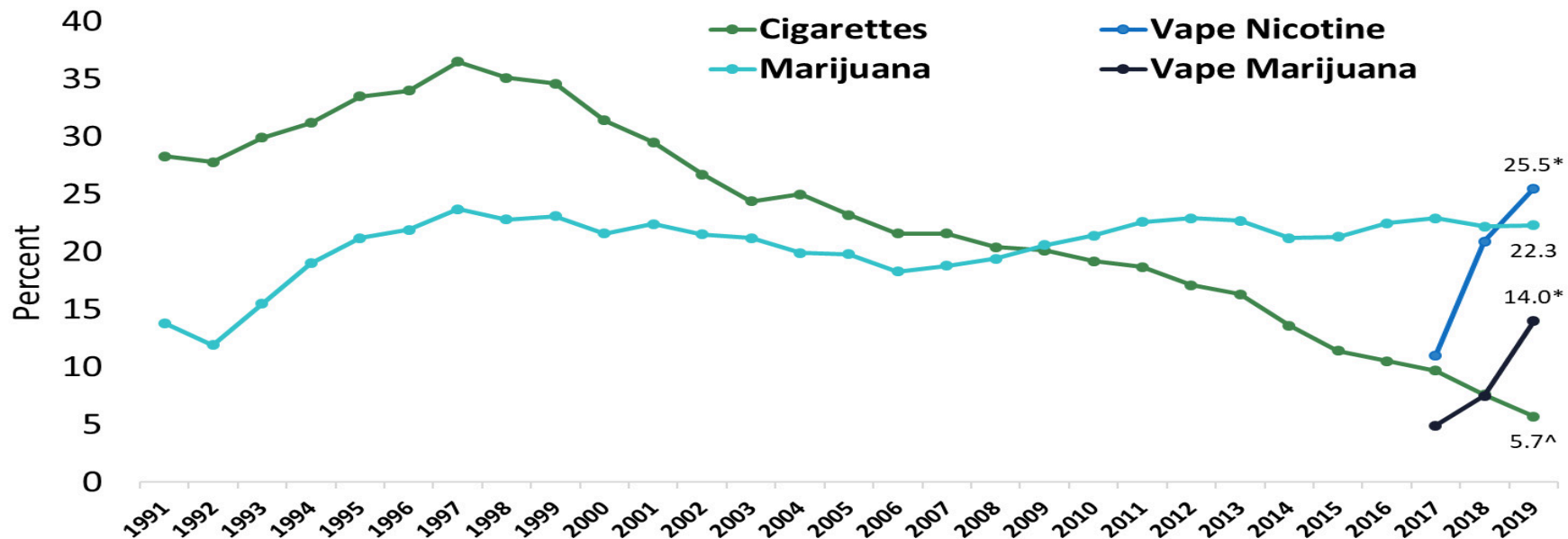
SOURCE: National Youth Tobacco Survey, 2011-2014; Kim et al (2014); Truth Initiative (2015).

Noland, Melody, et al. "Current use of e-cigarettes and conventional cigarettes among US high school students in urban and rural locations: 2014 National Youth Tobacco Survey." *American Journal of Health Promotion* 32.5 (2018): 1239-1247.



# Monitoring The Future: 2019

## Percent of Students Reporting Marijuana, Cigarette, Vape Use in Past Month, 12<sup>th</sup> Grade



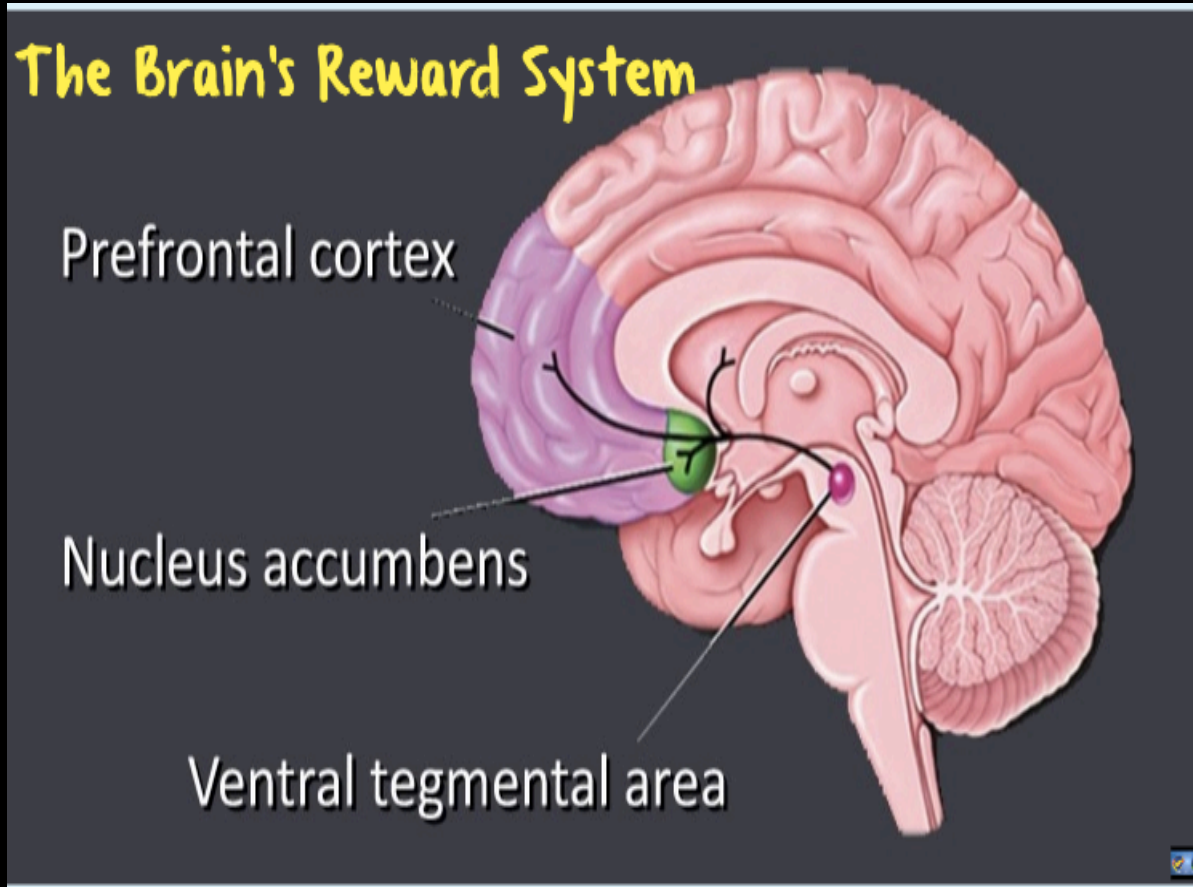
\*Significant increase or ^significant decline compared to the 2018 MTF Survey.

# Adolescents, Covid 19, and Vaping

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- Evidence shows vaping can weaken the lungs and normal respiratory functions as well as causes airway and lung inflammation
- E-cig use in adolescents and young adults has a 5 times more likely risk of contracting Covid 19 based on a Stanford study done June 2020.
  - High correlation among dual use, e-cig use and Covid 19 testing and diagnosis
  - Damage to lungs, both from combustible and e-cig use
  - Sharing devices, touching face, mouth frequently

# Brain Development of Adolescents



Still developing until mid twenties  
Addiction centers particularly vulnerable due to pruning, myelination  
Prefrontal Cortex under construction, can lead to more impulsivity

# Mental Health and Addiction Risks

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- THC has potential to trigger psychosis, sometimes persistently, in genetically predisposed adolescents
- Cannabis oil in vape pens carries risks for mental health, due to delivery system of e-cigs/vaping
- Vaporized cannabis found to produce greater pharmacodynamic effects and higher concentrations of THC in blood compared with equal doses of smoked cannabis.
- Teens show higher risks for use of combustible tobacco products: National Academy of Medicine Report 2018, shows e-cigs have potential to increase future combustible tobacco use in teens and adolescents
- Cannabis use linked to increased risks for other addictions in vulnerable populations

■Miech, Richard, et al. "Trends in adolescent vaping, 2017–2019." *New England Journal of Medicine* 381.15 (2019): 1490-1491.

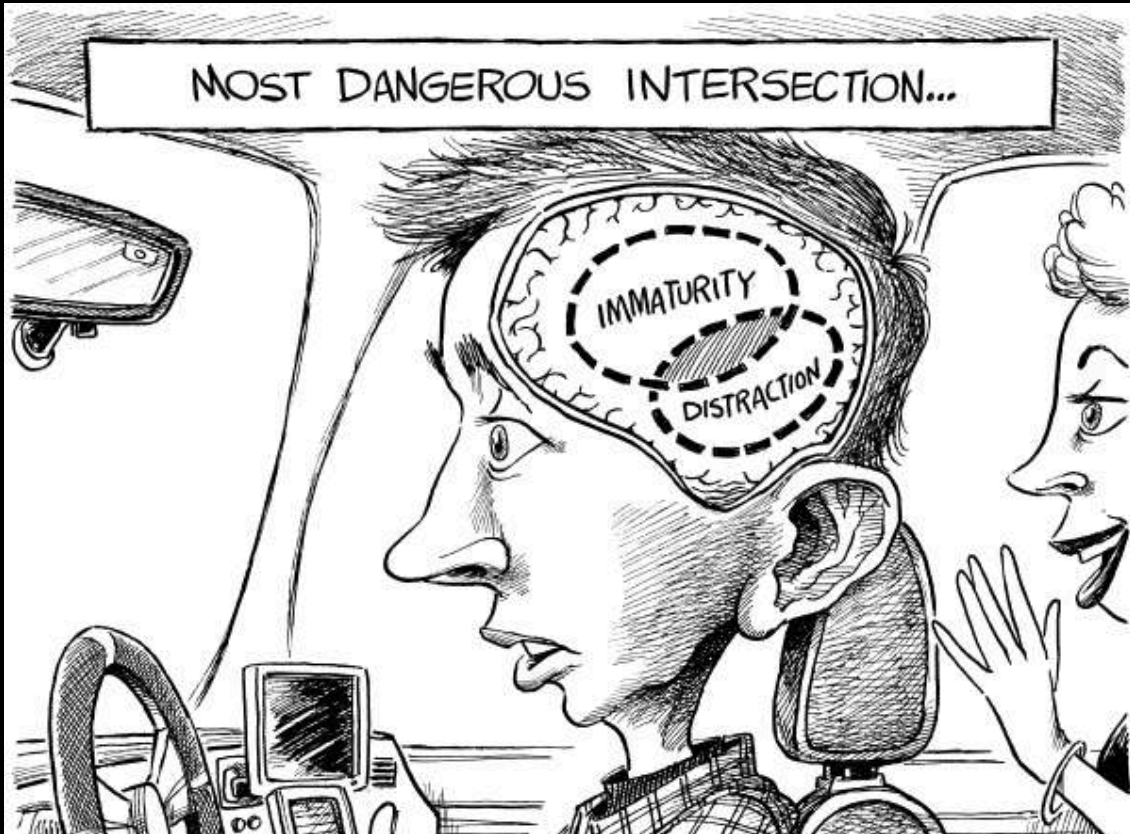
■Knapp, Ashley A., et al. "Emerging trends in cannabis administration among adolescent cannabis users." *Journal of Adolescent Health* 64.4 (2019): 487-493.

■Spindle, TR, Cone, EJ, Schlienz, NJ, et al. (2018) Acute effects of smoked and vaporized cannabis in healthy adults who infrequently use cannabis: A crossover trial. *JAMA Network Open* 1(7): e184841.

■Noble, MJ, Hedberg, K, Hendrickson, RG (2019) Acute cannabis toxicity. *Clinical Toxicology (Philadelphia, Pa)* 57(8): 735–742.



# Learning, Working Memory, and Attention



Nicotine in the developing brain has been associated with:

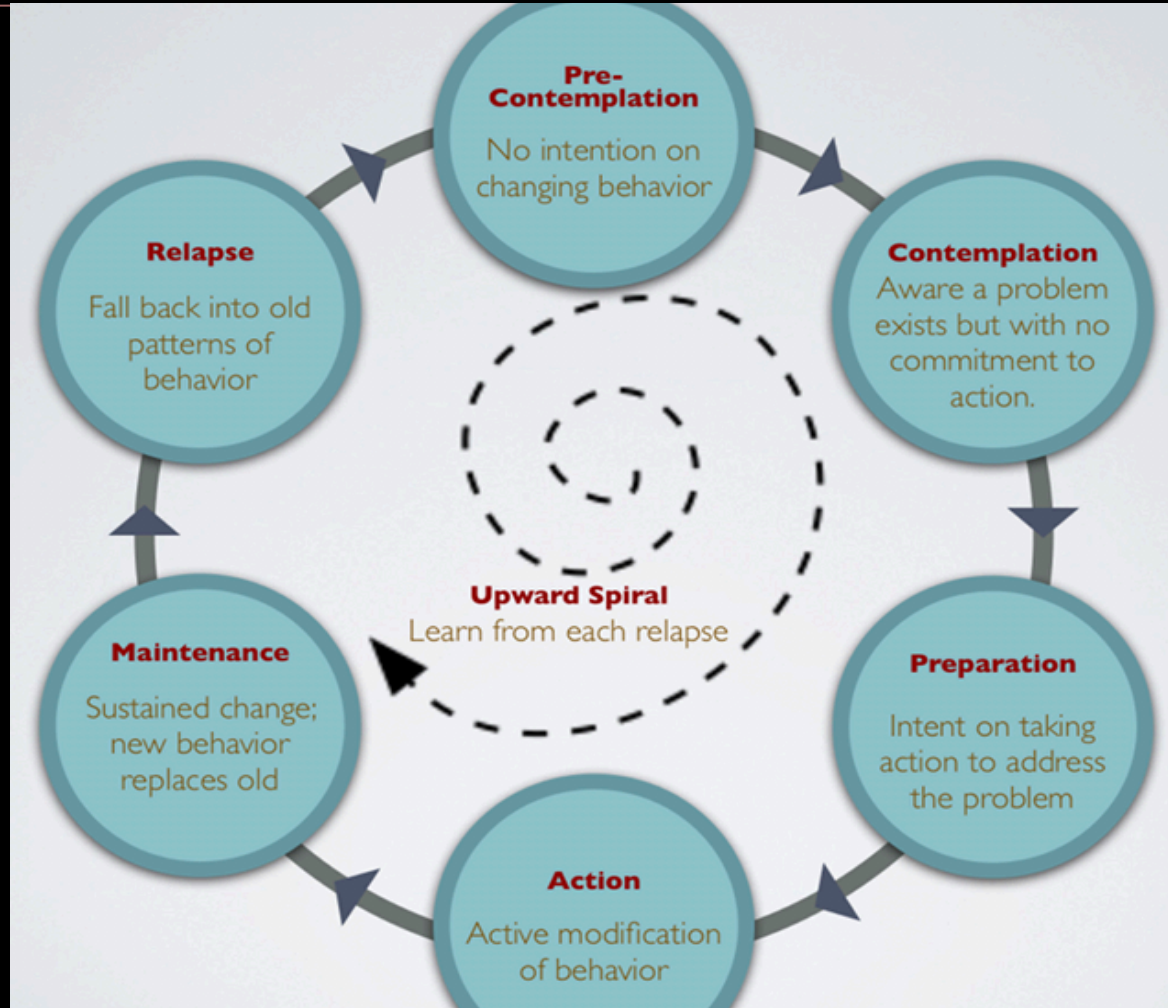
- Poor learning
- Lower academic performance
- Increased aggressive and impulsive behavior
- Poor sleep quality
- Attention deficits, impaired memory, and cognition
- Potential increased depression and suicidal ideation

Gaiha, Shivani Mathur, Jing Cheng, and Bonnie Halpern-Felsher. "Association Between Youth Smoking, Electronic Cigarette Use, and Coronavirus Disease 2019." *Journal of Adolescent Health* (2020).

# How do I talk to a millennial about vaping?



# Prochaska and DiClemente: Stages of Change





# Motivational Interviewing

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- Patient centered
- Focused on patient's goals and motivations
- Addresses resistance, enhances 'change talk'
- Identifies commitment and confidence to make change
- Applicable to many fields and situations

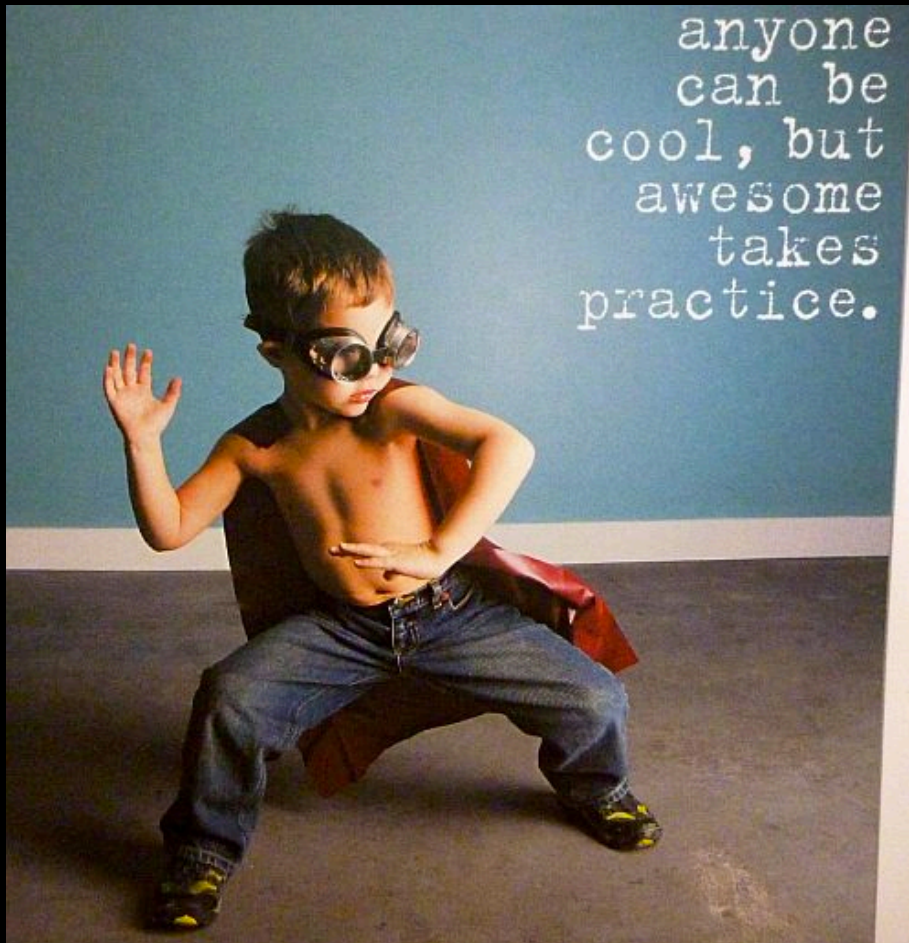
# MI principles

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- Embrace the spirit of MI
- Reflexive listening
- Affirmations
- Ask, Tell, Ask
- Evoke and Sustain Change Talk
- Planning with SMART goals

# Rule # 1: Be Cool!

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- Don't lecture or scold
- Compassion, acceptance, partnership
- Know your facts
- Reflect:
  - I think I should quit the vape.
  - You want to quit vaping
- Affirmations: Appreciate efforts and strengths

## Rule #2 Find your moment!

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## Rule #3: Work on your Street Cred

- According to the National Youth Tobacco Survey 2016, the number one reason for youth and young adults to vape is that a friend or family member does: 39%





## Rule #4: Speak your truth

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- Ask Tell Ask
- Tell: Educate on risks
- Correct the misinformation:
  - E-cigs are not safer than combustible tobacco
  - E-cigs can increase risks for mental health, harder drugs, learning problems
- Plan with SMART goals and close with a commitment

# Motivational Interviewing is Powerful Tool for other venues

- MI shown effective to manage chronic pain in elderly population
- Females with fibromyalgia showed improvements in pain levels and QOL
- Use of MI in a patient population on opioids reduced risks of opioid misuse significantly



Tse, Mimi MY, Sinfia KS Vong, and Shuk Kwan Tang. "Motivational interviewing and exercise programme for community-dwelling older persons with chronic pain: a randomised controlled study." *Journal of clinical nursing* 22.13-14 (2013): 1843-1856.

Ang, Dennis, et al. "Exercise-based motivational interviewing for female patients with fibromyalgia: a case series." *Clinical rheumatology* 26.11 (2007): 1843-1849.

Chang, Yu-Ping, et al. "The effect of motivational interviewing on prescription opioid adherence among older adults with chronic pain." *Perspectives in psychiatric care* 51.3 (2015): 211-219.

# MI powerful tool for use in Primary Care Settings

- Can be used to motivate patients for change:
- Weight
- Blood Pressure
- Activity levels
- Improved self efficacy
- ‘Dose dependent’
- Effective in disadvantaged populations.

## ■ Aerobics in Hell



# What about Mindfulness?

## Is there utility for substance and pain management?



Manteo Mitchell  
SUMMER OLYMPICS 2012



# Mindfulness Based Stress Reduction

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- Jon Kabat-Zinn developed MBSR
- Study in JAMA 2016 showed MBSR along with CBT (Cognitive Behavioral Therapy) reduced chronic low back pain and improved functional limitations statistically over 'care as usual'
- MBSR: learning to 'feel' the body: size, weight, temperature, space, connectedness of limbs to rest of body
- Body Maps or Body Scans have shown a reduction in chronic pain levels

2015 NIDA study on Mindfulness with chronic pain:

Treated chronic pain patients at risk for opioid misuse with either

- 1 Support group
- 2 Mindfulness training

Results suggest that teaching people who misuse opioids to mindfully attend to positive aspects of their life may increase the perceived value of natural rewards

Kabat-Zinn, Jon. "Mindfulness-based stress reduction (MBSR)." *Constructivism in the Human Sciences* 8.2 (2003): 73.

Cherkin, Daniel C., et al. "Effect of mindfulness-based stress reduction vs cognitive behavioral therapy or usual care on back pain and functional limitations in adults with chronic low back pain: a randomized clinical trial." *Jama* 315.12 (2016): 1240-1249.

# MINDFULNESS BODY SCAN EXERCISE

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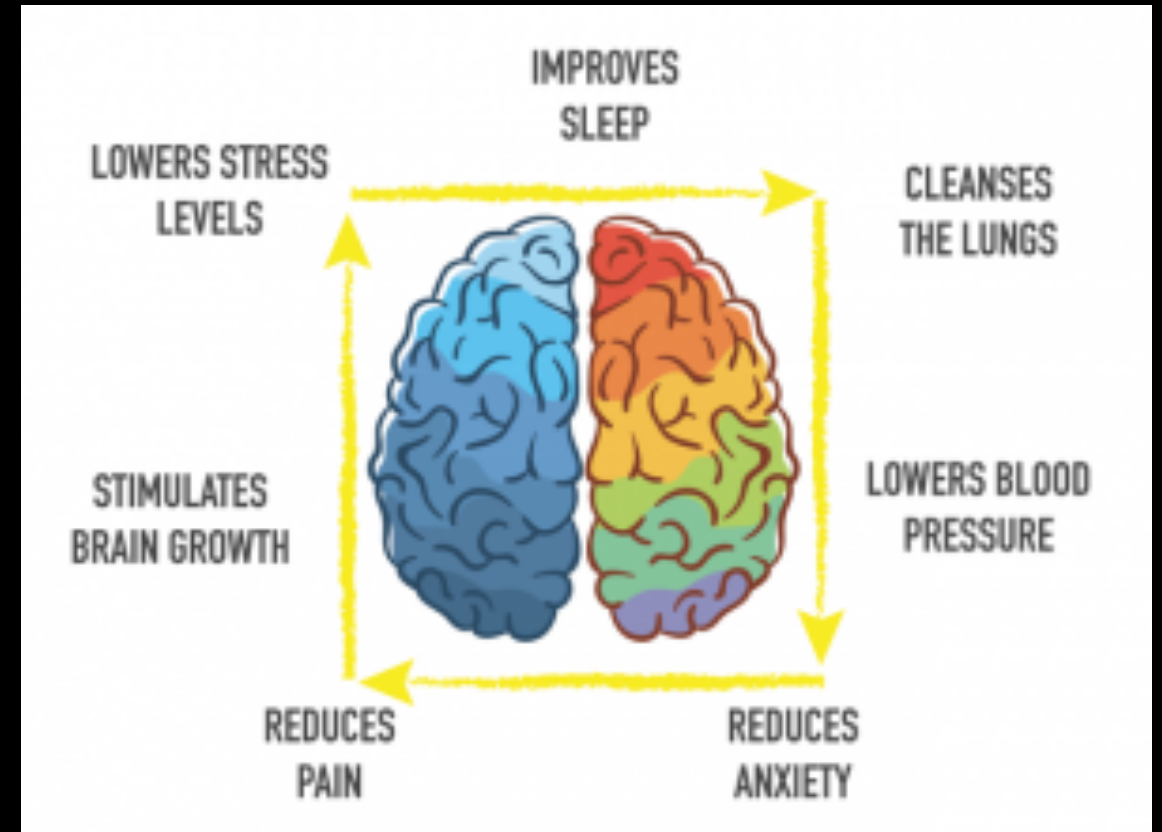
- Belly
- Feet
- Left versus right
- Weight
- Words to describe should be simple, rooted in five senses

Ussher, Michael, et al. "Immediate effects of a brief mindfulness-based body scan on patients with chronic pain." *Journal of behavioral medicine* 37.1 (2014): 127-134.

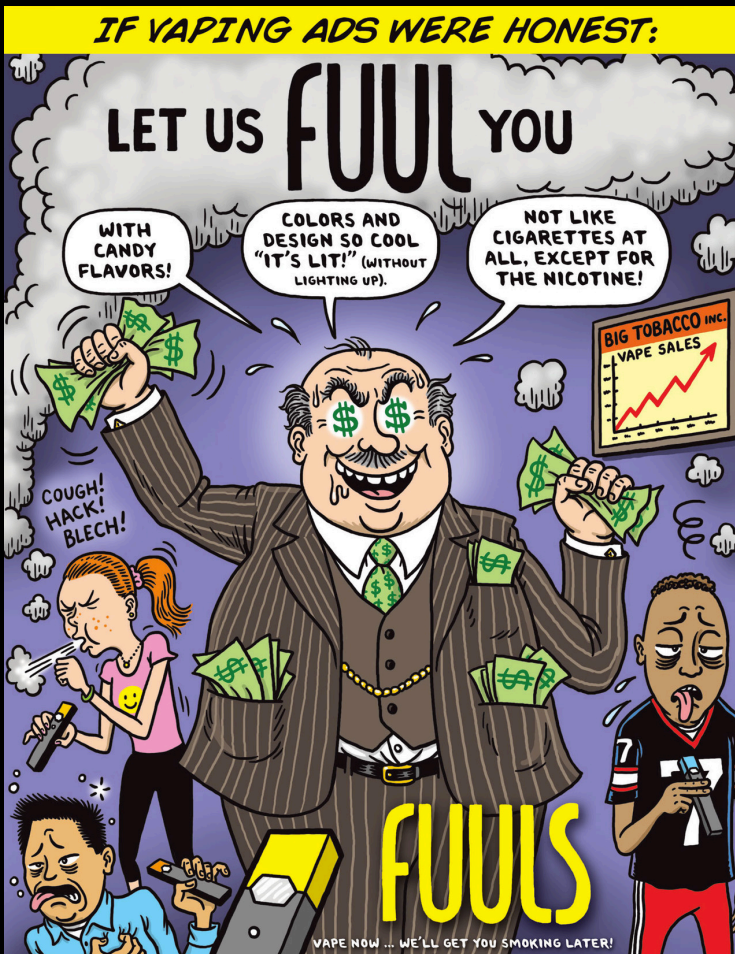


# NAVY SEAL BOX BREATHING

- Inhale for 4 seconds
- Hold breath for 4 seconds
- Release over 4 seconds
- Hold lungs empty for 4 seconds



# Final thoughts



- Vaping=New Big Tobacco
- Adolescent vaping on the rise
- Vaping carries physical, mental health, addiction risks unique for adolescents
- MI a useful tool that can make you look cool
- MI and MSBR have utility in managing chronic pain and other conditions



# Post Test!

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Q1: According to Monitoring the Future Study 2019, what percentage of 12th graders have vaped anything (nicotine, marijuana) in the last year?

- a. 10%
- b. 0% (teenagers are not allowed to vape)
- c. 40%
- d. 65%

Q2 Readiness to Change includes the following EXCEPT

- a. Pre contemplative
- b. Contemplative
- c. Preparation
- d. Confrontation**

Q3: A 17-year-old male is caught by his astute English teacher vaping in class. He has been using what looks to be a USB flash drive but is really a vape pen. After confrontation from mom, he admits to 'juuling' for the last 3 months. What should the mother's next move be?

- a. Scold and lecture
- b. Quit smoking herself
- c. Talk with his youth pastor
- d. Buy him THC oil to use instead of vape juice