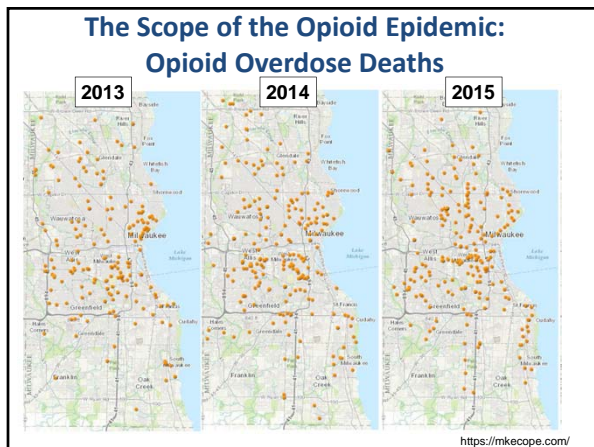
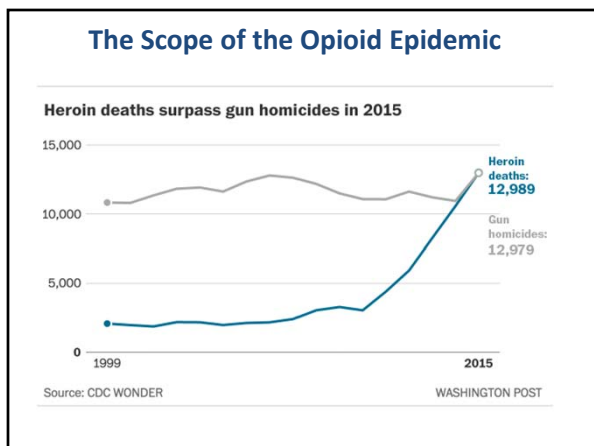

Conversations with Scientists

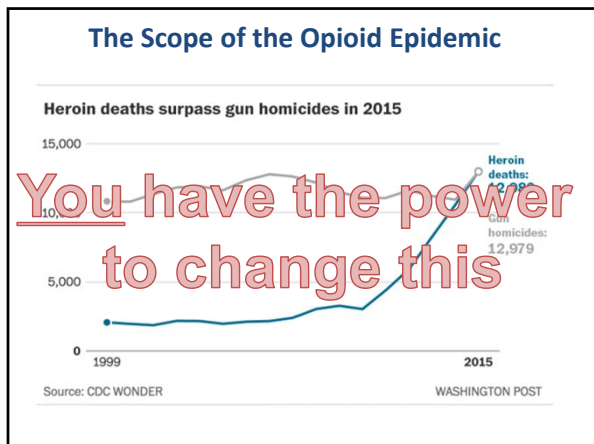
Opioids and Addiction

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Medical College of Wisconsin







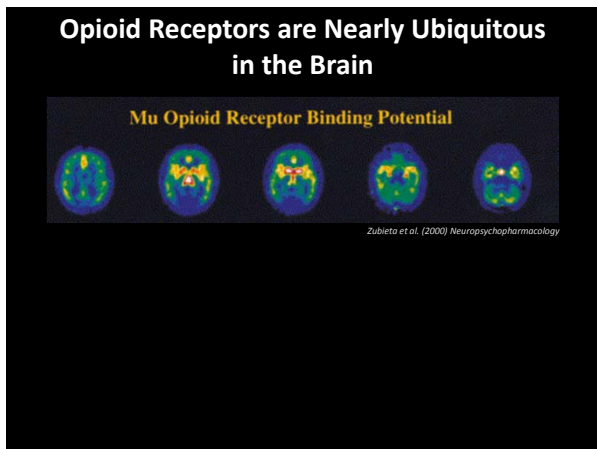
Outline

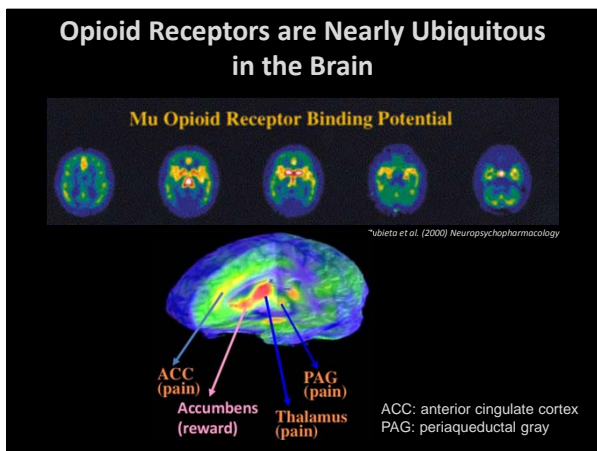
- **How do opioids change the brain and the body?**
 - Tolerance, dependence and withdrawal facilitate continuous use
 - Changes in the brain underlie drug cravings that can persist for years after abstinence

Outline

- **How do opioids change the brain and the body?**
 - Tolerance, dependence and withdrawal facilitate continuous use
 - Changes in the brain underlie drug cravings that can persist for years after abstinence
- **Homework**
 - Talk to friends and family about the dangers of opioid misuse
 - Use and discard prescription opioids responsibly

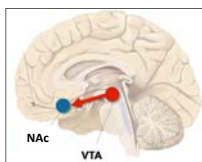
“It just triggered something in my brain... I became addicted that day.”





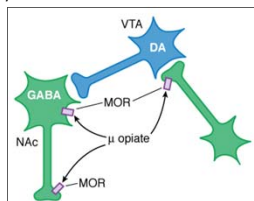
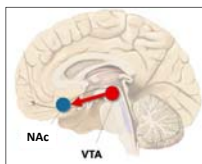
Opioids and Euphoria

- Primarily mediated by mesolimbic circuit

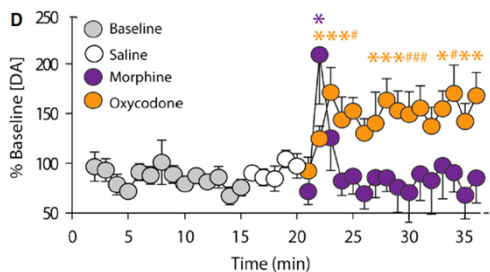


Opioids and Euphoria

- Primarily mediated by mesolimbic circuit
 - Mu opioid receptors (MORs) on GABA interneurons in ventral tegmental area (VTA) disinhibit dopamine (DA) neurons
 - Mu opioid receptors on GABA medium spiny neurons in nucleus accumbens (NAc)



Oxycodone has a Prolonged Effect on Nucleus Accumbens Dopamine

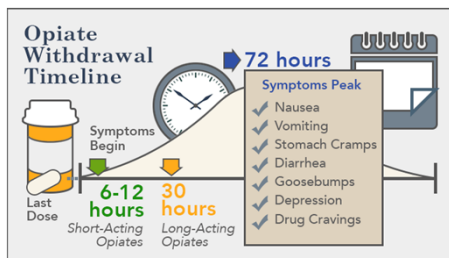


Vander Weele et al. *European Journal of Neuroscience* (2014)

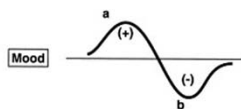
“Every four hours the chills started setting in...”

“I wasn’t using to get high anymore, I was using to stay well...”

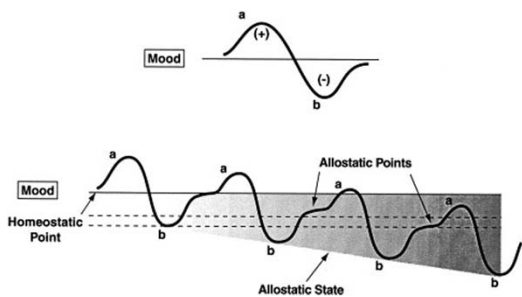
Opioids Change the Brain and Body



Opioids Change the Brain and Body



Opioids Change the Brain and Body



“...it’s something I work at every day...”

“ If something happens to trigger my need, the craving comes back as fresh as it was the very first week of sobriety [Read more >](#)”

Jack: **nine months clean**, Texas, US
<https://www.theguardian.com/society/interactive/2014/feb/11/heroin-addiction-recovery-readers-response-interactive>

●● If something happens to trigger my need, the craving comes back as fresh as it was the very first week of sobriety **Read more »**

The concept of triggers is very important to understand; certain events, places, people and emotions serve as a catalyst to invoke the temptation to fall back on one's progress.

Jack: **nine months clean, Texas, US**

<https://www.theguardian.com/society/interactive/2014/feb/11/heroin-addiction-recovery-readers-response-interactive>

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The concept of triggers is very important to understand; certain events, places, people and emotions serve as a catalyst to invoke the temptation to fall back on one's progress.

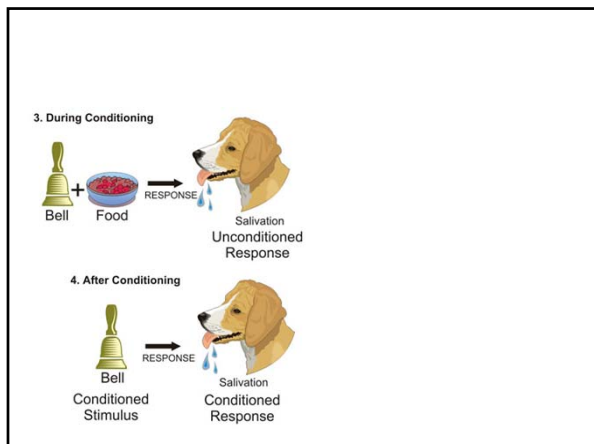
I can go for months without being tempted to use, but if something happens to trigger my need, the craving comes back as fresh as it was the very first week of sobriety. ●●

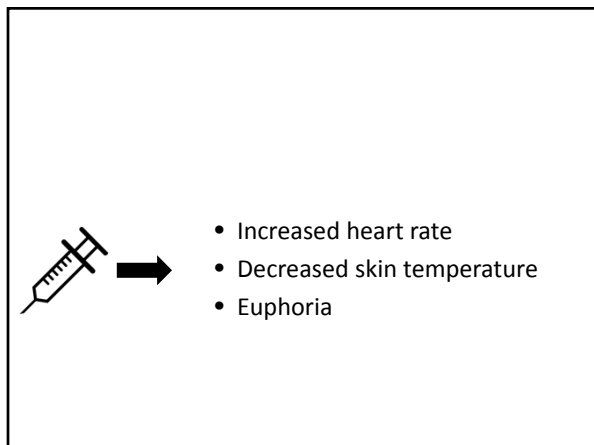
Jack: **nine months clean, Texas, US**

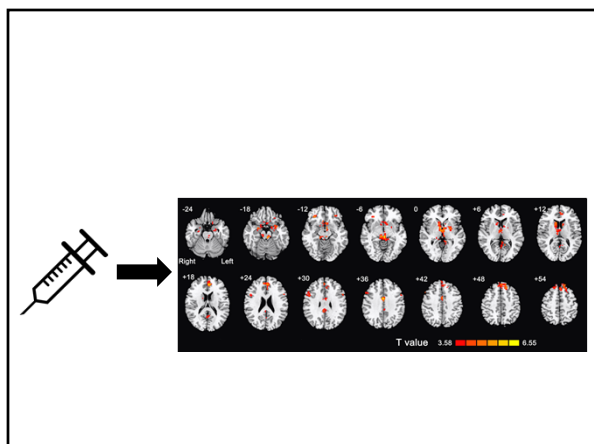
<https://www.theguardian.com/society/interactive/2014/feb/11/heroin-addiction-recovery-readers-response-interactive>

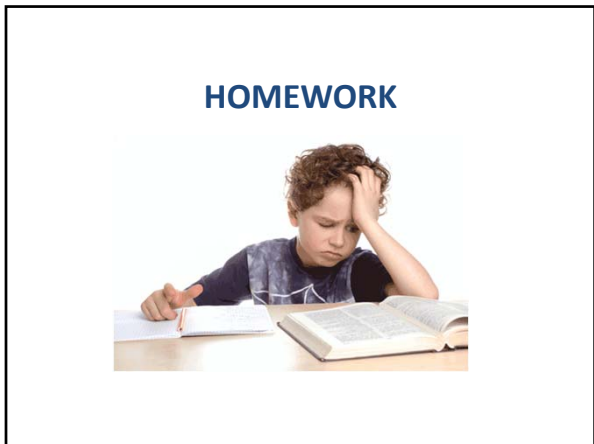
3. During Conditioning











Homework

- **Talk to your friends and family**
 - Common misconception - prescription drugs are safe
 - Reality: More overdoses from prescription opioids than heroin and cocaine combined

Homework

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 - Common misconception - prescription drugs are safe
 - Reality: More overdoses from prescription opioids than heroin and cocaine combined

Resources:

- <https://www.fbi.gov/ChasingTheDragon>
- <http://doseofrealitywi.gov/>
- <https://mkecope.com>

More Information

- **Narcotics anonymous**
 - Anonymous support groups
 - <http://www.na.org/>
- **Nar-Anon**
 - Anonymous support groups for friends/family
 - <http://www.nar-anon.org/>
- **Teen-Anon**
 - Anonymous support groups for teens who either use drugs or friends/family of those who do
 - <http://www.teen-anon.com/home.htm>

Homework

- **Safely store and dispose of unused prescription drugs**
 - More than 70% of people abusing prescription painkillers get them through friends or relatives.



Acknowledgements

- **National Institute on Drug Abuse**

- **MCW Neuroscience Research Center**

- **Advancing a Healthier Wisconsin (AHW)**

