SW AND SUD: SESSION 4 NEUROBIOLOGY

Christina E.J. Belknap

ADJUSTMENTS TO PORTFOLIO

Portfolio

- Adjusted rubric: 2-3 pages with suggested areas to cover but up to you what you discuss and reflect on here: whatever you would find meaningful in regard to this topic area! Go for it.
- Main focus is the artifacts
- Briefer conclusion
- Goal: *to allow for more creativity and choice on how to bring in your experience and insight on this area of work.*

STUDENT LED DISCUSSION

BRAIN FACTS: ADDICTION

Drugs interfere with neurotransmitters and circuitry of the brain

Basal Ganglia: "reward circuit" involves pleasure, motivation, and formation of habits and routines. Substances over-activates this circuit which produces euphoria. However, with repeated exposure the circuit adapts and dimishes sensitivity making it hard to feel pleasure without the impact of continued drug use.

Extended Amygdala: stressful feelings; anxiety; irritability; unease which are part of what manifests during withdrawal in the absensce of the drug.

Prefrontal Cortex: ability to think, plan, solve problems, make decisions, exert self-control over impulses. Last part of the brain to develop making adolescents/teens particuarly vulenrable.

The interaction between **Pre-frontal Cortex** circuits along with the **Basal Ganglia** (reward/pleasure/habits) and **extended amygdala** contribute to compulsive use and dimishing control.

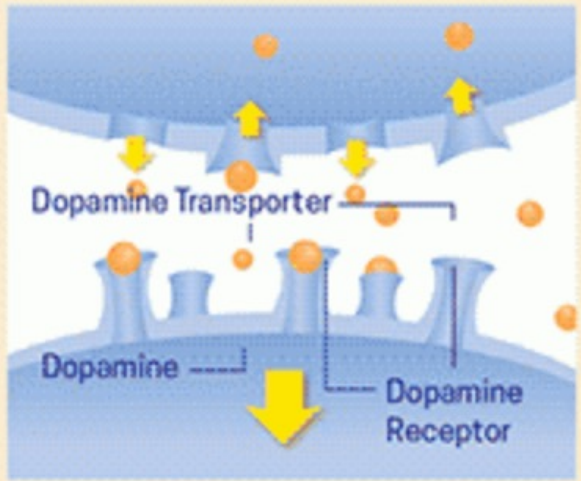
Some drugs, like opioids, disrupt other parts of the brain such as the **brain stem** which controls basic fucntioning (heart rate, breathing, sleeping) which attributes to the particularly high risk associated with opioid overdose.

Some drugs target the brain's pleasure center

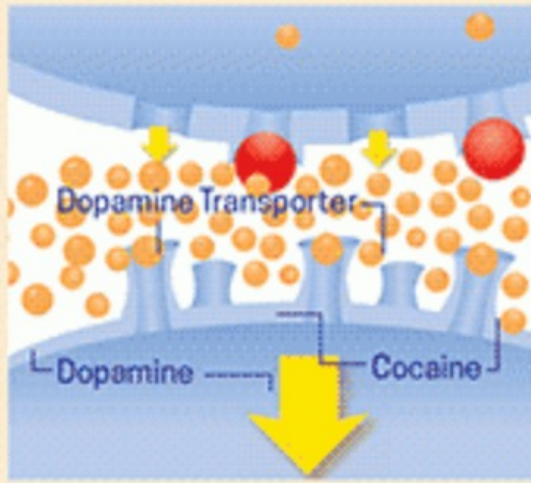
Brain reward (dopamine pathways)

These brain circuits are important for natural rewards such as food, music, and sex.

How drugs can increase dopamine



While eating food



While using cocaine

Typically, dopamine increases in response to natural rewards such as food. Whe cocaine is taken, dopamine increases are exaggerated, and communication is de

FIGHT

Ready to fight off real or perceived danger

- Anxiety or panic
- Startled easily
- Can't relax
- Feel restless
- On high-alert
- Digestion problems
- Pinned pupils
- Sweaty palms
- Experience big feelings "flooding" us
- Chronic pain
- Sleeplessness
- Hostility and rage
- Wound up
- Chaotic responses
- Obsessive or compulsive thoughts/behaviours
- Impulsiveness
- Aggression
- Emotional outbursts
- Stuck on "on switch"

FLIGHT

Ready to run away from real or perceived danger

Dysregulation – as you start to peak up towards high-arousal, you might start to feel fidgety, agitated, frustrated, impatient, or angry. You're not completely out of control, but you might be getting close, and it might feel uncomfortable.

WINDOW OF TOLERANCE

Mind-state and body-state are cool, calm, collected and connected

Dysregulation – as you dip down towards low-arousal, you might start to feel vague, spaced out, lose track of time, or feel like you're slowing down. You're not completely shut down, but you might be getting close, and it might feel uncomfortable.

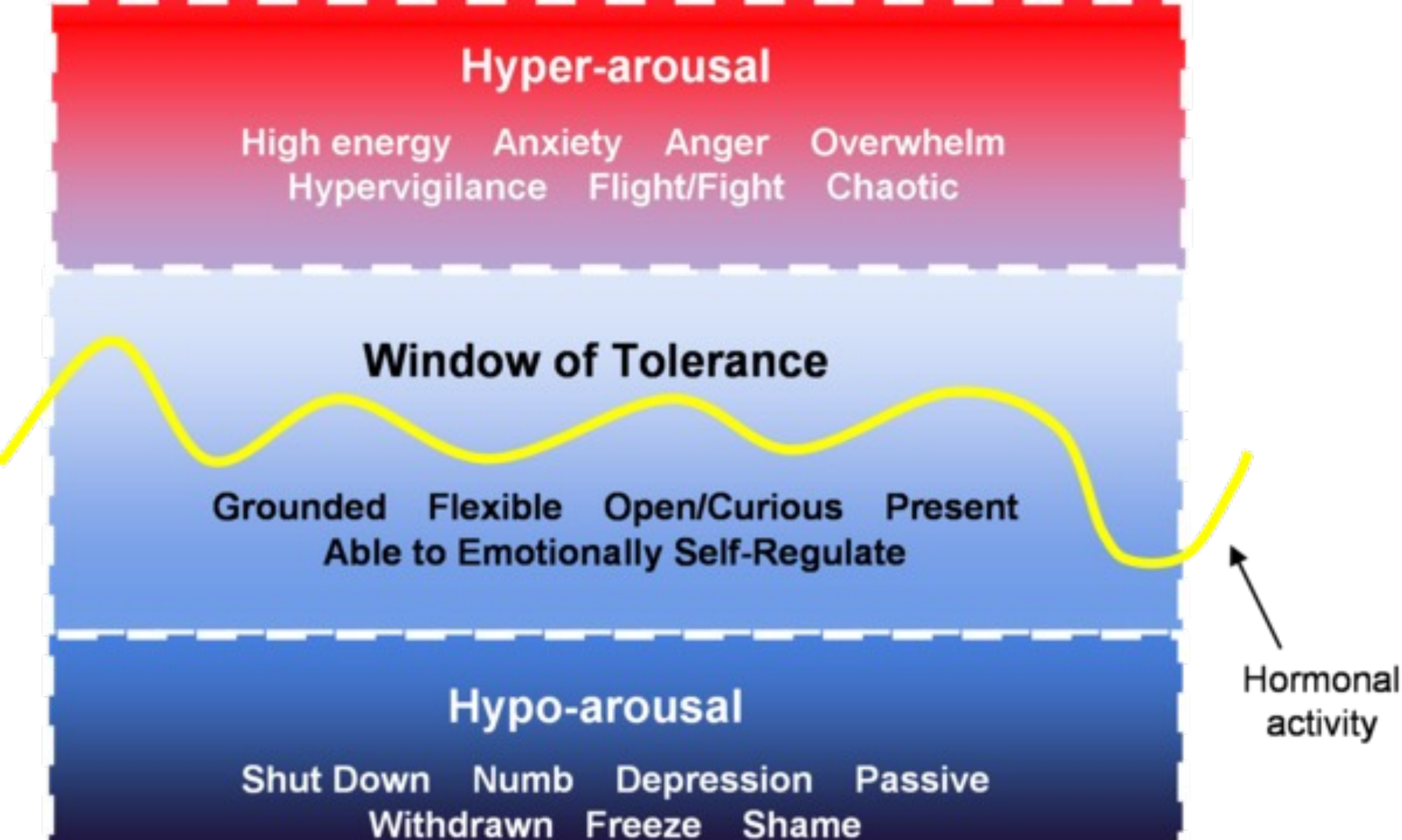
FREEZE

Ready to "play dead" when faced with real or perceived danger

- Depression
- Flat
- Apathy or sadness
- Lethargic
- Wants to sleep a lot
- Feels "shut down"
- Heart beat slow
- Difficulty talking
- Forgetful
- Teary or crying easily
- Feeling of grief
- Empty feeling
- Numb feeling
- Irritable
- Digestion problems
- Overwhelmed
- Confused
- Vague or fuzzy thoughts
- Looks "checked out"
- Unsure what they feel
- Stuck on "off switch"

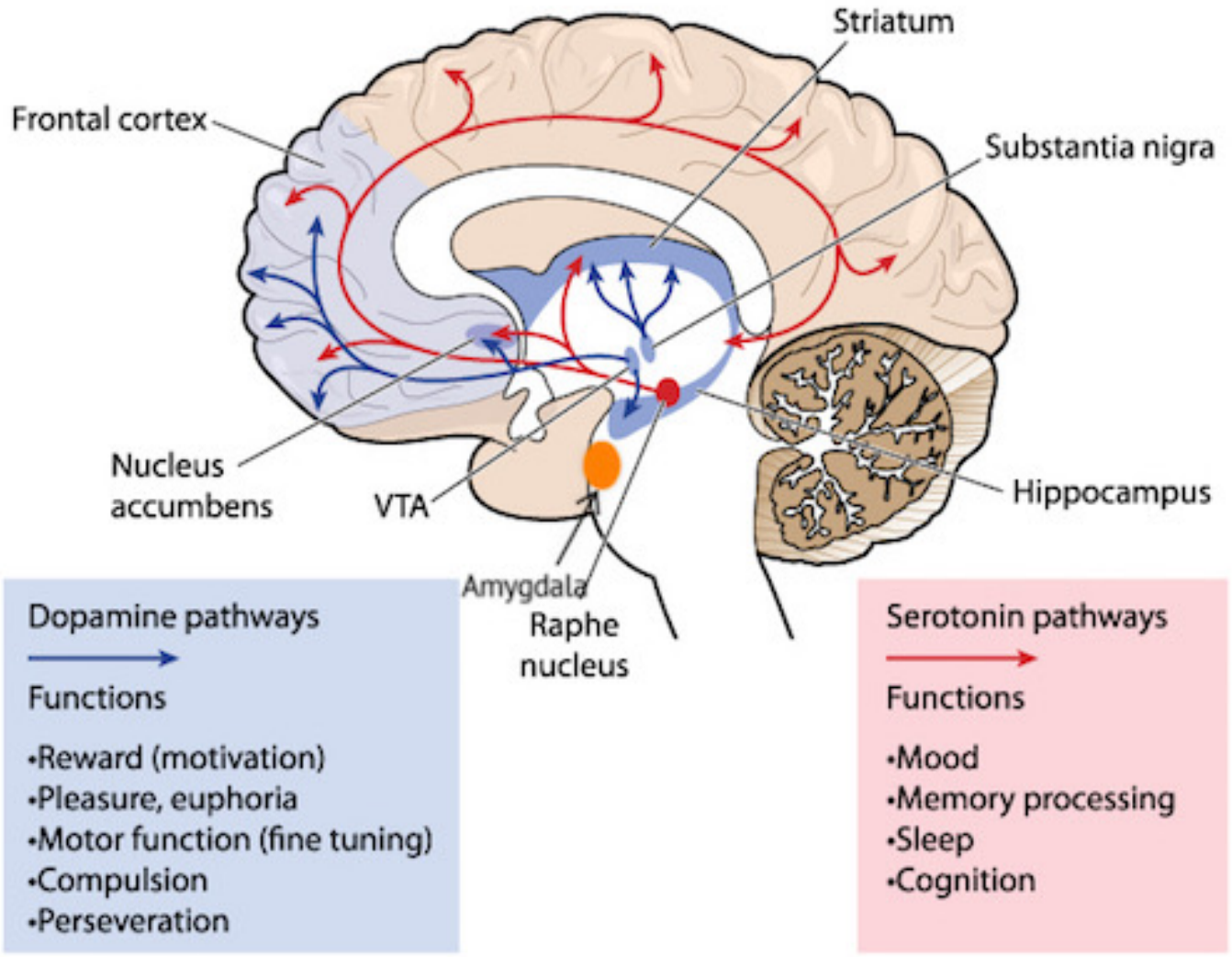
FAWN

Ready to "roll over" and appease when faced with real or perceived danger


Hyper-arousal
High energy Anxiety Anger Overwhelm
Hypervigilance Flight/Fight Chaotic
Window of Tolerance
Grounded Flexible Open/Curious Present
Able to Emotionally Self-Regulate
Hypo-arousal
Shut Down Numb Depression Passive
Withdrawn Freeze Shame
Hormonal activity

INTERACTING SYSTEMS

- Reward system
- Survival brain
- Classical conditioning (behavior)
- Stimulus and response
- Sympathetic nervous system
- Impact of trauma and symptoms of PTSD (fight flight freeze, amygdala)



NEUROBIOLOGY PART I (PODCAST EPISODE)

- Listen to first 35 minutes, I encourage you to finish it on your own!
- Write down 3 things while you listen that you want to discuss in small groups with a partner
- https://podcasts.apple.com/us/podcast/counselor-toolbox-podcast/id1120947649?i=1000471163931
- Pairs breakout rooms

WHAT ARE YOUR TAKE AWAYS FROM TODAY/PODCAST / DISCUSSION?

Keep cameras on and take 3 minutes to write down as many thoughts or points as you can or this padlet page. **Themes, patterns, thoughts, opinions, associations – what do we know? What do you think of?**

https://padlet.com/christinabelknap/qzggwbj juoaj

GO!

COURSE CHECK IN

1. How are we feeling? Guidelines Revisit – how are we doing? Add anything?
2. This is session 3, Case Conceptualization can be turned in as of week 7; but please feel free to take more time → make this thorough (focusing on mastery here); the portfolio has been adjusted made more open and more about artifacts. Less pages etc!