MEDICAL MANAGEMENT OF SEXUAL PREOCCUPATION AND HYPERSEXUAL BEHAVIORS

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WHAT ARE HYPERSEXUAL BEHAVIORS?

SEXUAL PREOCCUPATION/ HYPERSEXUALITY (MANN ET AL 2010)

- Abnormally intense interest in sex that dominates psychological functioning
- Significant predictor of sexual recidivism

OTHER DEFINITIONS OF HYPERSEXUAL BEHAVIORS

- Excessive or disproportionate amount of time consumed by sexual thoughts, urges and behaviors (Kafka)
- Consequences of these behaviors resulting in
  - Emotional distress
  - Employment difficulties
  - Relationship problems (disconnected/isolated)
  - Legal issue
  - Sense of demoralization

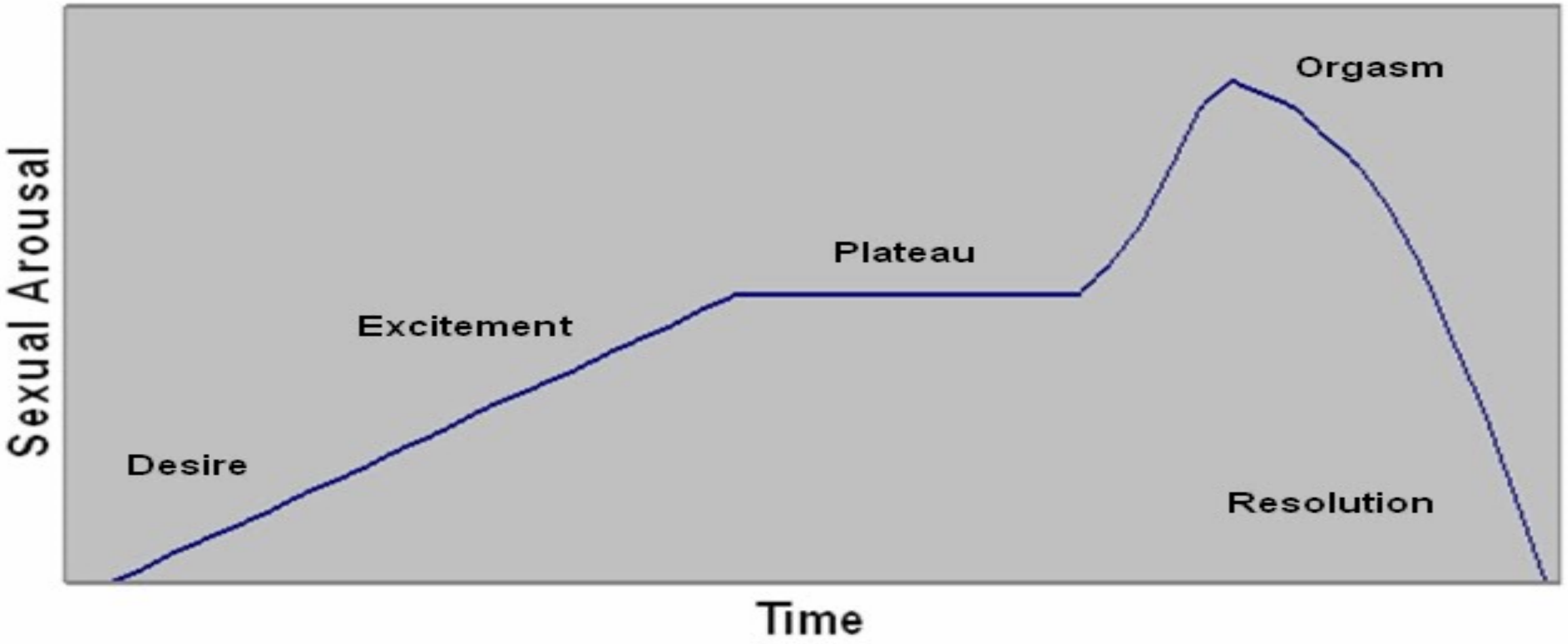
MANIFESTATIONS OF HYPERSEXUAL BEHAVIORS

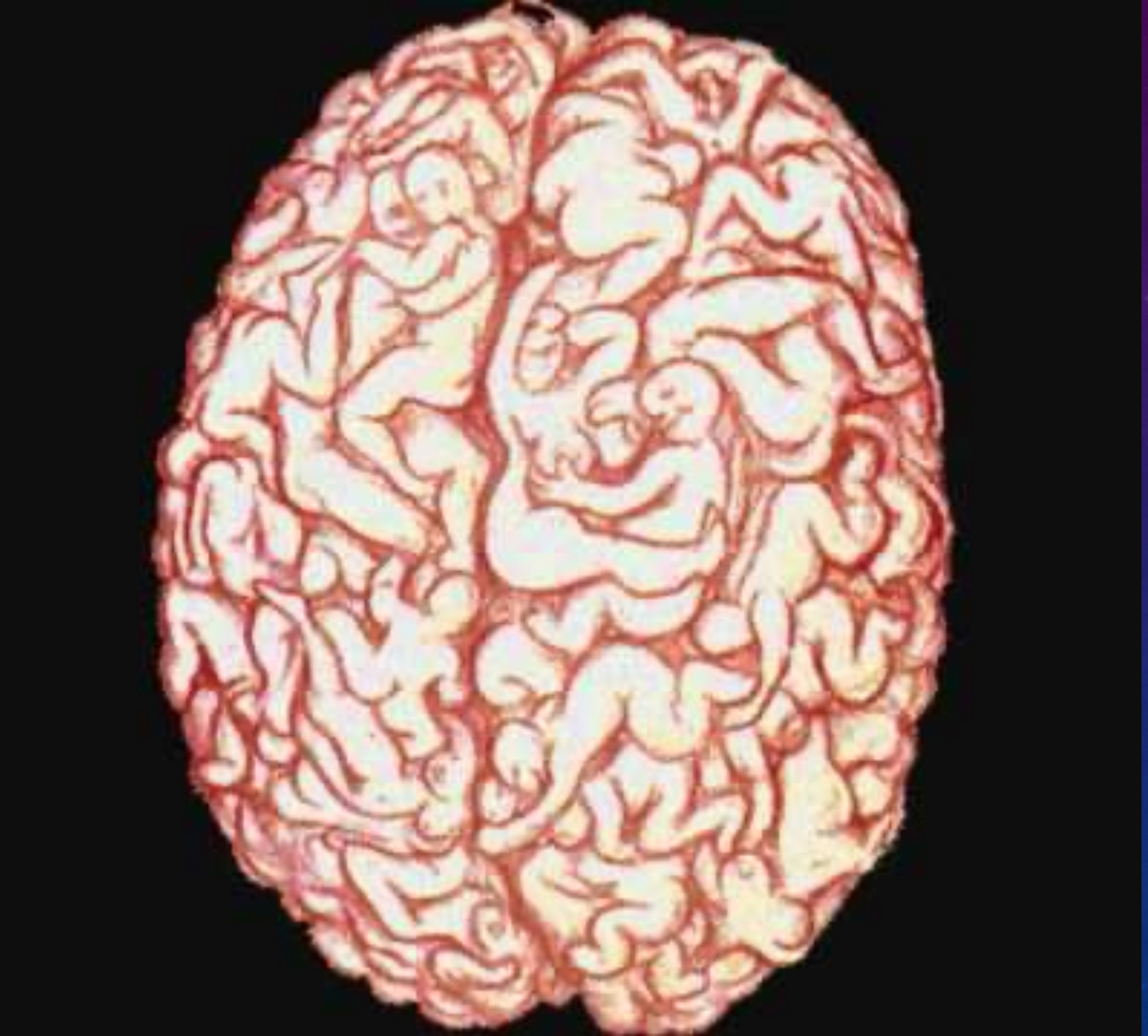
- Non-Paraphilic Behaviors (“Normal”)
  - Adult Pornography Use (Offline and/or Online)
  - Masturbation
  - Sexual Chatting/Strip Clubs/Prostitution
  - Frequent Sexual Activity with Others

- Paraphillias (“Atypical”)
  - Fetishes
  - Exposing, Frottage, Voyeurism
  - Child Pornography

UNDERSTANDING HUMAN SEXUAL PHYSIOLOGY

Sexual Response Cycle





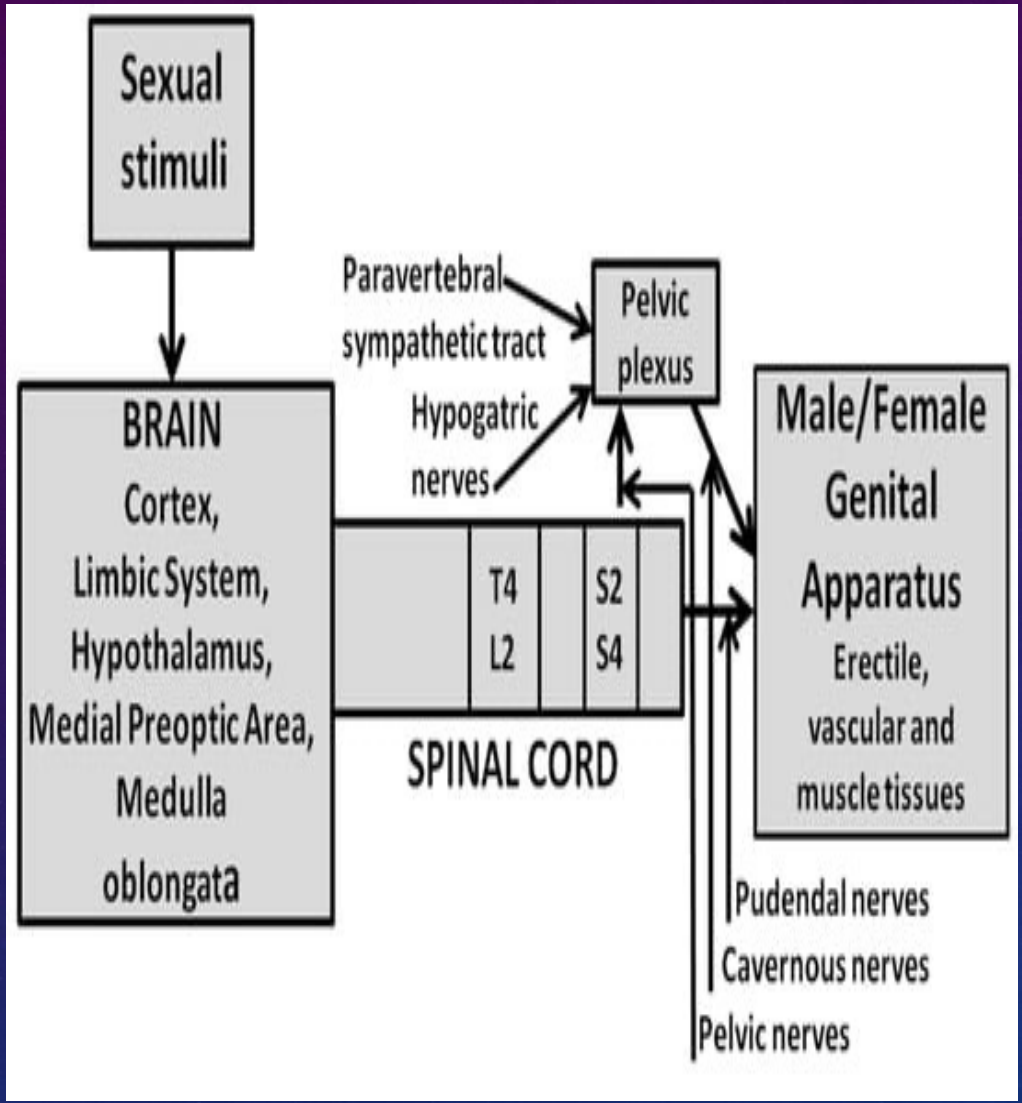
SEXUAL DESIRE

- No objective criteria to measure desire
- Inferred from self-reported sexual thoughts/fantasies / wishes/ experiences

SEXUAL AROUSAL

- Depends on experiential, genetic and neurochemistry
- Subjective arousal -feeling of sexual excitement
- Physiological arousal
  - Genital vasocongestion
  - Dependent on signal input from CNS and PNS
  - Complex interplay between
    - Neurotransmitters
    - Vasoactive agents
    - Endocrine factors (hormones)

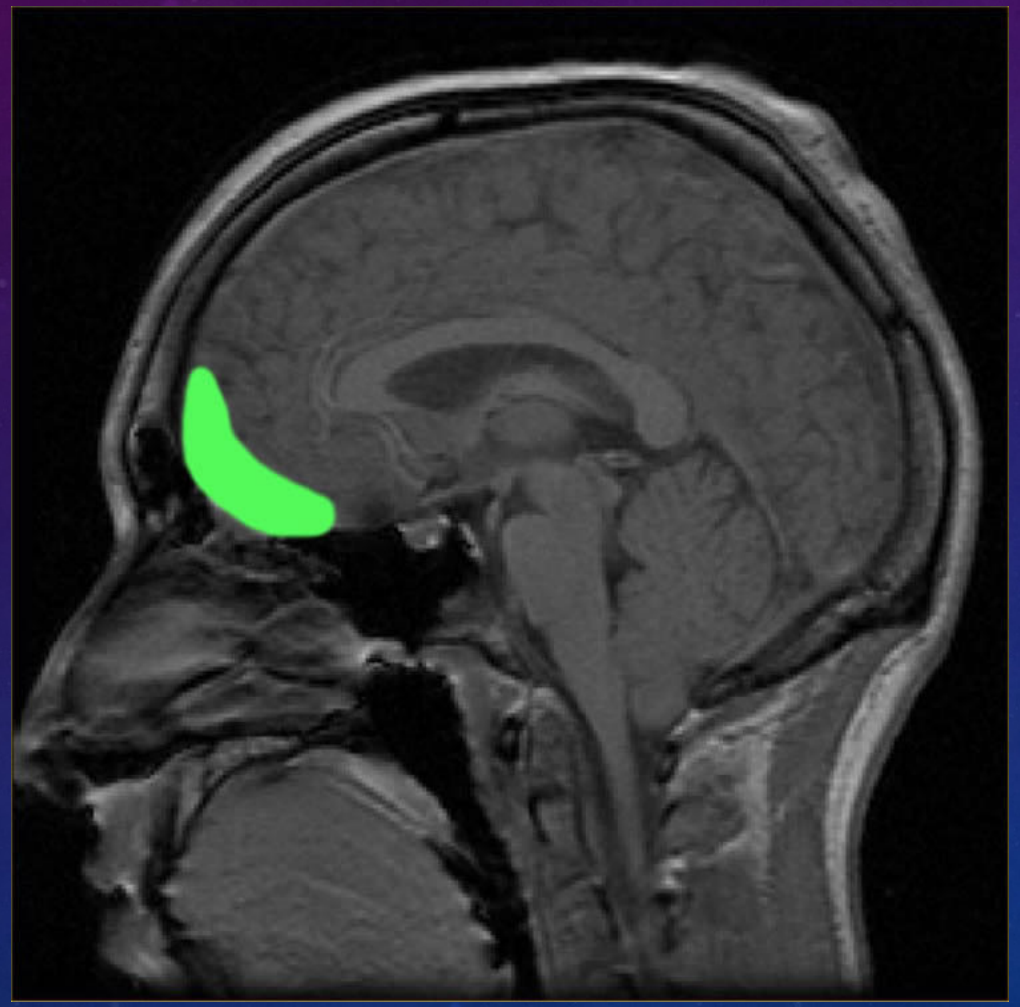
ROLE OF SYMPATHETIC AND PARASYMPATHETIC NERVOUS SYSTEM



- Dynamic balance of sympathetic (SNS) & parasympathetic (PNS)
- SNS- Inhibits erections
- PNS
- Excitatory for erections
- Releases nitric oxide & acetylcholine
- Relaxes smooth muscle of arteries- fill with blood

BRAIN LESIONS ASSOCIATED WITH HYPERSEXUAL BEHAVIORS

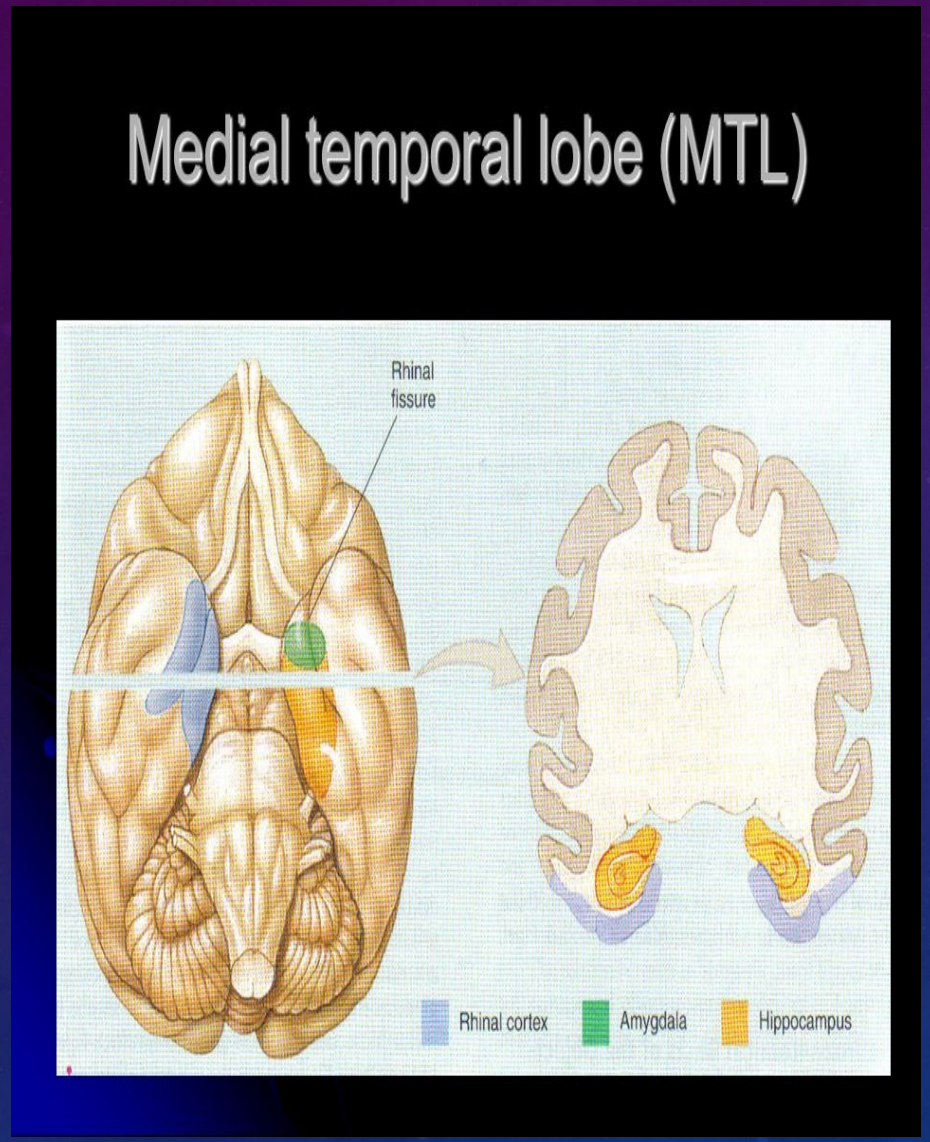
FRONTAL LOBE LESIONS

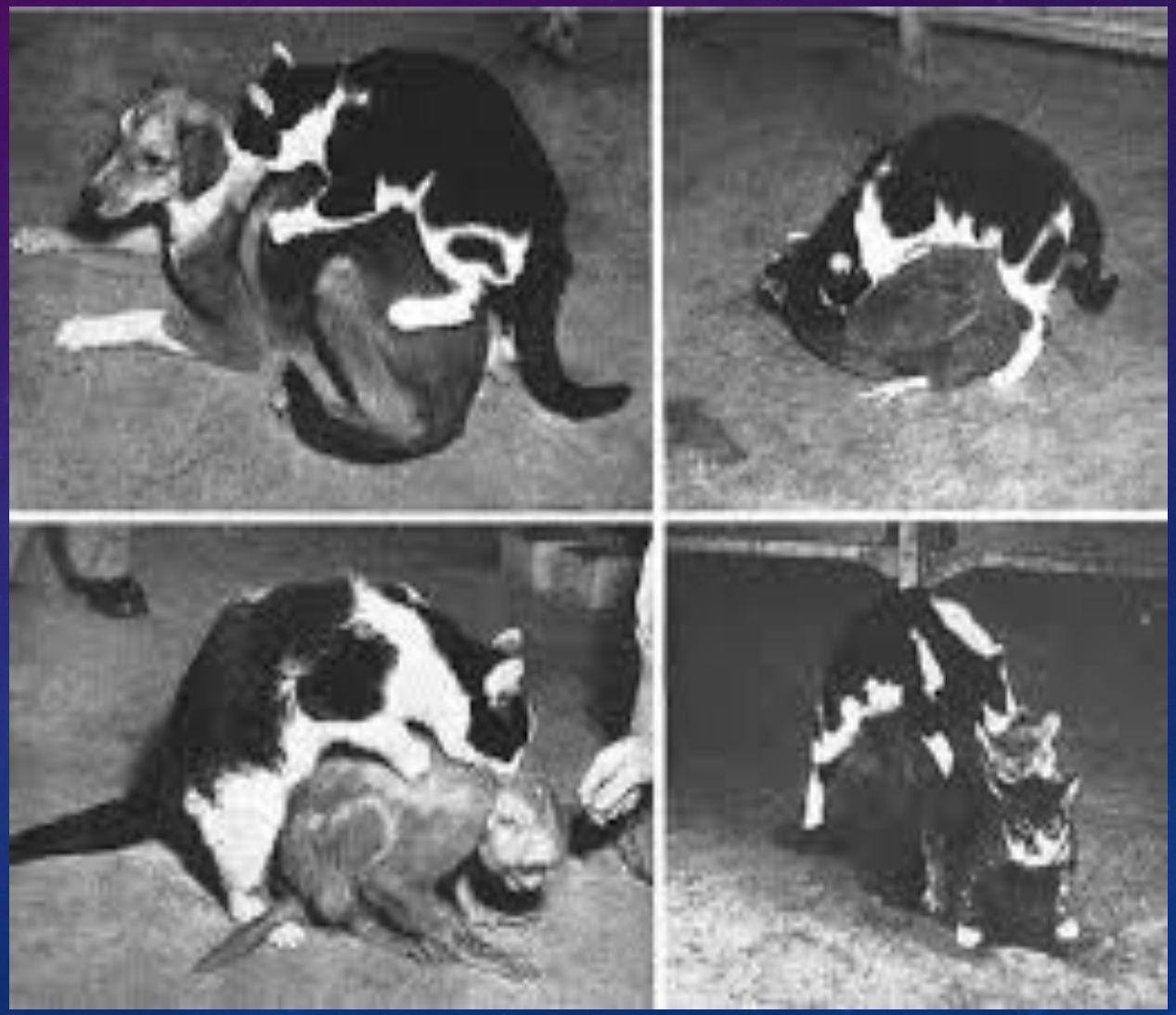


Lesions of the basal frontal lobe is known to be associated with sexual disinhibition and public exhibitionism

Frontal lobe dementia is associated with sexual disinhibition

KLUVER BUCY SYNDROME- BILATERAL TEMPORAL LOBE DYSFUNCTION





HORMONES INVOLVED IN SEX

- Testosterone
- Estradiol
- Oxytocin
- Prolactin

NEUROTRANSMITTERS

- Dopamine
- Serotonin
- Noradrenaline
- Opioid

WHAT DO WE KNOW ABOUT TESTOSTERONE ?

TESTOSTERONE

(JORDAN ET AL 2011)

Plays a crucial role in hormonal regulation of male sexuality

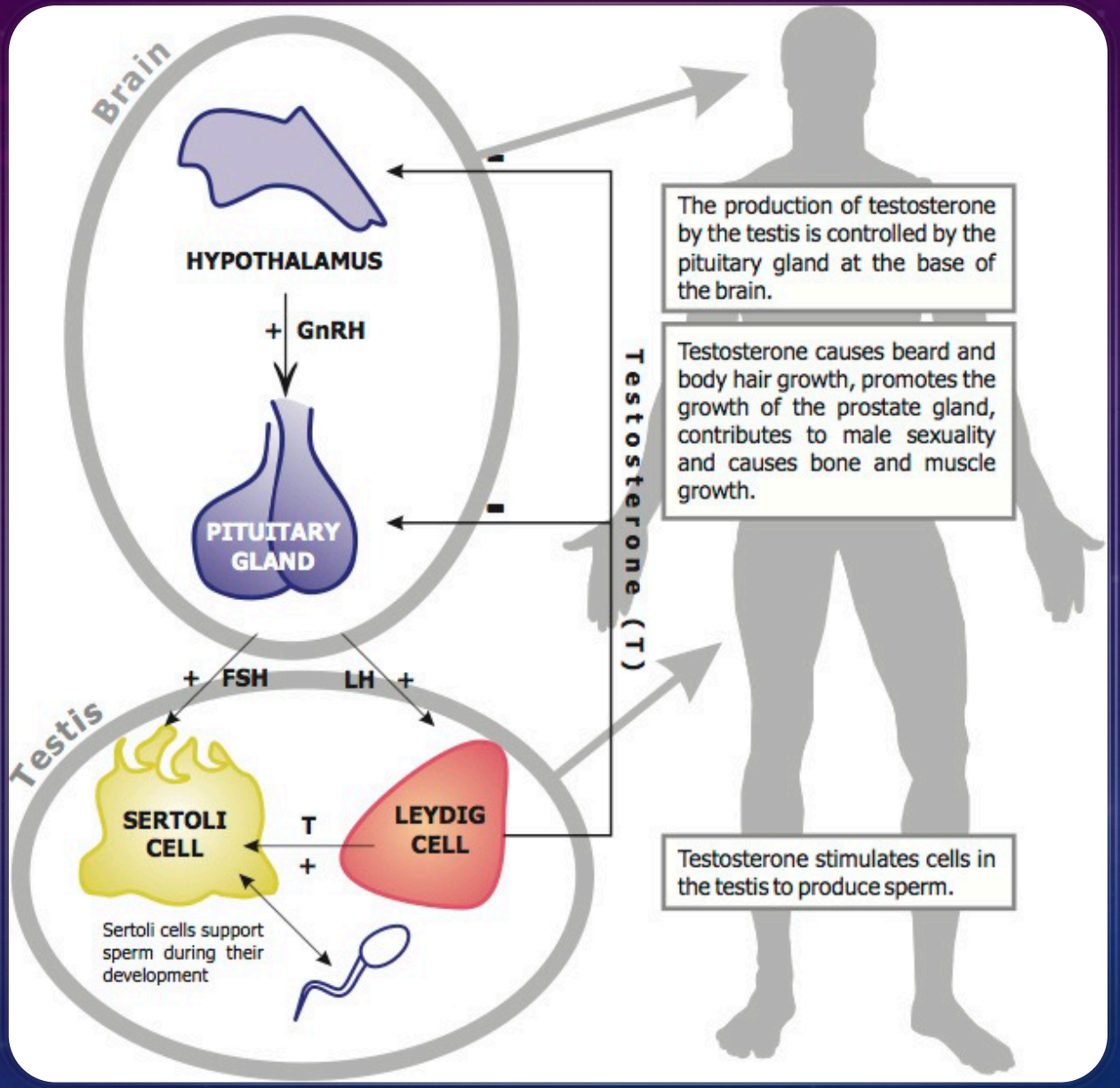
Influences sexual thoughts, desire,motivation, sexual arousal/ erection and ejaculation

Increased sexual activity increases testosterone

TESTOSTERONE

- Modulates cognitive and emotional functions
- Modulates various neurotransmitter systems
  - Dopaminergic
  - Serotoninergic
  - Cholinergic
- Affect functioning of the cardiovascular, immune and musculoskeletal system

TESTOSTERONE PRODUCTION



- **Secretion by Leydig cells/ testes**
  - **90%**
- **Synthesized from cholesterol**
  - **10%**
- **Metabolized to Dihydrotestosterone (DHT)**
- **Only 2% is free testosterone**

TESTOSTERONE (T) LEVEL (JORDAN 2011)

- During puberty T level increases
- T levels decrease in older age
- Physiological range of T level- 3-12ng/ml (300- 1200 ng/dl)
- Much less T level is sufficient to maintain normal sexual function

TESTOSTERONE (T) LEVEL (JORDAN 2011)

- Salient sexual stimuli/ erotic movies- increase T levels
- Sexual activity/ masturbation –increase T levels
- Hypersexual behavior is not associated with higher T levels
- With testosterone withdrawal (within 3-4 weeks) reduction in level of sexual interest/ desire is noted.

OTHER HORMONES AND SEX

PROLACTIN AND SEX

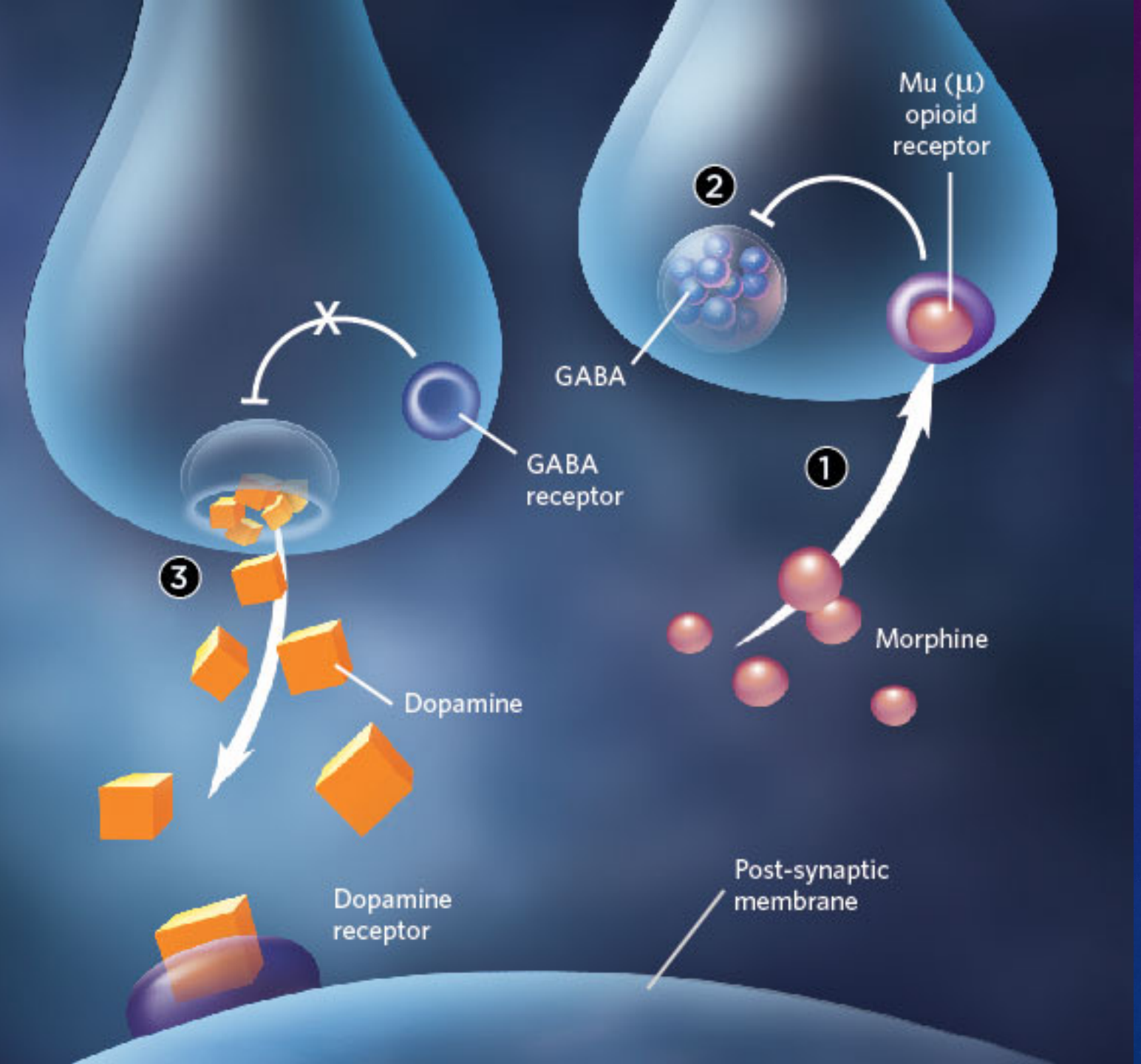
- Increased prolactin levels is associated with decrease in sexual interest
- Use of dopamine agonist (Bromocriptine)- decrease prolactin- restore sexual interest
- After orgasm, prolactin levels increase
  - Role in post-orgasmic refractory period

OXYTOCIN

- Role for Oxytocin in orgasm proposed
- Post- orgasmic increase in Oxytocin noted
- Some suggestion that Oxytocin is linked to sexual satiety (satisfaction)

DOPAMINE AND SEX

- Dopamine agonists (Levodopa) increase sexual desire and sexual functioning (used to treat Erectile Dysfunction)
- Cocaine increases dopamine in synapses
  - Increases sexual pleasure in low doses
  - Chronic use decreases sexual desire
  - In high doses, due to vasoconstriction, decreases erection



DOPAMINE AND ENDOGENOUS OPIOIDS

- Repeated orgasm-increased opioids
- Opioids use the dopamine reward system
- Opioid antagonist-Naltrexone can prevent this response

SEROTONIN AND SEXUAL FUNCTION

Serotonin decreases sexual desire

Serotonin impairs ejaculation

Increase latency to ejaculation

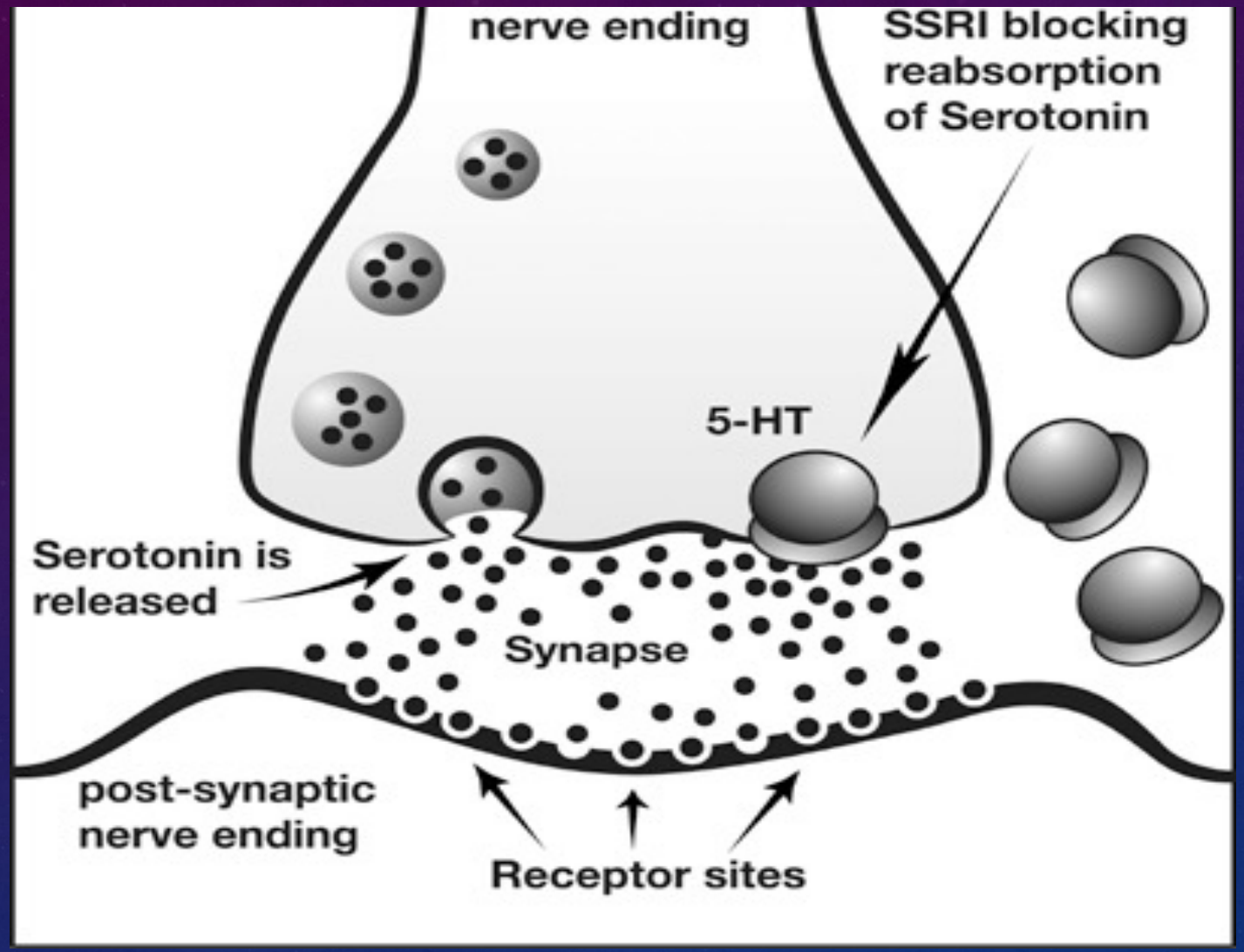
Decreases obsessive thoughts

Serotonin has an inhibitory effect on sexual activity

MEDICATIONS FOR MANAGEMENT OF HYPERSEXUALITY

SELECTIVE SEROTONINERGIC REUPTAKE INHIBITORS (SSRIS)

FLUOXETINE (PROZAC)
PAROXETINE (PAXIL)
SERTRALINE (ZOLOFT)
CITALOPRAM (CELEXA)
ESCITALOPRAM (LEXOPRO)
FLUVOXAMINE (LUVOX)



MECHANISM OF ACTION

- Increase serotonin in the synapses

USE OF SSRIS IN TREATING HYPERSEXUALITY

- Several open label studies have shown to decrease sexual preoccupation , sexual compulsion and sexual urges with SSRI
- Mechanism of action
  - Decrease in sexual obsessive thoughts
  - Increased latency to ejaculation
  - Disruption of the sexual pleasure response
  - Decreased impulsivity

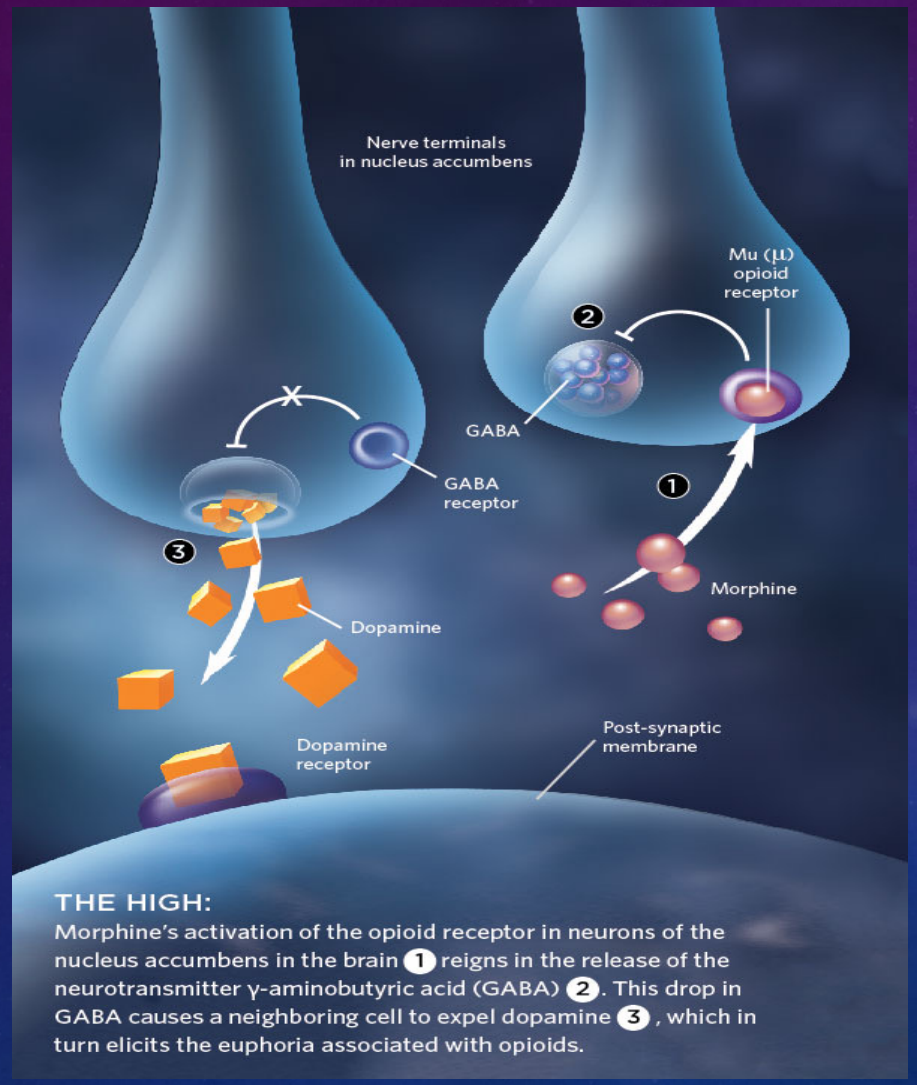
SSRI

Fluoxetine up to 80 mgs
Paroxetine up to 60 mgs
Sertraline up to 200 mgs
Citalopram up to 40 mgs
Escitalopram up to 50 mgs

SSRI

- Most physicians have extensive experience prescribing SSRI
- Well tolerated
- Also treats associated general anxiety symptoms, social anxiety sx, depressive sx
- Ask patient to maintain a sexual fantasy/behavior log before and after
- Adjust dosage for optimal benefit (need higher doses/ OCD level treatment doses)
- If one SSRI does not work, switch to another one
- Be patient- takes at least 3-4 weeks to see any response
- Can be used with Naltrexone and other medications

OPIOID ANTAGONIST- NALTREXONE



- Repeated orgasm- increased opioids
- Opioids use the dopamine reward system
- Opioid antagonist- Naltrexone can prevent this response
- Dosage 50mg to 100mg daily
- Treats co-occurring substance use disorders

ROLE OF ANTIPSYCHOTIC MEDICATIONS IN DECREASING SEXUAL DRIVE

- Dopamine blocking medications
  - Haloperidol
  - Risperidone
  - Fluphenazine
  - Paliperidone

- Avoid dopamine increasing medications
  - Aripiprazole
  - Bupropion

ANTI-ANDROGEN MEDICATIONS

- Medications
  - Spironolactone
  - Medroxyprogesterone acetate (MPA)- Depot Provera
  - Gonadotropin releasing hormone (GnRH) agonists
    - Leuprolide
    - Degarelix

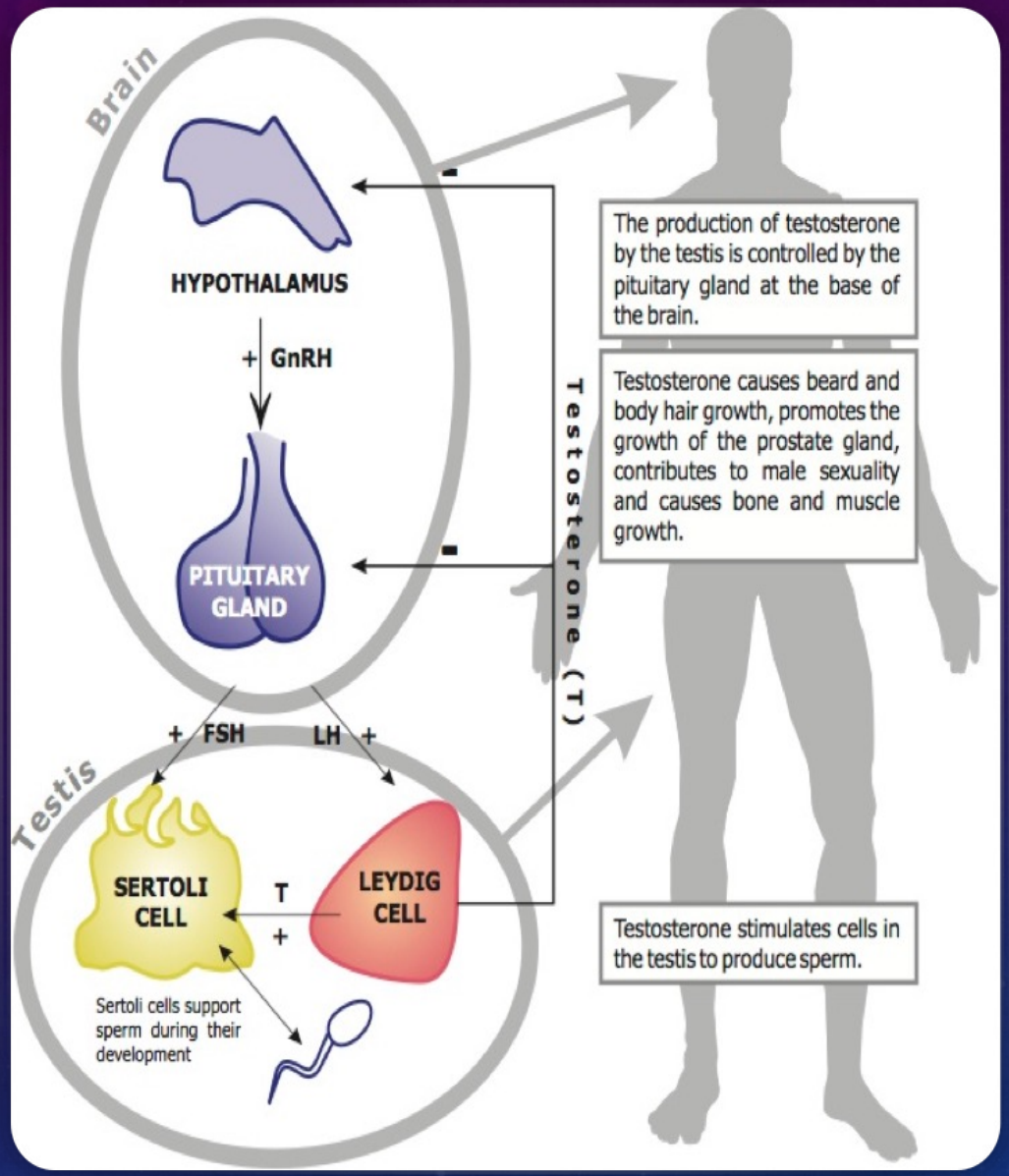
SPIRONOLACTONE

- Blocks the biosynthesis of testosterone
  - Blocks the 17-hydroxylase step in cholesterol to testosterone conversion
- Suppresses testosterone production by inhibiting the HPA axis
- Blocks the effect of testosterone at the androgen receptors
- Dosage -100 to 200 mgs per day gradually increased until testosterone suppression
- Monitor potassium levels

MEDROXYPROGESTERONE ACETATE (MPA)

- Strong progesterone analogue
- Inhibits GnRH secretion in hypothalamus
- Decreases T levels within 2 weeks
- Dosage to treat hypersexuality variable
  - Average dose 300mg/day oral (100 mgs to 400 mgs/day in some studies)
  - 100mg to 600mg IM weekly to monthly
- Case studies of effective control of hypersexual behaviors in patients with dementia

LEUPROLIDE- GONADOTROPIN RELEASING HORMONE AGONIST



- Initially increased Testosterone level- 1-2 weeks after starting treatment
- Antiandrogen med prescribed during the 1-2 weeks- Flutamide
- With continuous treatment- downregulates the GnRH receptors in the pituitary

STARTING LEUPROLIDE

- Check Testosterone level, FSH level, LH Level, monthly until suppressed, then Q 6 months
- Check Complete Blood Count and Q 6 months
- Check blood urea and creatinine level and every 6 months
- EKG- once a year
- Bone density scan – once a year
- Give test dose of 1mg leuprolide subcutaneously for allergic reaction

DOSAGE OF LEUPROLIDE

- Lupron and Eligard- Different brand names of leuprolide acetate (Lupron- IM depot; Eligard- SC)
- Dosage:
  - 7.5 mg IM/ SC monthly
  - 22.5 mg IM/ SC given Q 3months
  - 30 mg IM/SC given Q 4 months
  - 45 mg IM/SC given Q 6 months
- Takes about 3 months to get the T level to castration level
- Castration T level- 20 to 50 ng/ dl (0.2- 0.5 ng/ ml)

EFFECTS ON SEX AFTER LEUPROLIDE

- Self-reported
  - Decrease in sexual thoughts/ fantasies
  - Decrease in sexual motivation
  - Some describe being asexual

DEGARELIX – GNRH ANTAGONIST

Effect of Gonadotropin-Releasing Hormone Antagonist on Risk of Committing Child Sexual Abuse in Men With Pedophilic Disorder A Randomized Clinical Trial –JAMA 2020

Swedish study

52 men – 26 received Degarelix; 26 placebo

Follow-up in 2 weeks and 10 weeks

Testosterone level decreased to castration level in 2 weeks

No initial testosterone level increase

Pedophilic interest and sexual preoccupation domains decreased

MEDICATION PLAN

- Stop substances/medications that increase dopamine
- Start with a SSRI / titrate dose / switch
- Add Naltrexone
- Trial of Spironolactone
- Try dopamine antagonist, if other psychiatric conditions warranting anti psychotic medications are present
- MPA may be an option for dementia related sexual disinhibition
- For high risk highly sexually preoccupied individual, discuss the pros and cons of being on Leuprolide/ Degarelix

RIGHT TIME FOR MEDS

- Has capacity to weigh risk and benefits
- Able to give informed consent
- Work on alternative healthy coping strategies if using sex as coping
- Able to understand and accept the possibility of becoming hyposexual or asexual (anti-androgen meds)
- Accept the possibility that they may need to take it for “a very long time”

WHEN CAN THEY COME OFF MEDICATIONS?

- A joint decision between the doctor and the patient
- A gradual taper preferable with assessment of sexual thoughts and behaviors
- Ability to develop significant lifestyle changes and management skills (prosocial skills) helps to stay on path even when weaned off medications
- Enhancing and practicing mindfulness skills
- Ability to have a trusting relationship with the treatment team

THANK YOU!

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