

# Managing Sexual Dysfunction in Cancer Patients

Thursday February 21, 2019  
Oncology CME Webcast Series

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# Faculty/Presenter Disclosure

**Relationships with commercial interests in the last 20 years**

**Speaker: Stacy Elliott, MD**

**- Holder of Stocks/Shares**

**none**

**– Grants/Research Support :**

**CIHR, Neurotrauma funds, Pfizer ( female SCI)**

**– Speakers Bureau/Honoraria/Consulting Fees:**

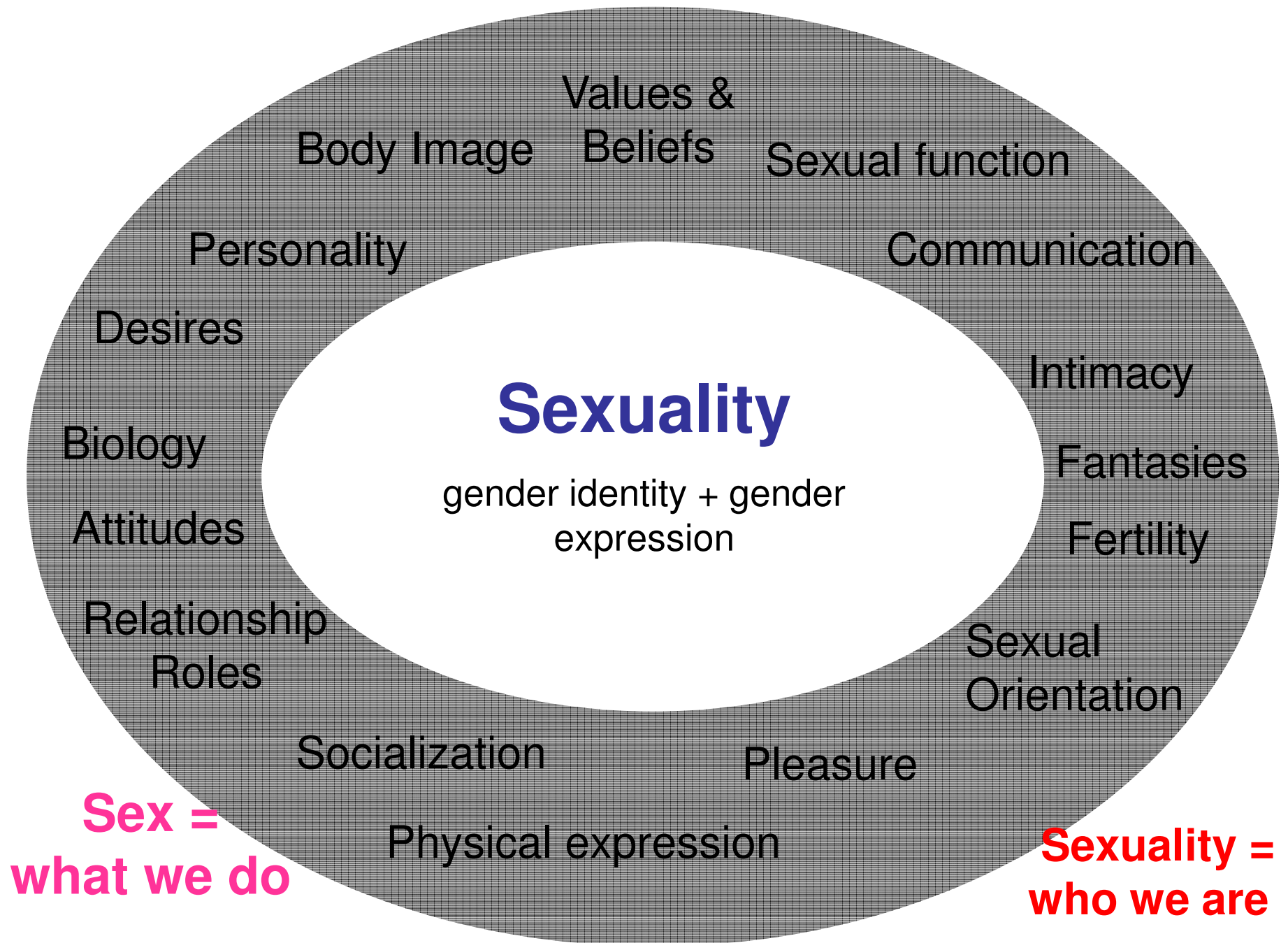
**Mylan ( testosterone)**

**– Other:**

**Employee of Vancouver Hospital and Faculty at the University of British Columbia**

# Mitigating Potential Bias

- All the recommendations involving clinical medicine are based on evidence from well-designed clinical trials published in peer-reviewed journals.
- The faculty of this course and UBC CPD has in no way influenced the information in this talk.
- 
- I have received no direct payment from pharmaceutical companies for this talk.
- All products available in Canada for sexual dysfunction will be discussed



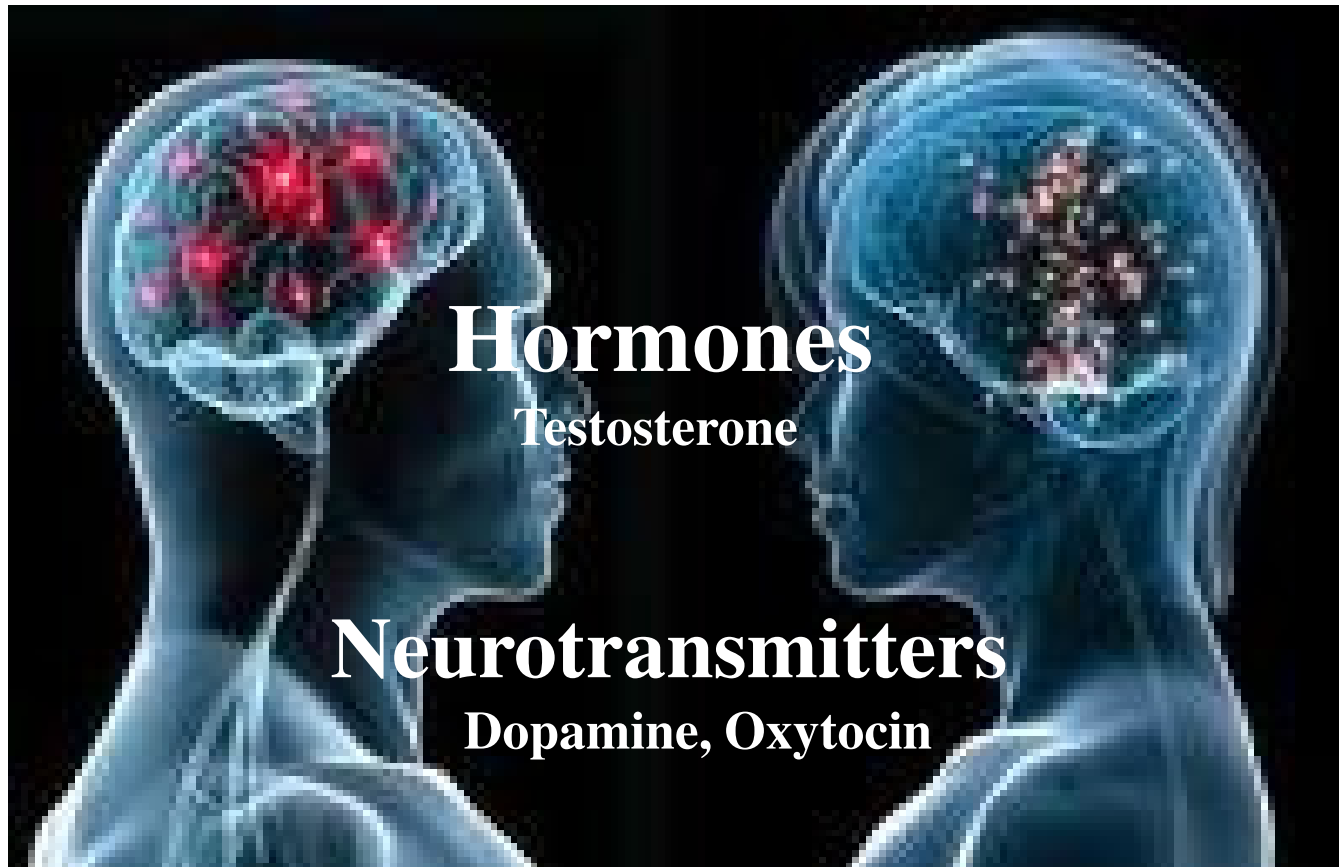
# Objectives

- Describe the components of sexual function
- Summarize a Sexual Rehabilitation Framework (SRF) to manage the complexity of changes
- Identify appropriate options for management

# Objectives

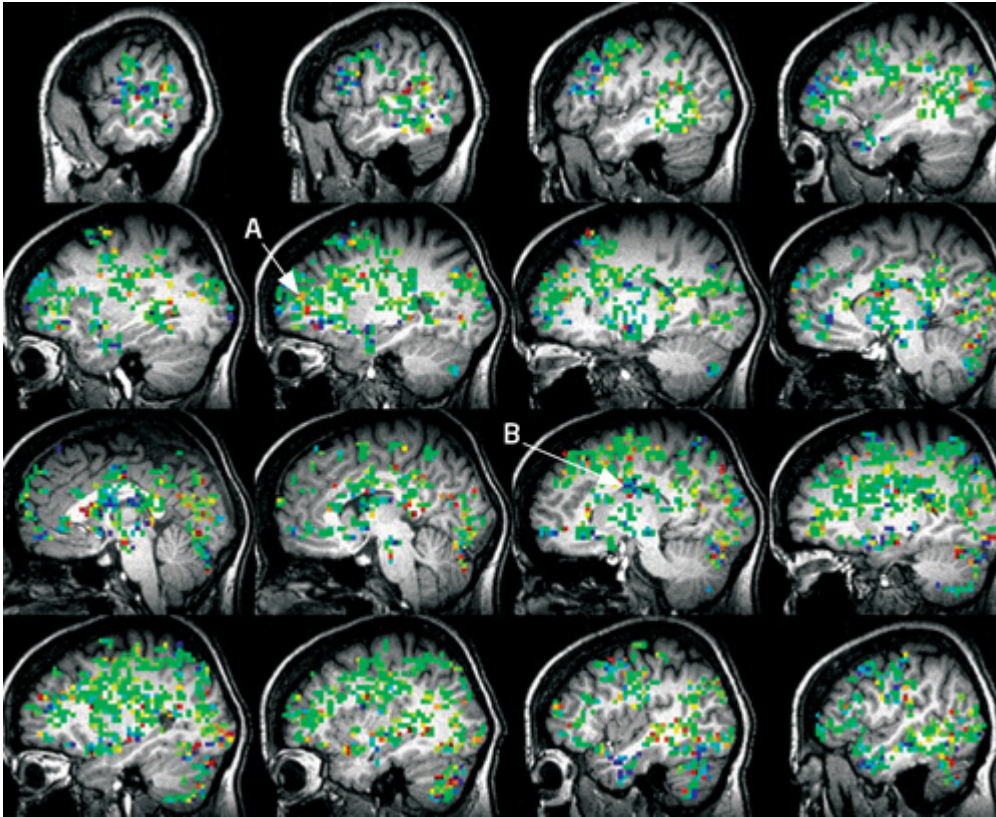
- Describe the components of sexual function

# Arousal = Brain activation



# Brain Sex

**Medial Preoptic Area (MPOA) of hypothalamus = pivotal position**



**MPOA projects to the**

**-Hypothalamic  
paraventricular  
nucleus (HPN)**

**--midbrain ( ventral  
tegmental area)**

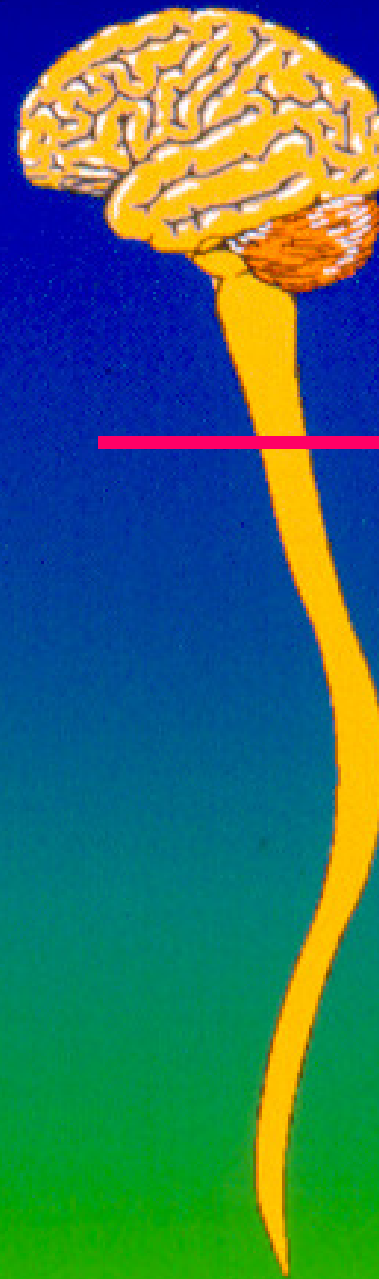
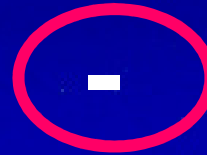
**-brainstem nuclei ( raphe  
and gigantocellular)**

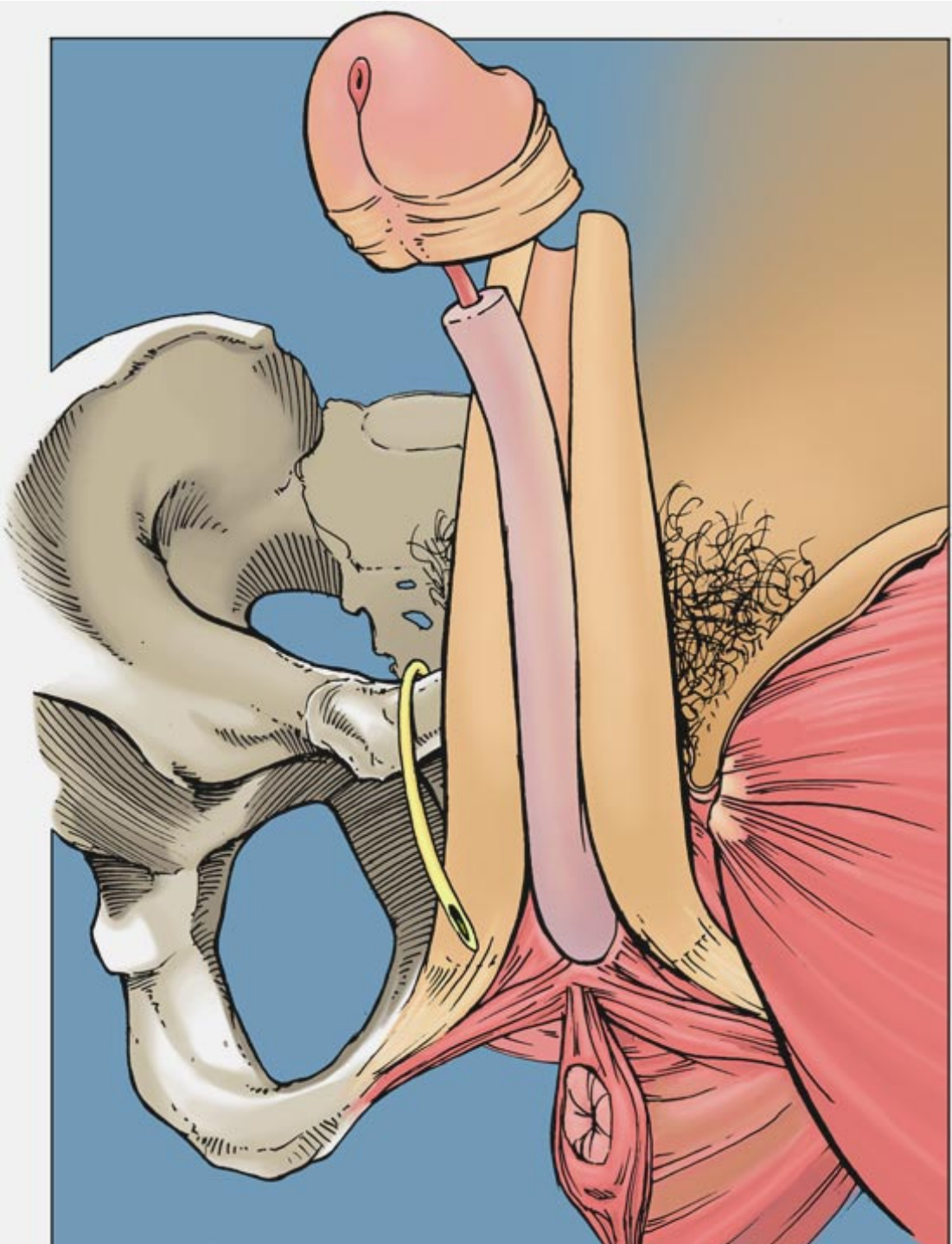
**These then, project to the  
autonomic and somatic spinal  
centers commanding the  
peripheral nerves**

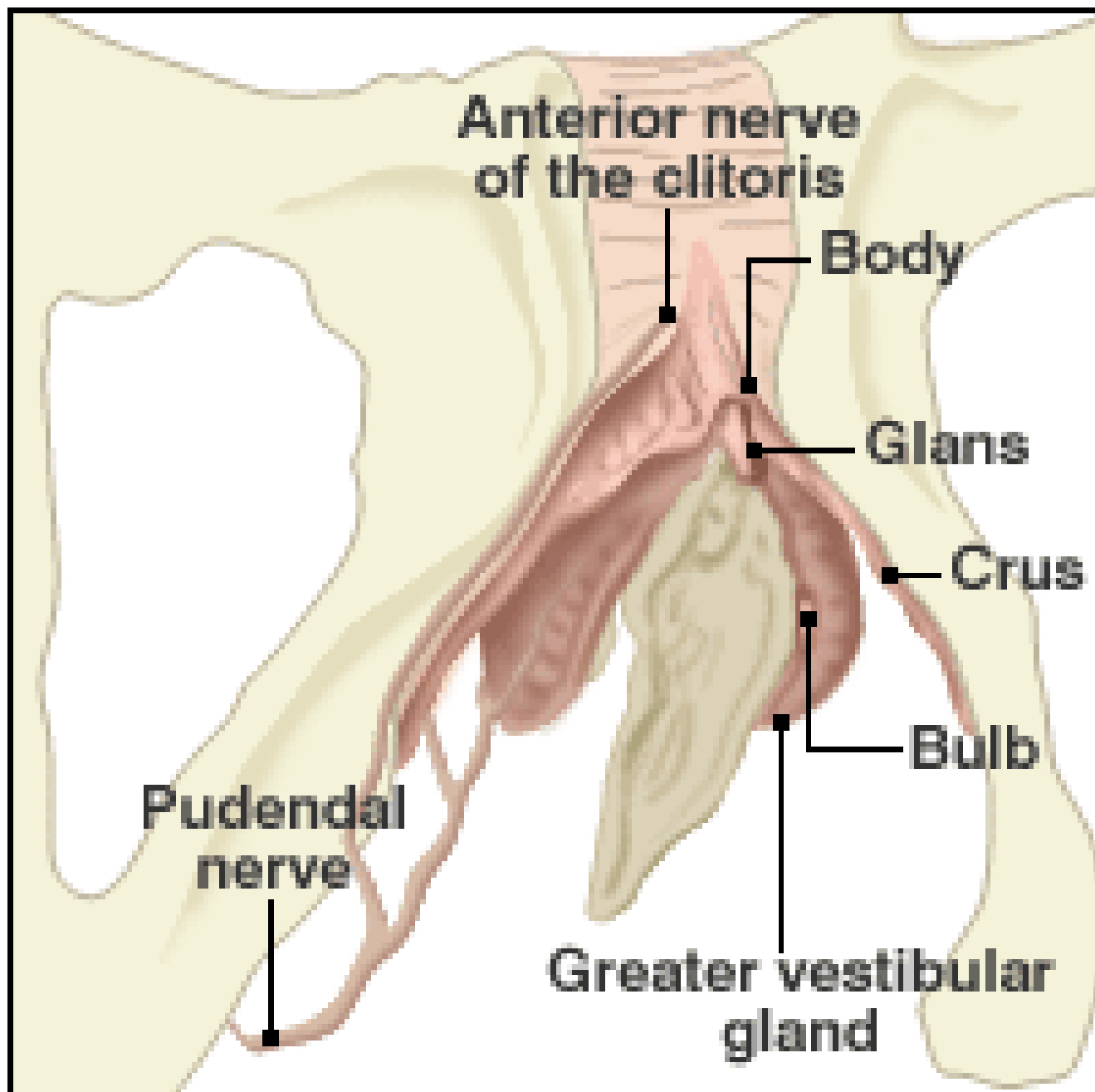


**Psychological  
Control**

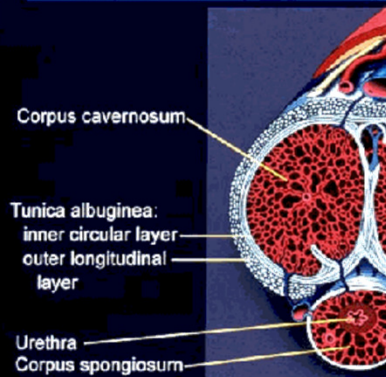
**Physical  
Stimulus**



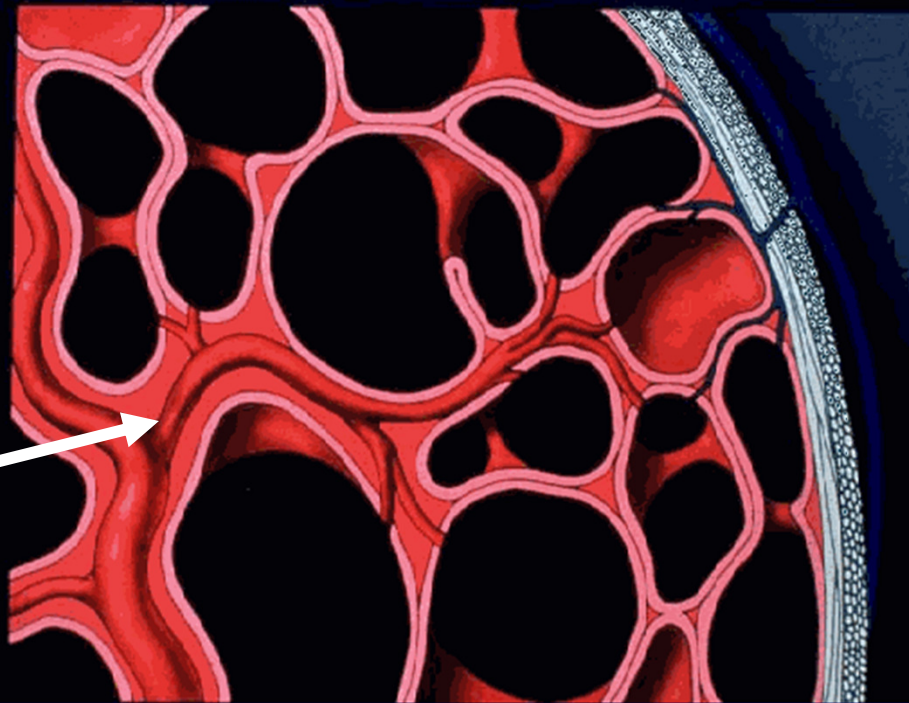




### Cross Section



### Compressed Venules Against the Tunica Albuginea With Resultant Venous Outflow Blockade



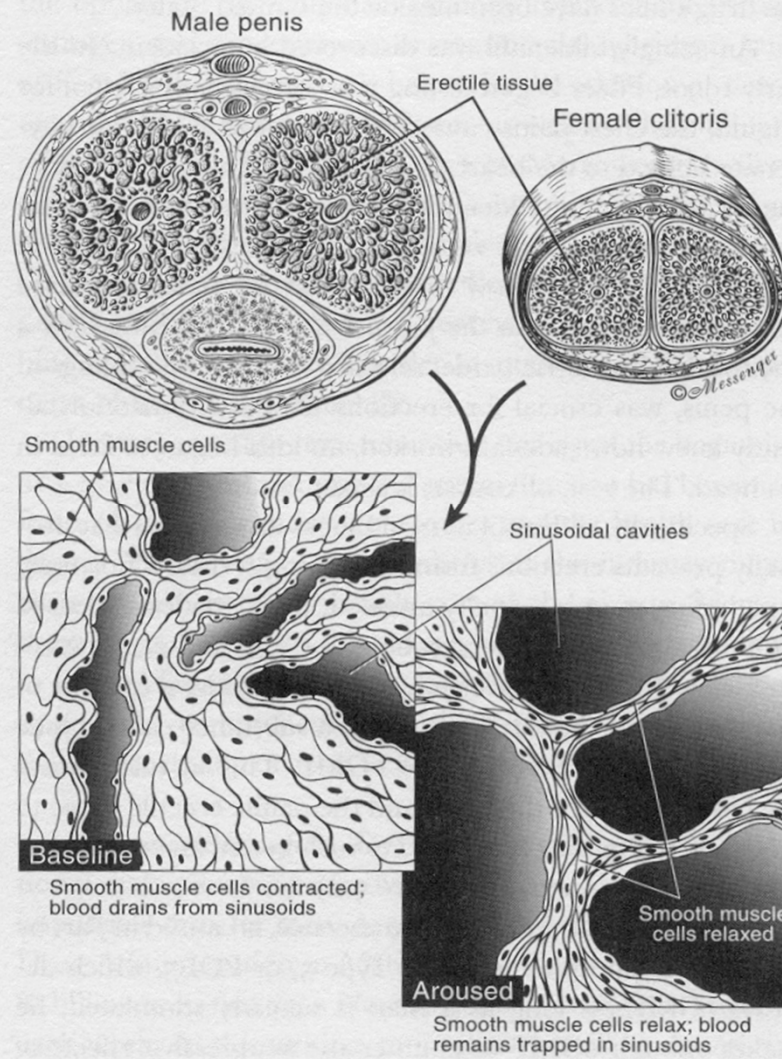
cGMP

Tonic smooth  
muscle  
contraction

Smooth muscle relaxation



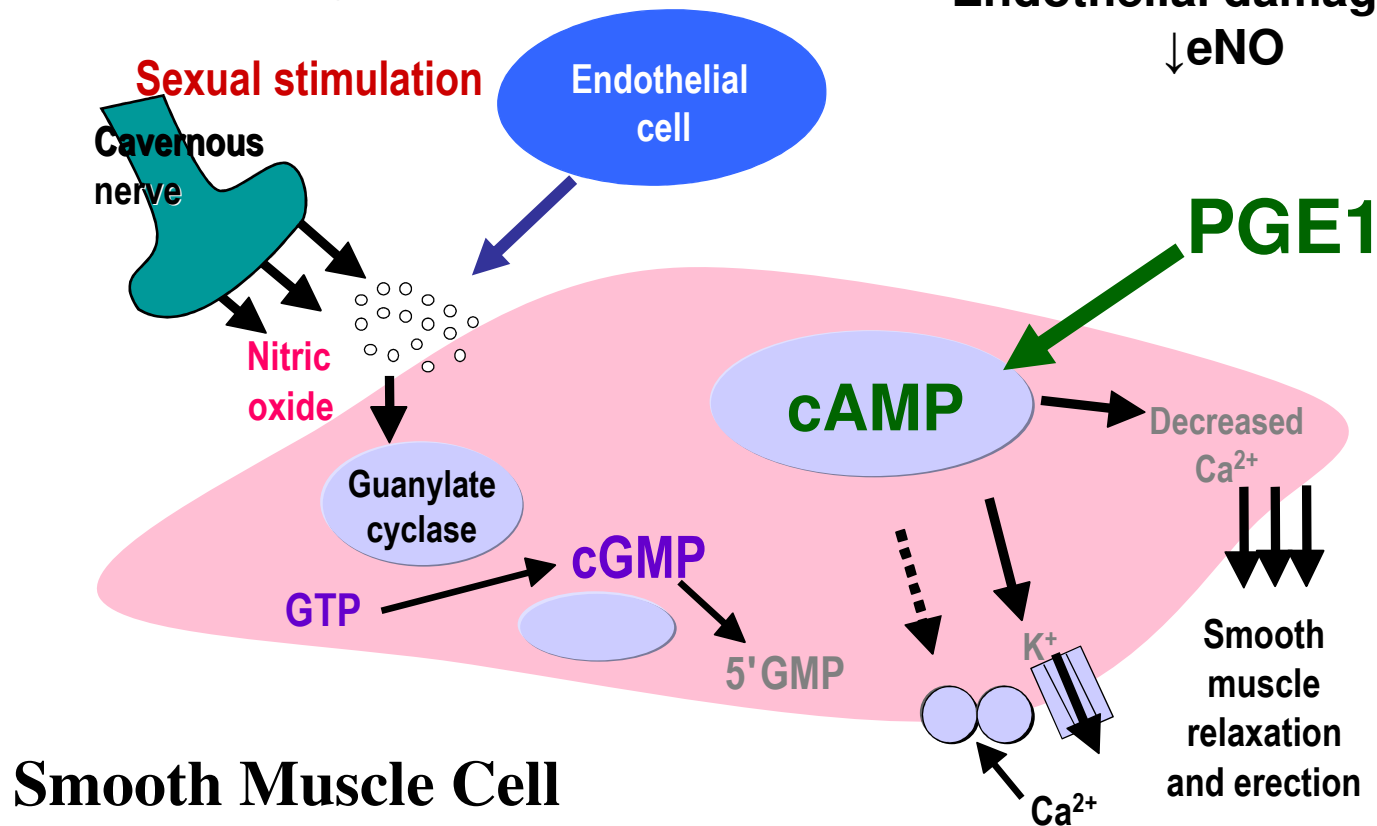
Figure 5.1 Male and female erectile tissue



# Penile Erection: NO-cGMP Mechanism and PDE5

Sexual arousal =  $\uparrow$ nNO

Endothelial damage will  
 $\downarrow$ eNO



# Ejaculation and Orgasm

## **Ejaculation:**

- the process of sperm transport from the testes to the urethral meatus ( neurology defined)

## **Orgasm:**

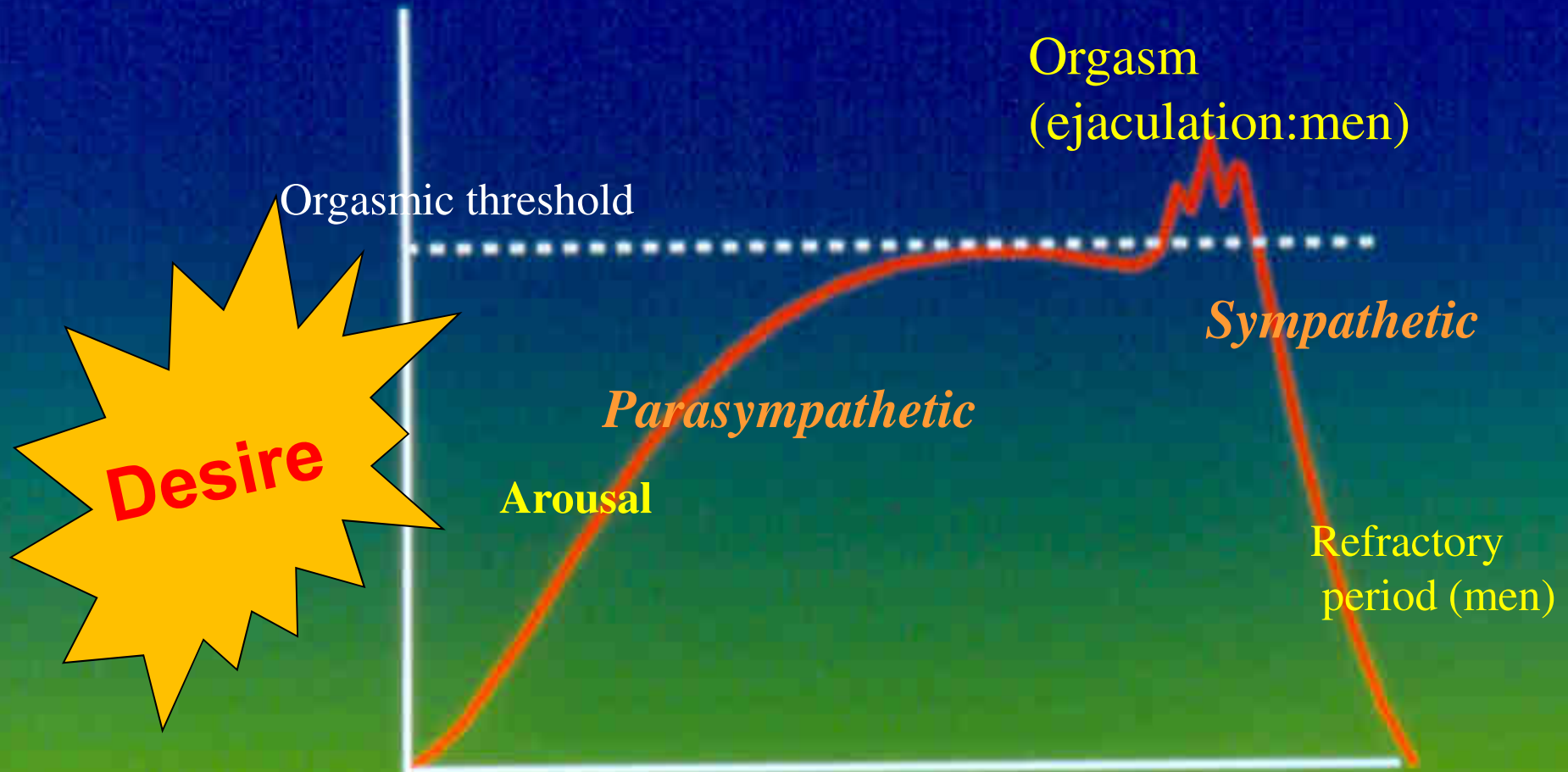
- the combination of a local, learned reflex and/or the brain's interpretation of it ( neurology unclear)
- usually accompanies ejaculation

# Orgasm in both sexes

- We don't know the neurology
- Women who have experienced reinforcement of their orgasmic reflex have an easier time regaining
- Loss of sensation, spasm, pain all interfere with signalling
- Lack of sexual drive or impaired genital arousal makes hitting the threshold very difficult
- Reduced testosterone increased threshold



# Sex Response Cycle

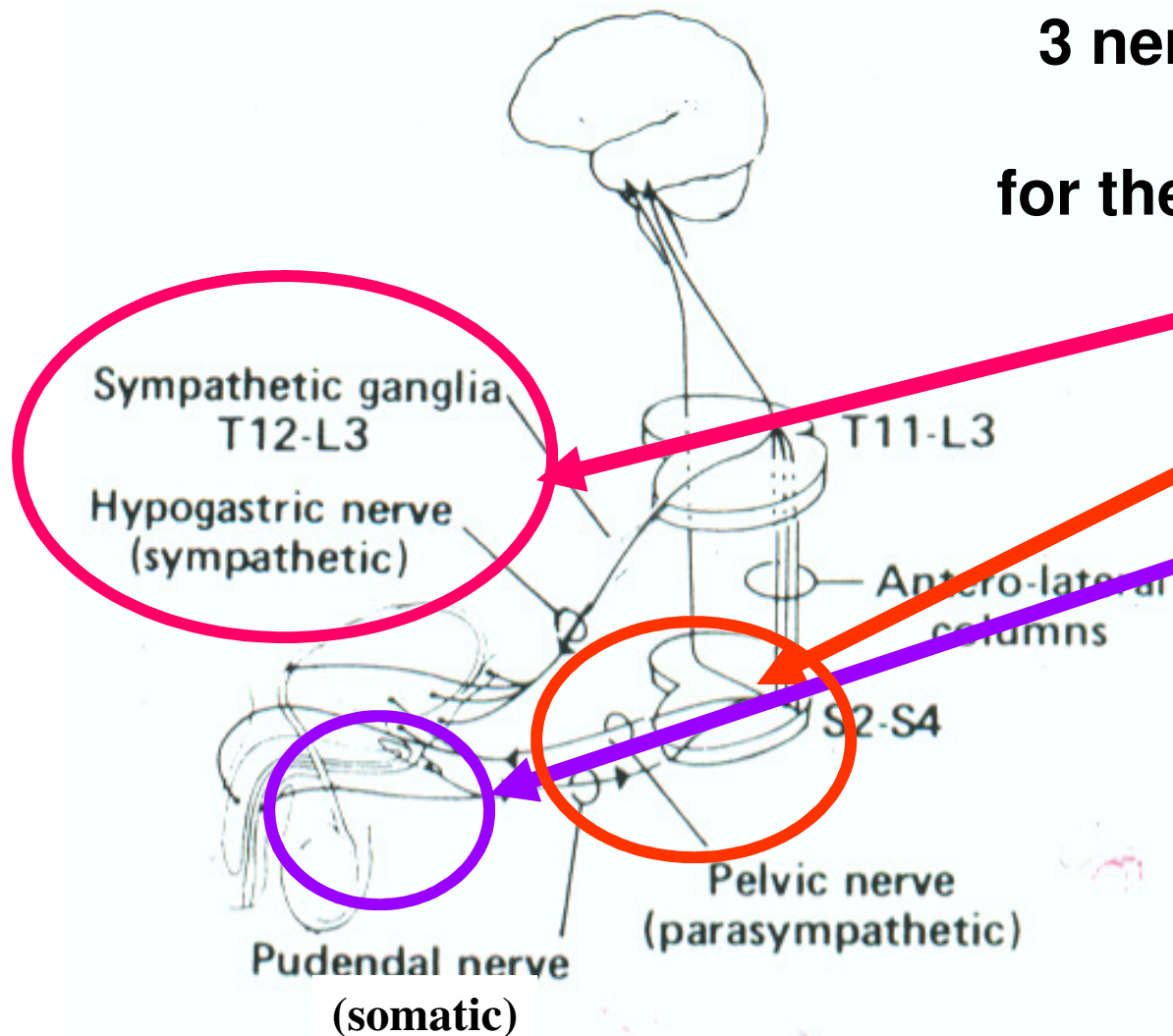


# Age-Related Changes in Sexual Response

- Excitement phase takes longer to achieve
  - ↓ vaginal blood flow and genital engorgement
  - Slower tumescence and less rigidity of erections
- Plateau phase prolonged
  - ↓ vasocongestion of nipples and nipple erection
  - ↓ uterine elevation
  - Harder to achieve ejaculation
- Orgasm retained
  - ↓ number and intensity of vaginal contractions
  - Faster detumescence and prolonged refractory period

# Sexual Neurophysiology

**3 nervous systems are responsible for the sexual responses:**



1. **Thoracolumbar sympathetic**
2. **Sacral parasympathetic**
3. **Somatic (pelvic floor / genitalia)**

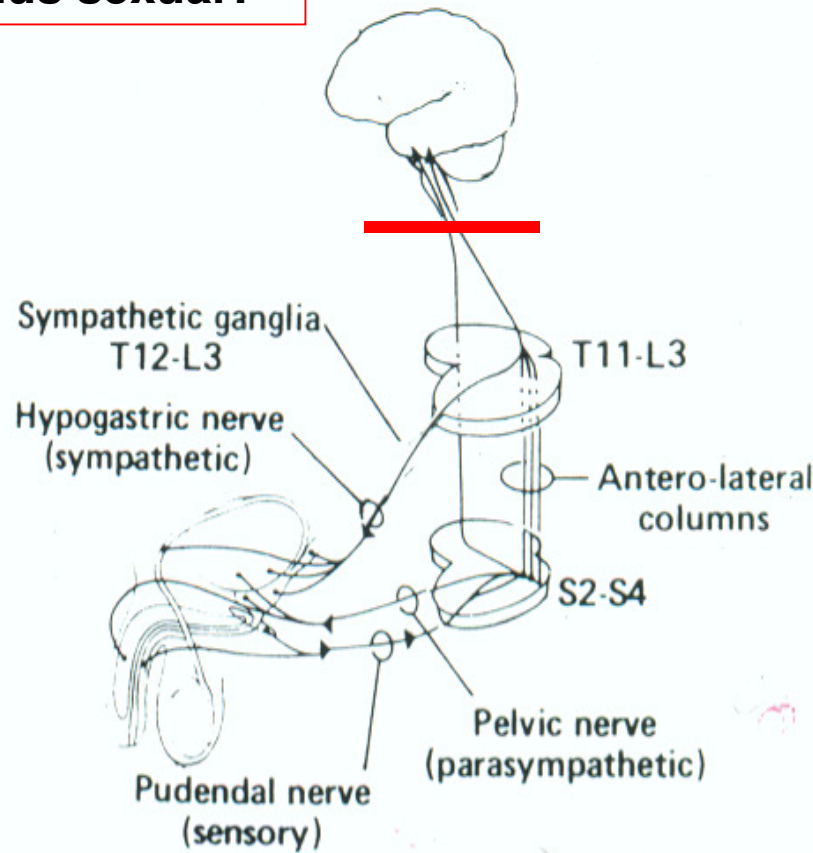
**There must be a removal of supratentorial inhibition before reflexes are initiated**

# Prerequisites for removal of supratentorial inhibition from the brain

Are you in your body  
(non-distracted)?

Is the stimulus sexual?

What is the  
consequence  
of being sexual?



adapted from Dr. G .Szasz

# Objectives

- Describe the components of sexual function
- Summarize a Sexual Rehabilitation Framework (SRF) to manage the complexity of changes

## 1°, 2°, 3° ways of looking at sexual dysfunction in cancer patients

- **Primary**: *direct* physiological impairments from the disease process itself
- **Secondary** : *indirectly* related to physical disorders concerning illness or disease itself and medication effects
- **Tertiary**: *consequence* of cultural, social, emotional and psychological effects

# Cancer and Sexual Dysfunction

- **Primary** : anatomical disruption, direct alterations secondary to nerve changes, small and large vessel disease
- **Secondary**: anemia, fatigue, hormonal alterations, incontinence, increased renal or CV effects, depression
- **Tertiary** : social isolation with surgical scarring, weight changes

# Cancer affects...

- Biopsychosocial aspects of sexuality
- Doesn't need to be genital or breast surgery to have a huge impact
- Silent scars as well as obvious scars
- Sexual self esteem affected by changes to body image and health
- May have to accept a new sexual body



# What do you need to know?

Think ...

..... **Sexual Rehabilitation Framework**...

too overwhelming otherwise!

# Sexual Rehab is...

- Part of a comprehensive rehab program
- The process of supporting individuals to move towards optimal sexual well-being
- Focuses on the emotional, spiritual and physical
- Respects individual values and beliefs and stage of “readiness”



**“Taking a sexual history and thinking beyond sexual (genital) function to the factors that influence sexuality within the practicality of a table helps reduce the intimidating task of addressing the complexity of sexuality.”**

**Elliott, SL, Hocaloski S, Carlson M. Multidisciplinary Approach to Sexual and Fertility Rehabilitation: The Sexual Rehabilitation Framework  
*Top Spinal Cord Inj Rehabil* 2017;23(1):49–56.**

# The 3-Step Method

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1. Many men/women who are living with \_\_\_\_\_ have concerns or questions about the sexual part of their lives
2. Have you thought about this at all?
3. Would you like to talk to someone about it?

# Sexual Rehabilitation Framework

Sexual Area	Consequences	Comments
<b>Sexual Drive/interest</b>		
Sexual Functioning abilities		
<b>Fertility &amp;Contraception</b>		
Factors re the condition		
Motor & sensory influences		
<b>Bladder &amp; bowel influences</b>		
<b>Sexual Self-view and Self-esteem</b>		
<b>Partnership Issues</b>		

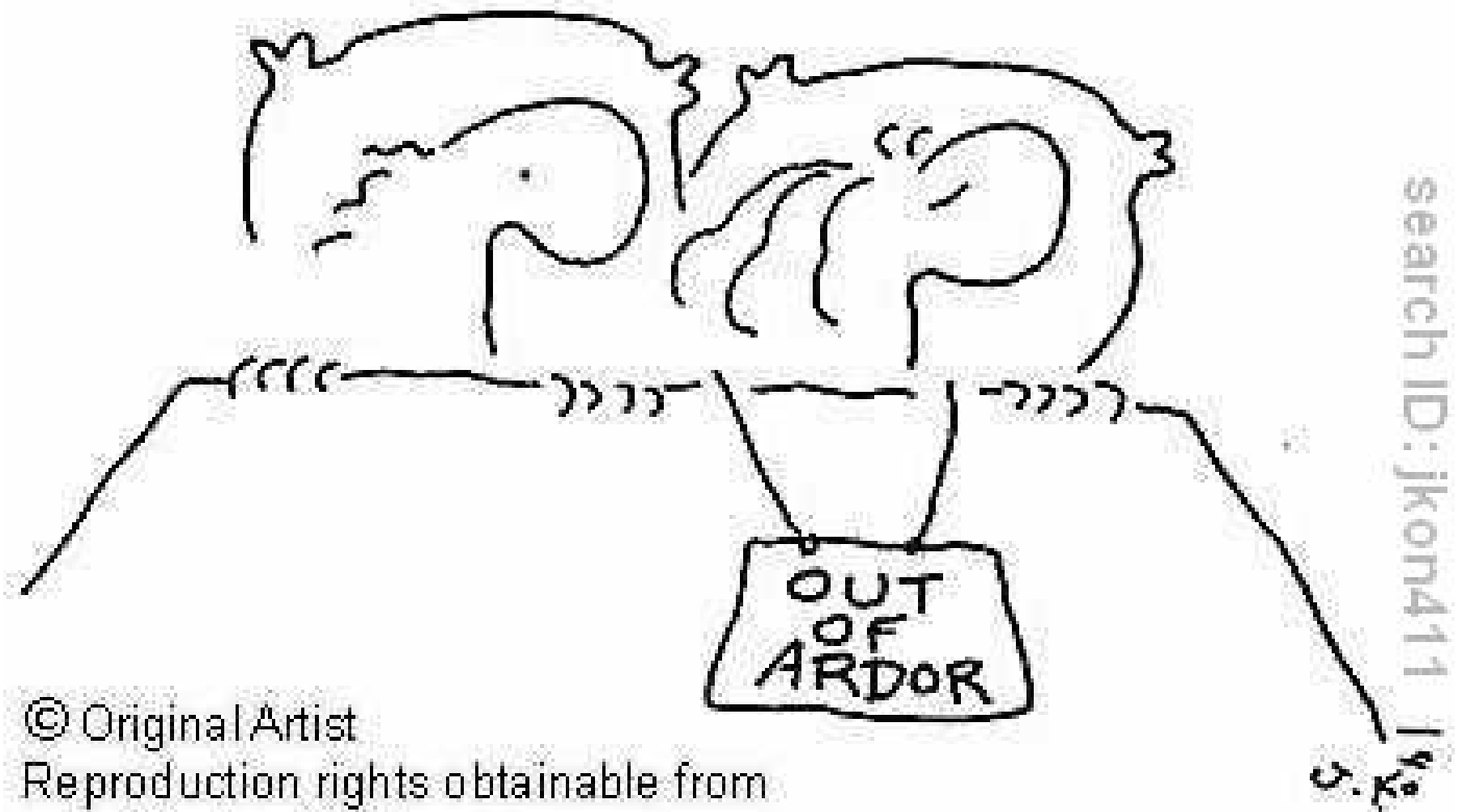
# Sexual Rehabilitation Framework

<b>Sexual Area</b>	<b>Consequences</b>	<b>Comments</b>
<b>Sexual Drive/interest</b>		
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<b>Partnership Issues</b>		

# Sexual Interest/Libido

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Complex interaction of *biological urge* ( driven by testosterone, mood and chemical brain factors) and *motivational factors* ( what the sexual payoff is perceived to be)

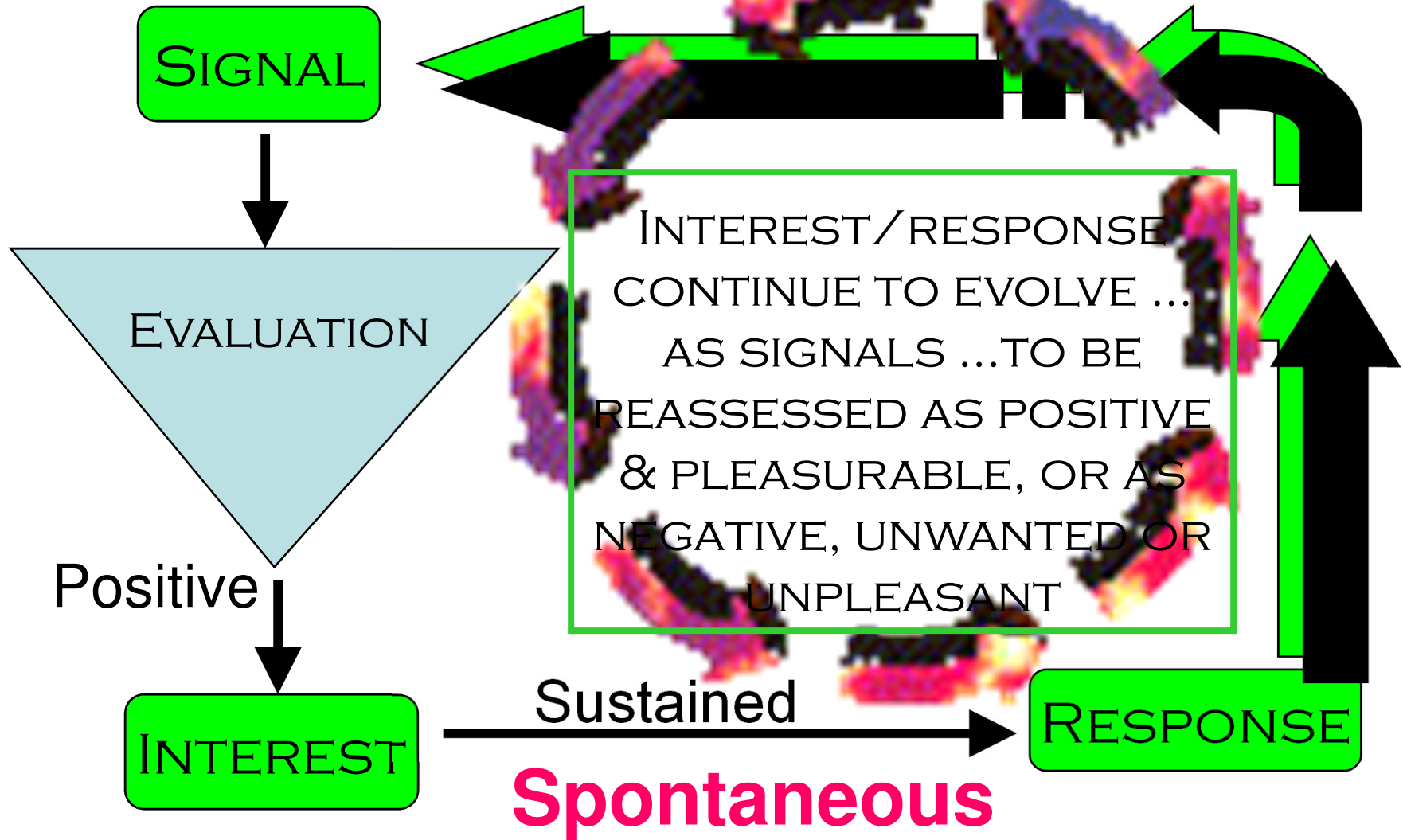


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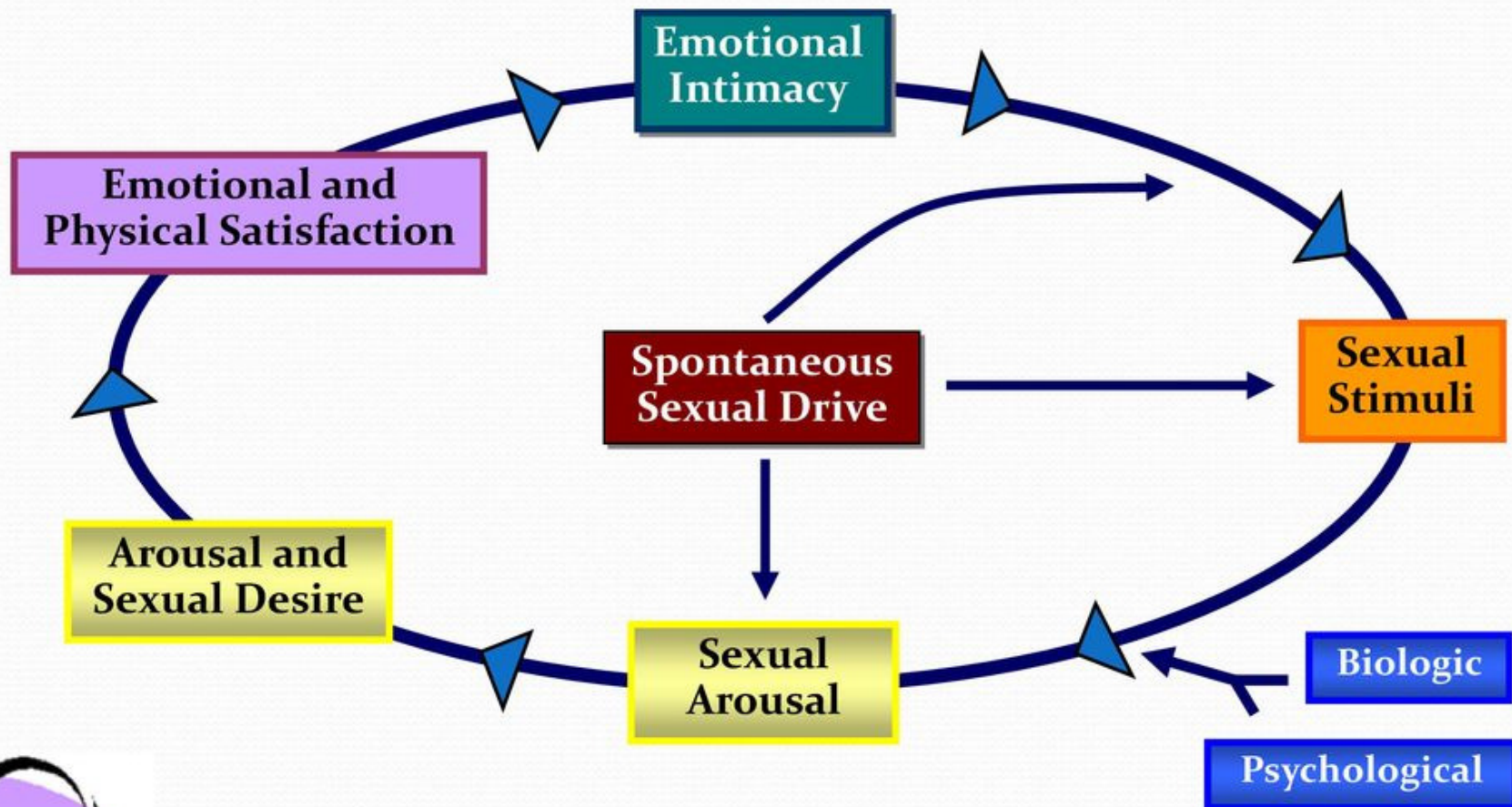
**Desire discrepancy**



# Responsive



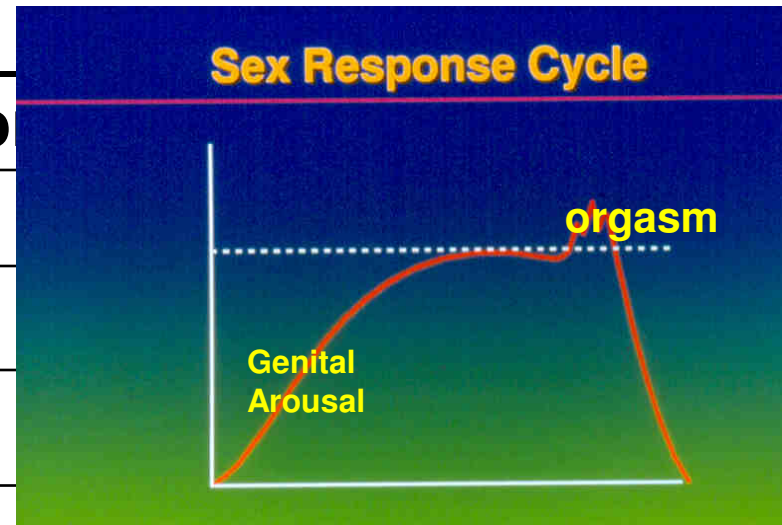
# Female Sexual Response Cycle



Adapted from Basson Model of Sexual Functioning

# Sexual Rehabilitation Framework




Sexual Area	Co	
Sexual Drive/interest		
Sexual Functioning abilities		
Fertility & Contraception		
Factors re the condition		
Motor & sensory influences		
Bladder & bowel influences		
Sexual Self-view and Self-esteem		
Partnership Issues		



**Women – vaginal lubrication and accommodation, orgasm, freedom from sexual pain**

**Men – attain and maintain an Erection, ejaculation, orgasm, freedom from sexual pain**

# Sexual Rehabilitation Framework



Sexual Area	Consequences	Comments
Sexual Drive/interest	<b>Hormones</b> <b>Hand function</b> <b>Risks of pregnancy</b>	 Getty Stock Photo
Sexual Functioning abilities		
<b>Fertility &amp; Contraception</b>		
Factors re the condition		
Motor & sensory influences		
Bladder & bowel influences		
Sexual Self-view and Self-esteem		
Partnership Issues		

# Sexual Rehabilitation Framework



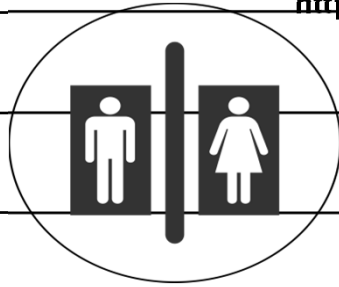
Sexual Area	Consequences	Comments
Sexual Drive/interest		
Sexual Functioning abilities	<b>Very important – think BIG !</b>  Medication affect Depression & meds Fatigue Skin problems Pain & pain meds Mode of cancer treatment Specific system failures	
Fertility & Contraception		
<b>Factors re the condition</b>		
Motor & sensory influences		
Bladder & bowel influences		
Sexual Self-view and Self-esteem		
Partnership Issues		




# Sexual Rehabilitation Framework

Sexual Area	Consequences	Comments
Sexual Drive/interest		
Sexual Functioning ability		
Fertility & Contraception		
Factors re the condition		
<b>Motor &amp; sensory influences</b>	<a href="https://nypost.com/2018/04/25/mom-discovers-tumor-during-pedicure-has-foot-amputated/">https://nypost.com/2018/04/25/mom-discovers-tumor-during-pedicure-has-foot-amputated/</a>	
Bladder & bowel influences	<b>Sensory increase or loss</b> <b>Neuropathic pain</b>	
Sexual Self-view and Self-esteem	<b>Ambulation difficulties</b> <b>Poor abduction for women</b>	
Partnership Issues	<b>Metastatic disease mechanics</b>	

# Sexual Rehabilitation Framework


Sexual Area	Consequences	Comments
Sexual Drive/interest		
Sexual Functioning abilities		
Fertility & Contraception		
Factors re the condition		
Motor & sensory influences		
<b>Bladder &amp; bowel influences</b>		<a href="https://www.cafepress.com/+colostomy+t-shirts">https://www.cafepress.com/+colostomy+t-shirts</a>
Sexual Self-view and Self-esteem		
Partnership Issues		

# Sexual Rehabilitation Framework

Sexual Area	Consequences	Comments
Sexual Drive/interest		<small>Access Sex One 2007 Photography with Sarah Murray</small>
Sexual Functioning abilities		
Fertility & Contraception		
Factors re the condition		
Motor & sensory influences		
Bladder & bowel influences	<b>Sense of masculinity/femininity</b> <b>Grieving for losses</b> <b>Sexual appeal to others and self</b> <b>Ability to persist with sexual exploration</b> <b>Lack of support</b>	
<b>Sexual Self-view and Self-esteem</b>		
Partnership Issues		



# Sexual Rehabilitation Framework

Sexual Area	Consequences	Comments
Sexual Drive/interest		
Sexual Functioning abilities		
Fertility & Contraception		
Factors re the condition		<a href="https://greatergood.berkeley.edu/article/item/what_we_can_learn_from_the_best_marriages">https://greatergood.berkeley.edu/article/item/what_we_can_learn_from_the_best_marriages</a>
Motor & sensory influences	<b>Single/partnered/how one identifies</b> <b>Losses</b> <b>Gains</b> <b>Role reversals</b> <b>Caregiver- lover syndrome</b>	
Bladder & bowel influences		
Sexual Self-view and Self-esteem		
<b>Partnership Issues</b>		

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# Sexual Rehabilitation Framework

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<b>Partnership Issues</b>		

**Arousal = Brain activation**



## Hormone-related Anatomic Changes in the Female Genitourinary Tract

- Genitourinary syndrome of menopause (GSM) is highly prevalent
- Reduction of pubic hair
- Loss of fat and subcutaneous tissue of mons pubis
- Atrophy of genitourinary epithelium
- Atrophy of labia majora
- Atrophy of Bartholin's glands
- Shortening and ↓ elasticity of the vagina
- Increased bladder infections

# Safety of vaginal estrogen for GSM

- A recent report<sup>[4]</sup> from the Nurses' Health Study provides important new information regarding the safety of vaginal estrogen. In this large, long-term cohort study, the mean duration of vaginal estrogen use was almost 3 years.
- The incidence of cardiovascular outcomes, including [myocardial infarction](#), [stroke](#), and venous [thromboembolism](#), was similar in users and nonusers of vaginal estrogen.<sup>[4]</sup> Likewise, the risk for invasive cancer, including endometrial and [breast cancer](#), was similar in users and nonusers.<sup>[4]</sup>
- Current guidance from the American College of Obstetricians and Gynecologists<sup>[5]</sup> as well as the North American Menopause Society recommends that in appropriate candidates, low-dose vaginal estrogen can be used indefinitely without concomitant progestin therapy.<sup>[6]</sup> The findings of this important study support these recommendations.

4 Bhupathiraju SH, et al. Vaginal estrogen use and chronic disease risk in the Nurses' Health Study. Menopause. 2018 Dec 17. [Epub ahead of print]

5. Management of menopausal symptoms. ACOG Practice Bulletin No. 141. American College of Obstetricians and Gynecologists. Obstet Gynecol. 2014;123:202-216.

6 Management of symptomatic vulvovaginal atrophy: 2013 position statement of The North American Menopause Society. Menopause. 2013;20:888-902.

## Help for dyspareunia in the breast cancer patients

- Moisturizers can be used 1-3 times a week
- Non- hormonal lubricants, e.g., coconut oil, sesame oil
- Use of intravaginal DHEA
- Failure of above, then it is reasonable to use hormonal, low dose vaginal estrogen if
  - consultation with the patient's oncologist
  - low risk of recurrence
  - ? no use of aromatase inhibitors

# Lubrication difficulties & Dyspareunia

**Water based lubricants**



**Silicone based**

**Vaginal Moisturizer**



**Hyalfem**

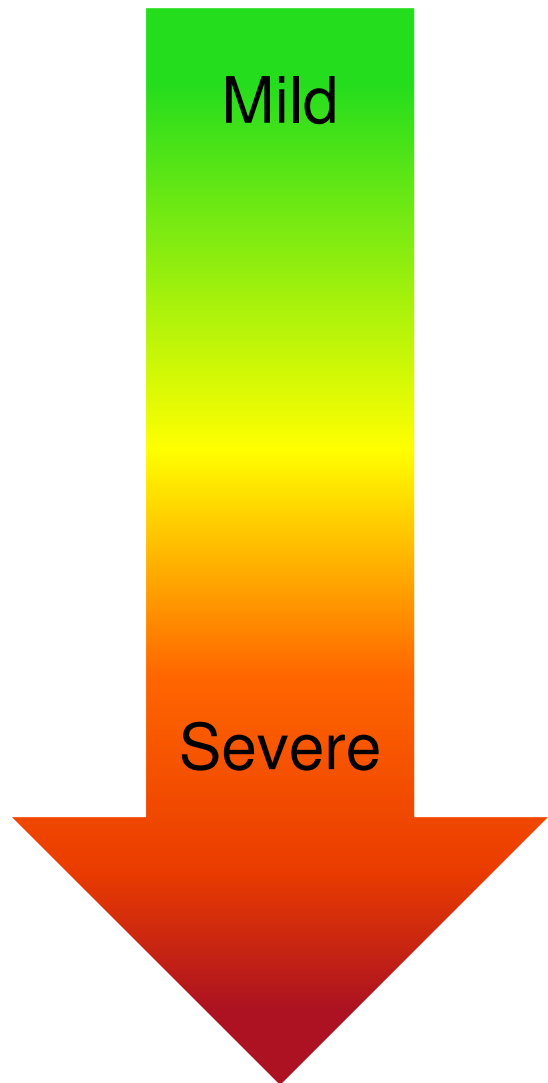


# Dysparunia

- Complex ( differentiate superficial, mid and deep dysparunia) and psychological components
- Should be assessed by sexual medicine specialists (BC Center for Sexual Medicine, Diamond gynecology)
- Referral to Gynecology, Vulvar pain clinics? Pelvic floor physiotherapy ?
- Chronic pelvic pain in men needs to be seen by urology and possibly PF specialists

# Signs and Symptoms of TDS

Order of Appearance



- **Decreased libido**
- Decreased vitality
- Fatigue
- Mood changes
- Insomnia
- Anemia
- **Delayed ejaculation**
- Flushes
- **Erectile dysfunction**
- Decreased muscle mass
- Increased visceral body fat
- Testicular atrophy
- Weakness
- Osteopenia/osteoporosis
- Loss of facial, axillary and pubic hair

## Sexual Symptoms of androgen deficiency are varied and include:

- decreased sexual interest
- diminished erectile quality, particularly of nocturnal erections
- muted, delayed or absent orgasms
- decreased genital sensation
- reduced sexual pleasure

Morales A: 2003 & 2004, Nieschlag E, 2005; Jockenhovel F 2004; Gooren LJ, 2004; Schulman C 2002

# Who is at risk for Low T?

- Low T is a general sign of poor health
- **Glucocorticoid or opioid therapy**
- Liver or renal disease, COPD, traumatic brain injury or SCI, HIV, MS
- Metabolic syndrome or diabetes
- Anemia, sarcopenia

# Replacing hormones for sexual QoL ??

- Risk / benefit
- Assess reduced or no systemic absorption and safety
- Myths: TRT for hypogonadism causes prostate cancer or worsens the risk of aggressive prostate cancer
- Truths: men with low T have more aggressive PCa and found at later stage

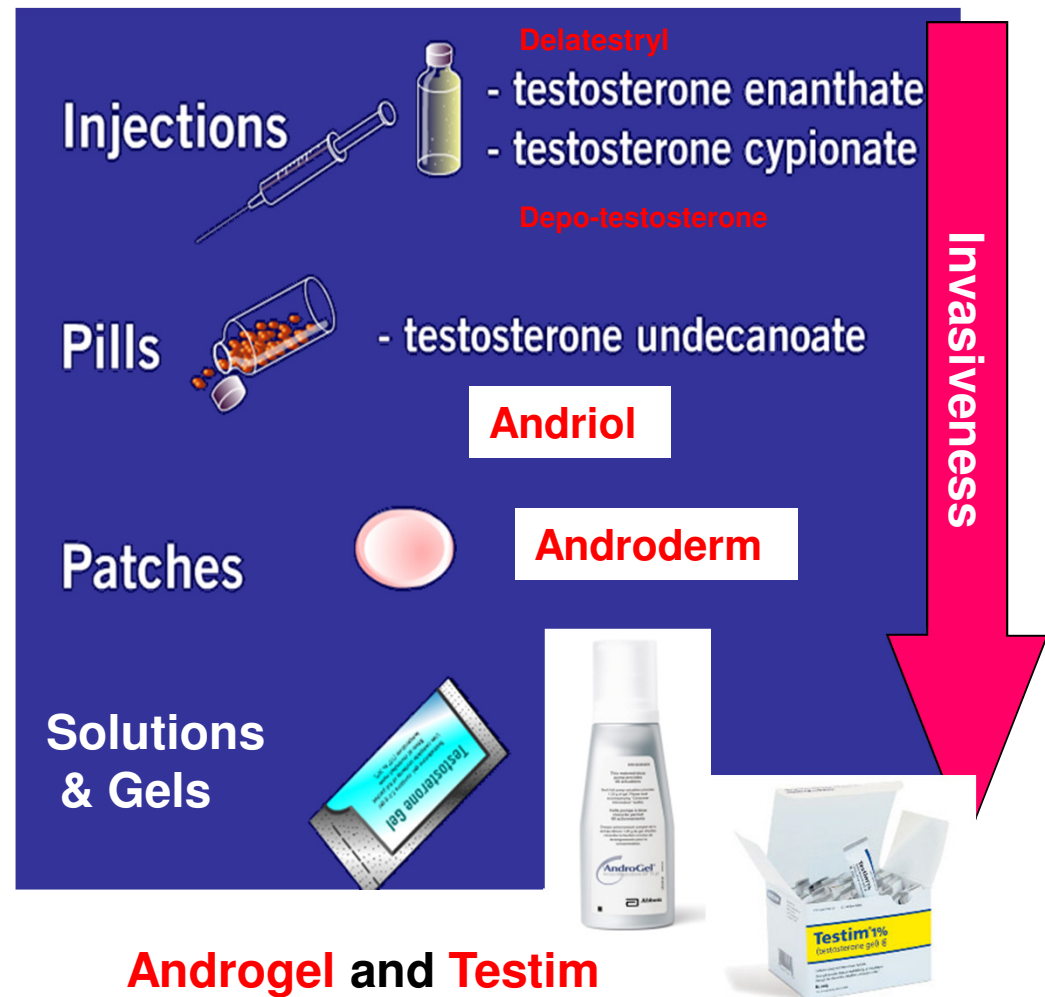
# Testosterone Replacement Therapy (TRT)

- **Goals:**
  - Symptom improvement
  - Achievement of physiological T levels
- **Several safe and effective formulations available**

Newest: **Natesto**



**No TRT for men wanted kids!**



**AndroGel and Testim**

# Women and Androgens

- Serum androgen levels do not correlate with sexual symptomatology
- Much more complex than just hormones
- Testosterone is aromatized to estrogen
- Debate on androgen replacement value in women except for specific cases
- Long term use - no safety data

## Some Medications Affecting Sexual Function

Drug class	Arousal	Desire	Orgasm	Vaginal dryness/ED
Antihistamines	X			
Anti-hypertensives	X	X		
Anti-lipid, cholesterol lowering agents		X		
Anti-ulcer		X		
Anticholinergics	X			X
Antidepressants	X	X	X	X
Antipsychotics	X	X	X	
Amphetamines			X	
Sedatives	X	X	X	
Tobacco, alcohol		X		(tobacco)
Steroids, Narcotics		X		
SERMs, GNRH agonists, Flagyl	X		X	



# Drugs for Female Sexual Dysfunction

- **Biopsychosocial model** is essential to understand whether a candidate drug induces meaningful effect over placebo
- Vasoactive agents, hormone therapy and psychoactive drugs have been investigated
- Before 2015, randomized placebo-controlled trials showing efficacy and safety, however, did not convince the FDA to approve either transdermal testosterone patch in postmenopausal women or the serotonergic agent flibanserin in premenopausal women, for the treatment of hypoactive sexual desire disorder ( ie non-life threatening condition).

# Addyi – not in Canada yet

- Flibanserin is a novel multifunctional serotonin agonist and antagonist (MSAA) that improves sexual functioning in premenopausal women who suffer from reduced sexual interest and desire.
- Now sold under the trade name **Addyi**, is a medication approved for the treatment of pre-menopausal women with hypoactive sexual desire disorder (HSDD). The medication increases the number of satisfying sexual events per month by about one half to one over placebo from a starting point of about two to three.

# Therapies for erectile dysfunction

- **Oral medications : PDE5i**
  - Viagra prn
  - Levitra prn
  - Cialis prn and daily
- **Mechanical**
  - Vacuum erection devices : VED
  - Penile rings
- **Intraurethral medications: MUSE**
- **Intracavernosal injections : ICI**
- **Penile prosthesis :PP**

# Sildenafil



# Vardenafil



# Tadalafil



**Available  
PDE5i  
2019**



**Staxyn**



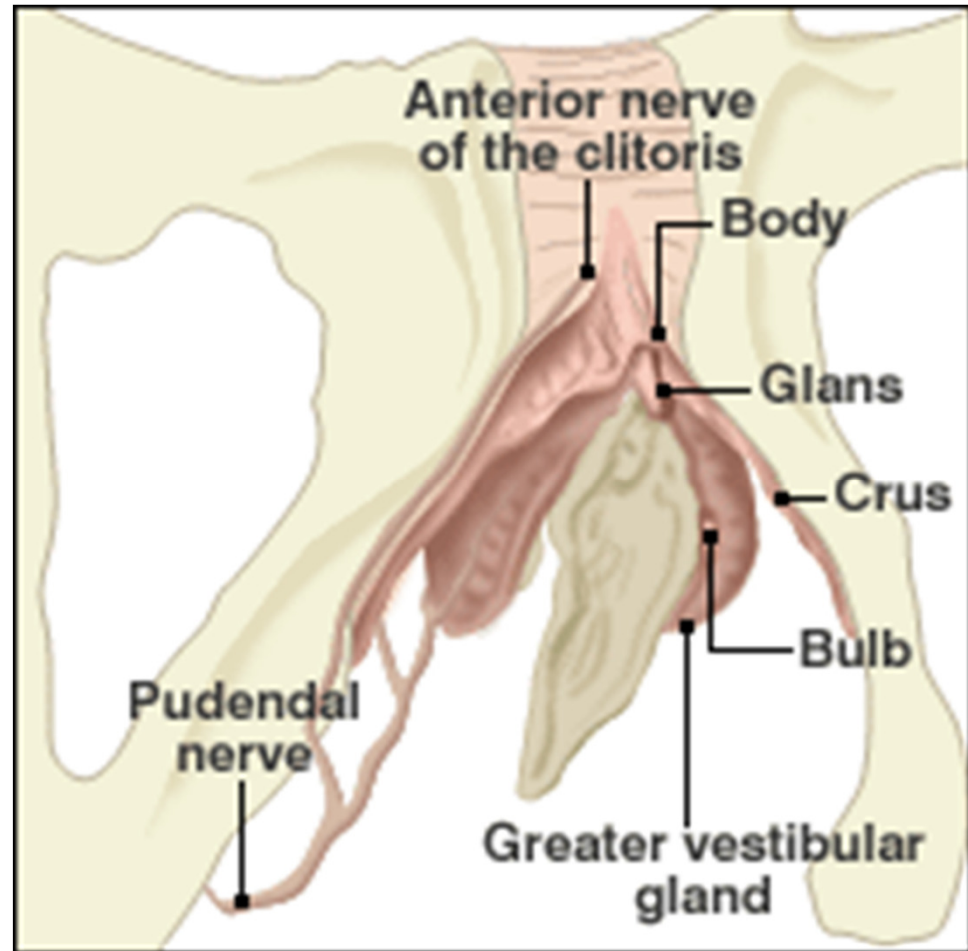
**Cialis daily**

# Only erectile tissue will be effected by PDE5i

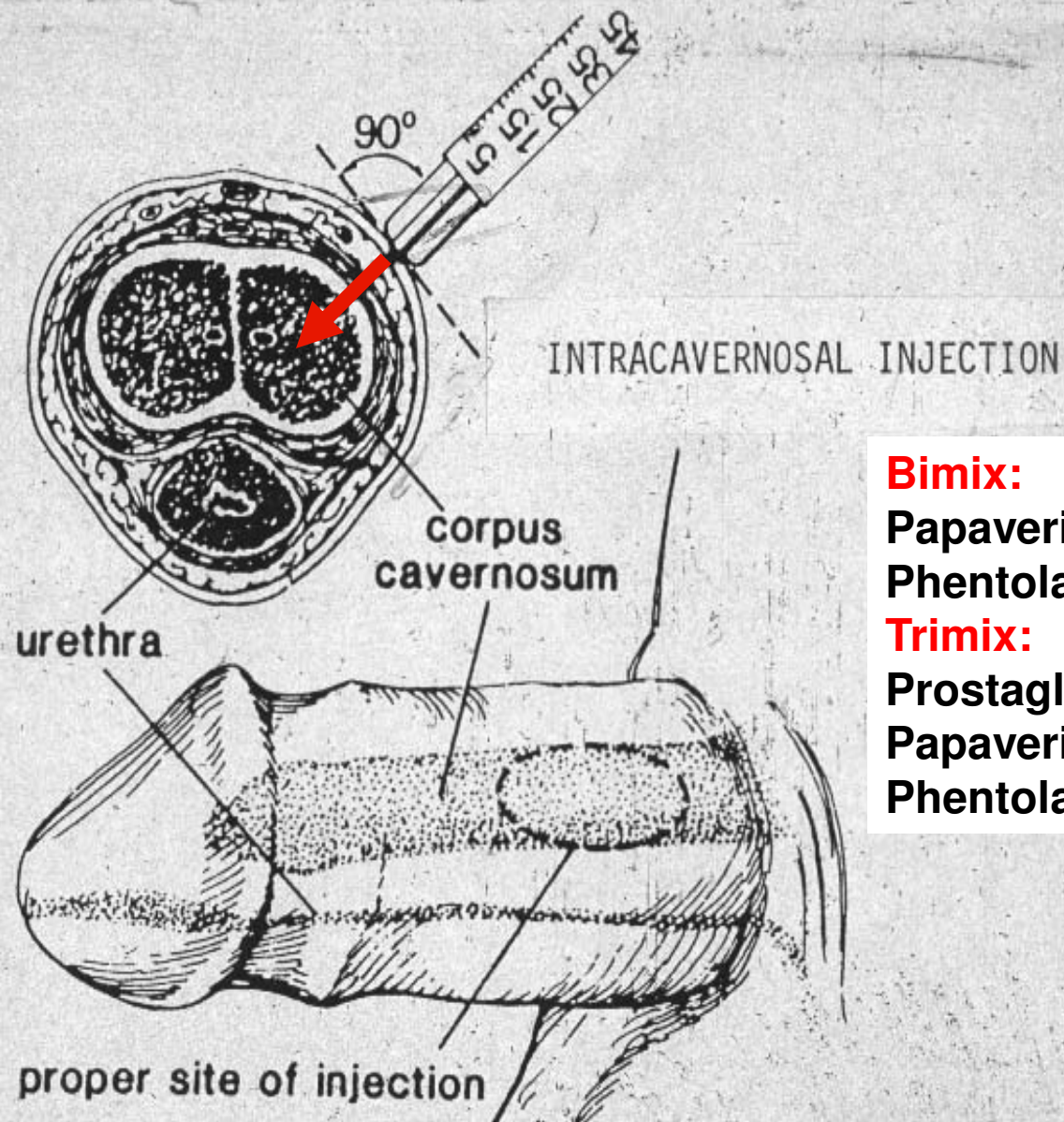
Most of the time clitoral smooth muscle is maximally relaxed anyway

PDE5i may increase perceived sensation due to vasocongestion in women with compromised genital sensation or substantial atherosclerosis

While this has been seen in women with MS and incomplete SCI, it has not been tested in women with cancer







**Bimix:**

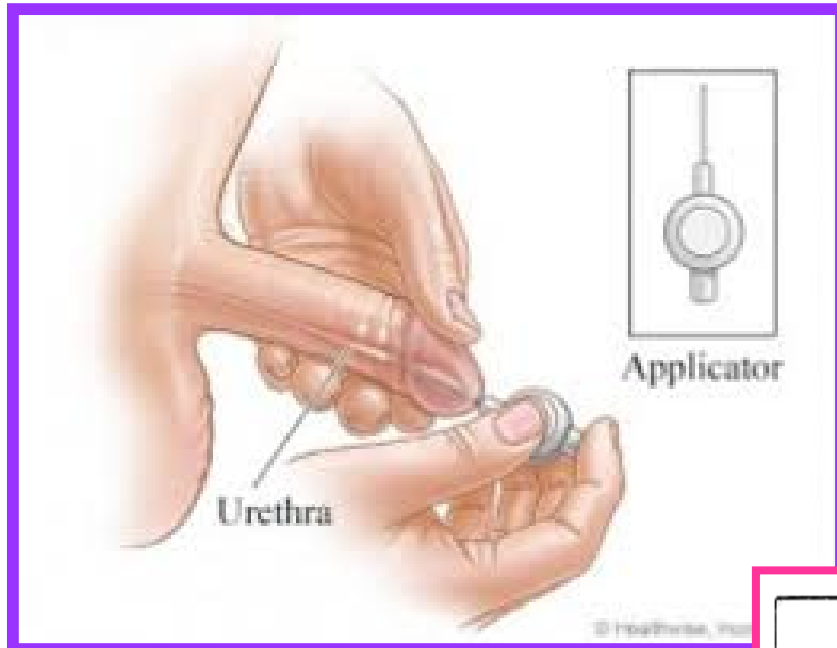
Papaverine &  
Phentolamine

**Trimix:**

Prostaglandin &  
Papaverine &  
Phentolamine

*Prostaglandin E1 most utilized medication  
( through CAMP mechanism)*

# Spongiosal delivery of PGE1

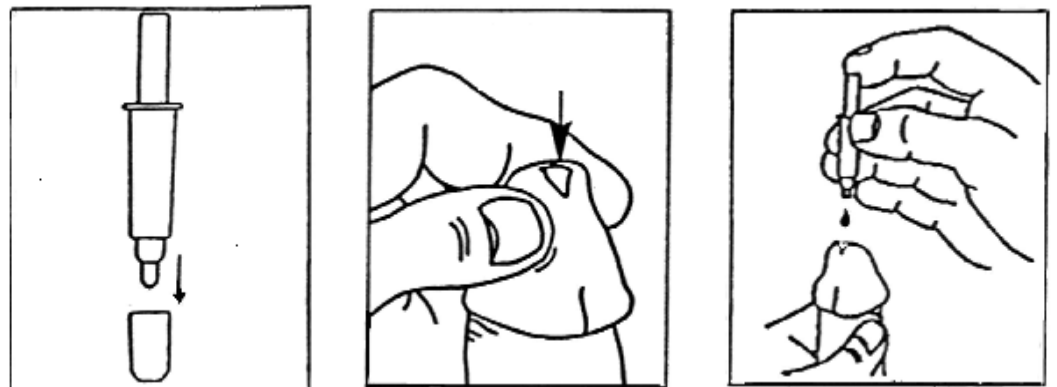


**MUSE**

(intraurethral)

**VITAROS**

Topical solution  
via the  
glans only

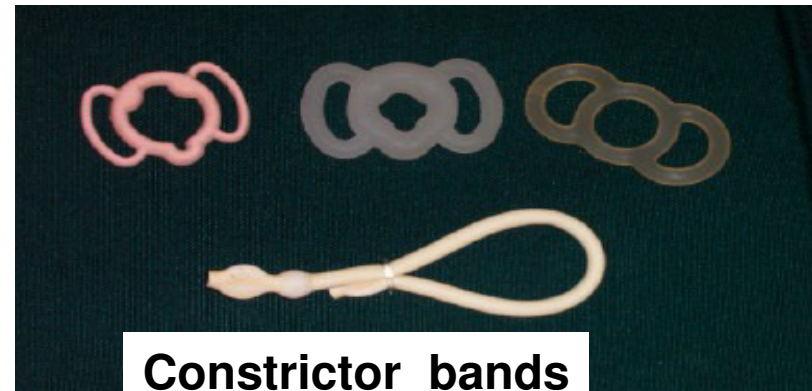
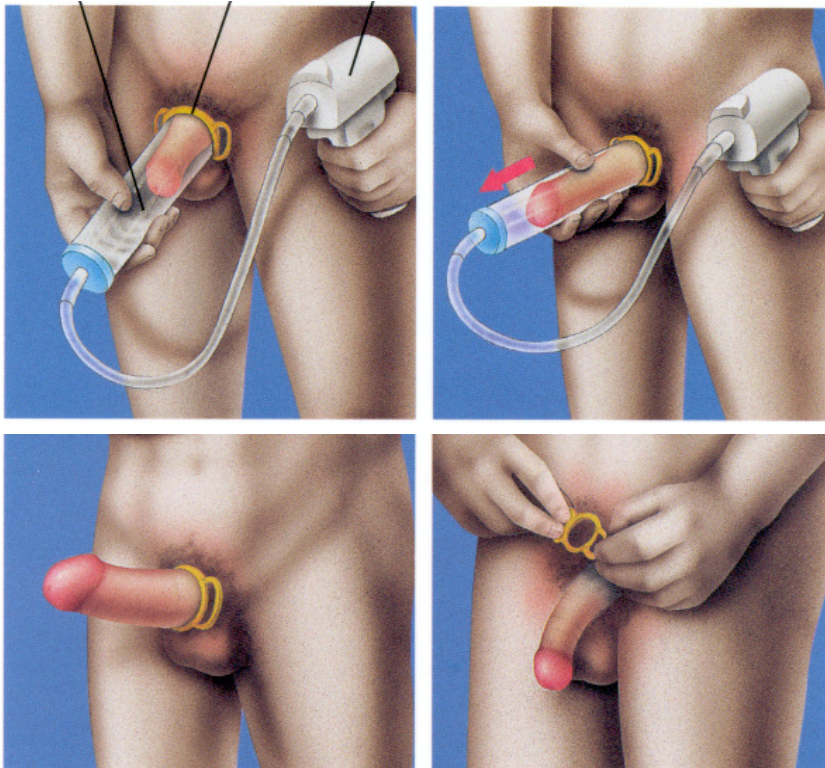




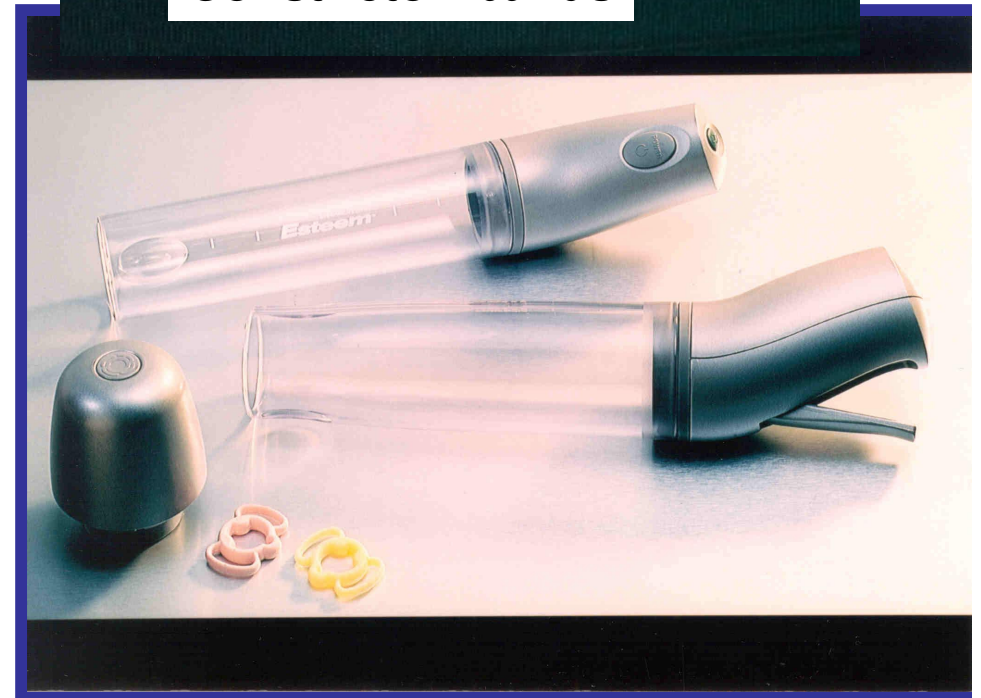
# Treating Erectile Dysfunction

## Physical Methods

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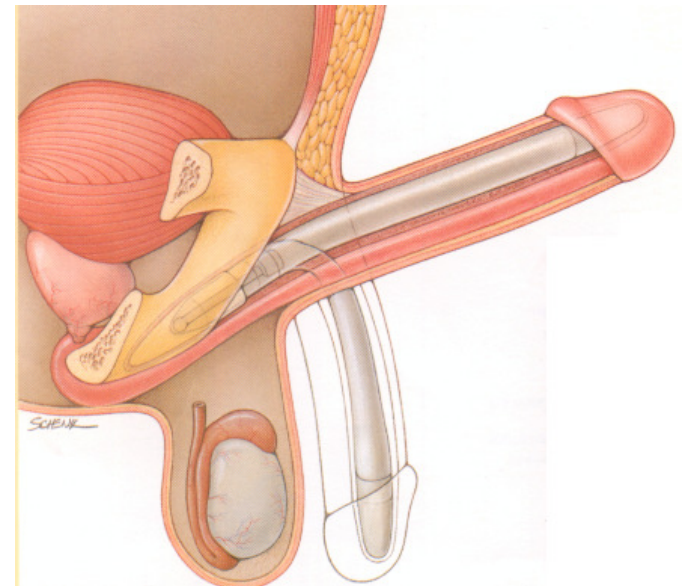
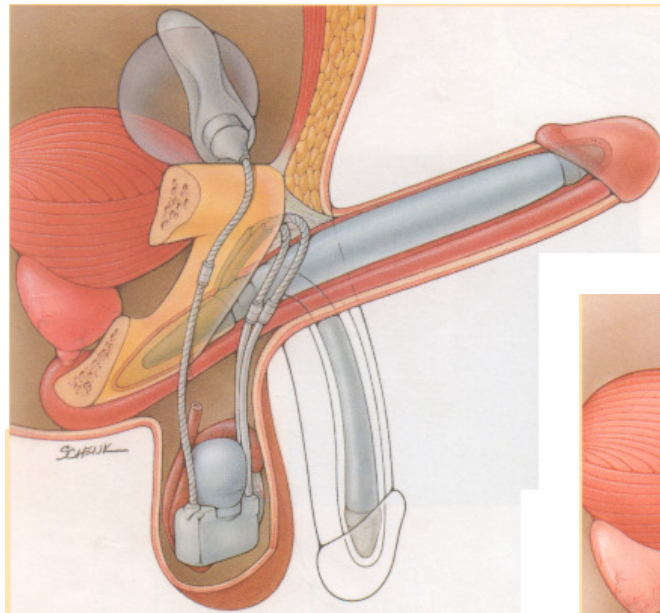
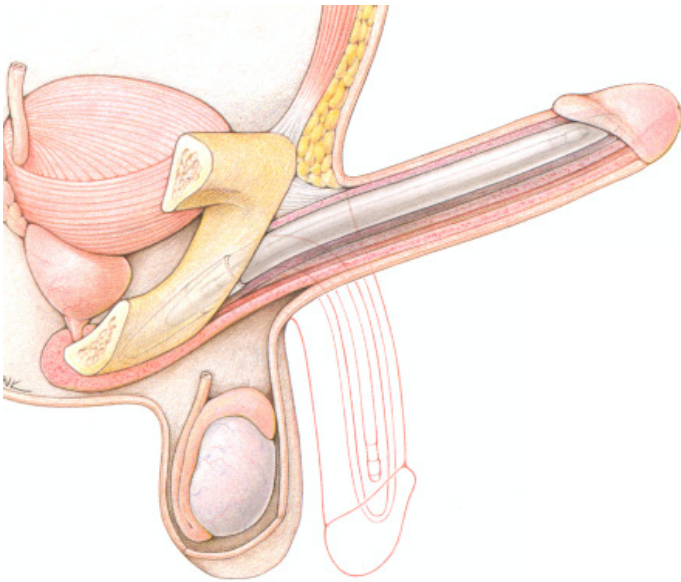


**Constrictor bands**





# Treating Erectile Dysfunction with Surgical Methods

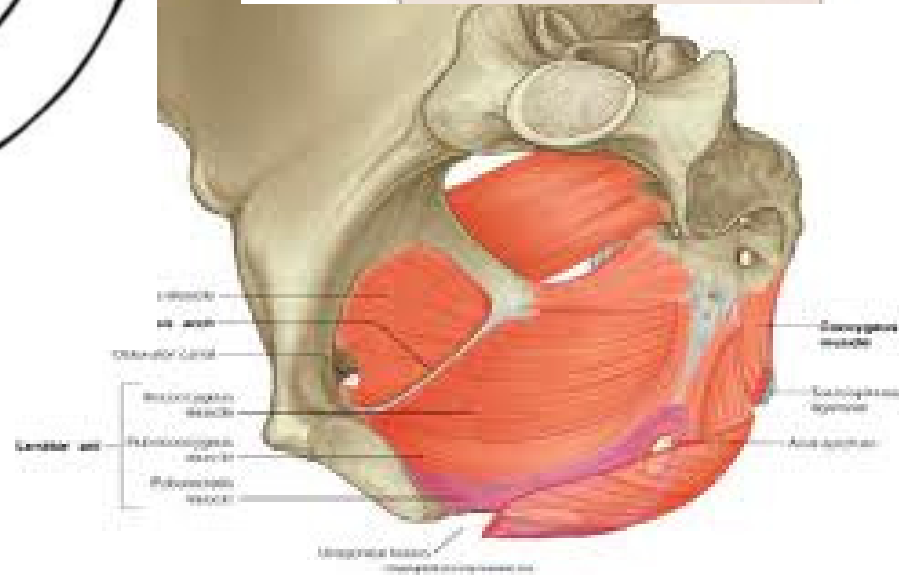
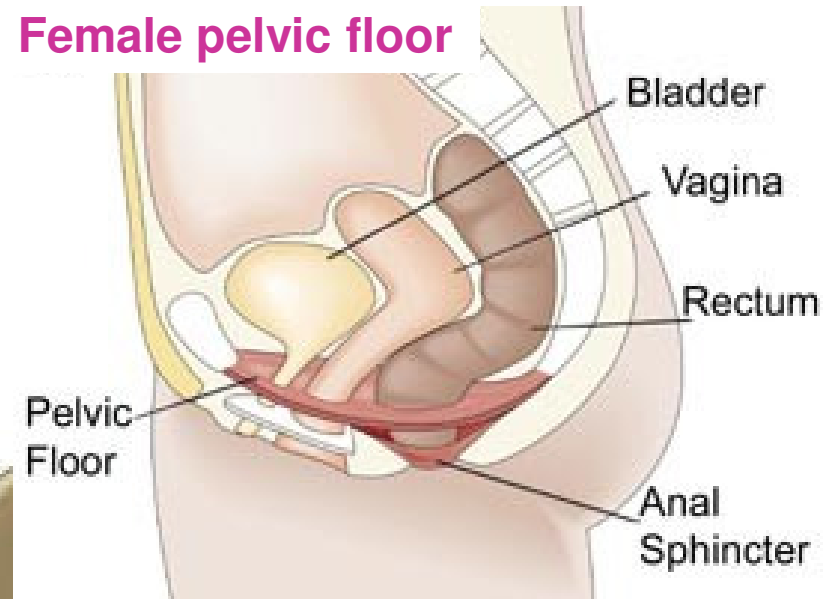


# Pelvic floor potential



Male pelvic floor

Female pelvic floor



# Vibrators



# Vibrators for men



**WAHL**

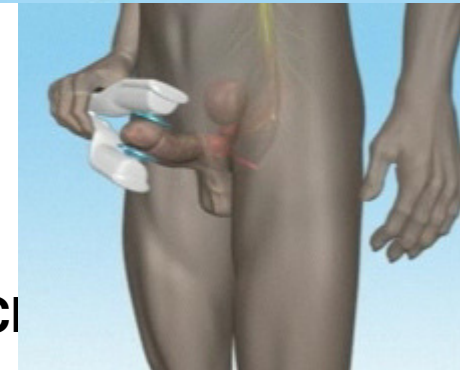


**Hitachi Magic Wand  
and others**

**Viberec FDA approved**



**Ferticare FDA and HC approved for SCI**



# Conditions that Facilitate Sexual Pleasure and Orgasm

- Relaxation, meditation, dreams
- Fantasy, recalling positive experiences
- Breathing, going with the flow
- Trust or being with a partner who is trusted
- **MINDFULNESS**
- Addition of nongenital touch, plenty of time, added stimulation of a **vibrator**



**ISCOS 2015  
POSTER SIP75**



# Pleasure Principle

**“Pleasure is the authentic, abiding satisfaction that makes us feel like complete human beings”**

**- Virginia Johnson**

Adds meaning to life

*Antidote to physical and mental pain*

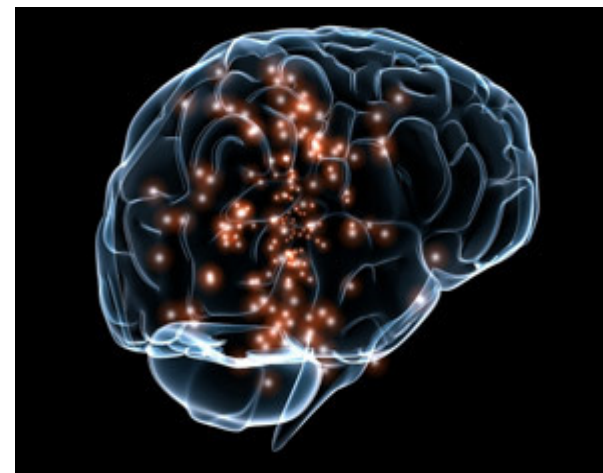
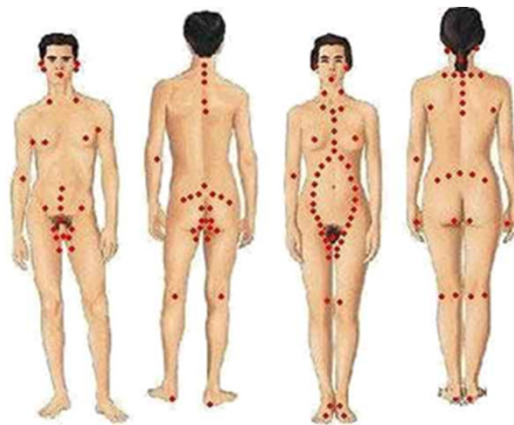
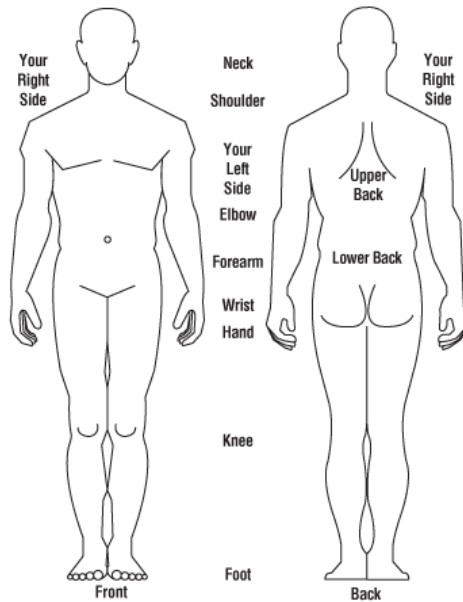
Enhances intimacy

Increases a sense of connectedness

Decreases stress

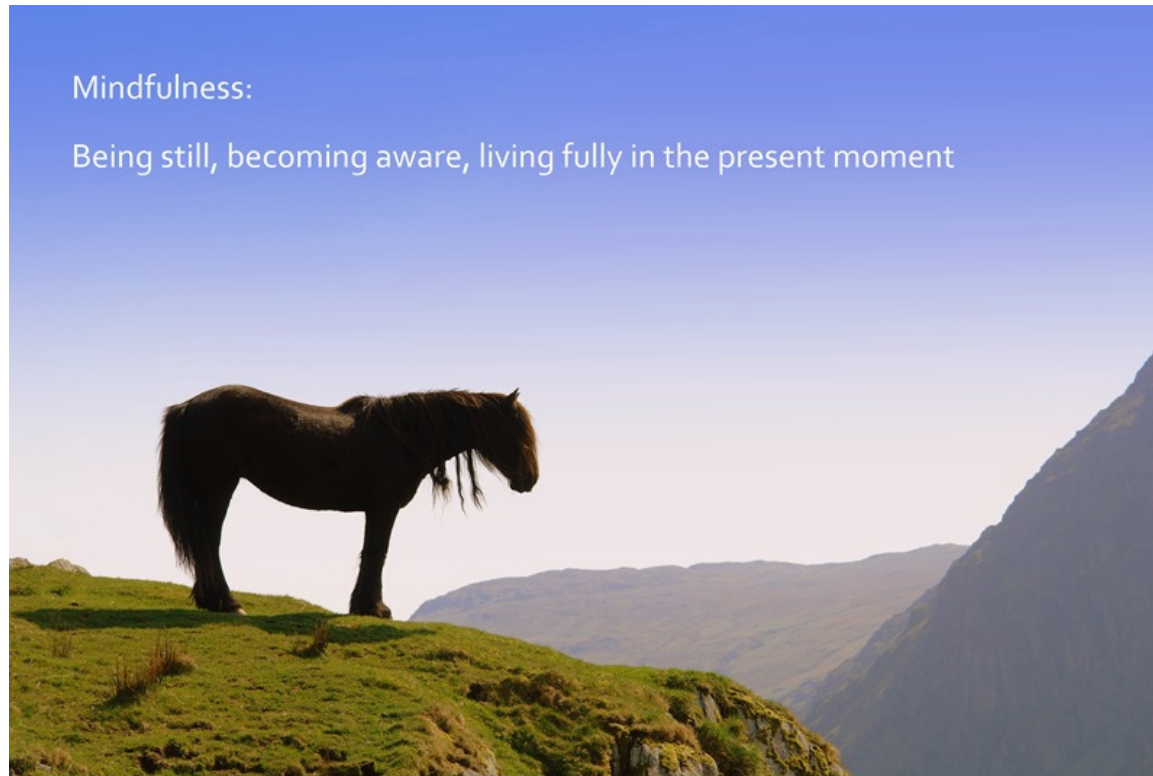
Lived Experiences : Tepper ISSWSH 2002

# Afferent recruitment



# What is Mindfulness?

**Non-judgmental, present moment awareness**



Jon Kabat -Zinn



# Benefits of 'Mindfulness' in Sexual Rehab

- Body remapping
- Improve mind body connection
- Improve self-view
- Present moment awareness
- Pain management
- Stress reduction
- Self-compassion
- Quality of life



Tara Brach, Jon Kabat-Zinn, Jack Kornfield, Zindel Segal,

# Sexual Rehab Principles

- Maximize Potential
- Adapt to limitations
- Remain positive and open minded



S.Elliott 2010

## Talking Sex as a Physician: What gives you confidence?

Knowing how to take a **10 minute history**

- Having a schemata in your head to get going and do a basic assessment : is this going to be straightforward or not?
- Relax: don't try to do everything in one appointment
- Knowing therapeutics
- Practice and experience

# Screening vs. assessment

## Different attitudes

- Don't ask don't tell?
- Likelihood of presentation by women > men
- Routine screening in physicals or related to genital or relationship concerns
- Screen for problems in high risk patients only?
- Question: is it a sexual dysfunction or a something else presenting in the sexual arena?

# Talking Sex

- If you can talk bladder and bowel, you can talk sex
- This isn't personal: no one can read your mind
- Use the proper words over and over
- Don't use slang (with a few exceptions)
- Don't bluff : ask if you don't know
- Remember: you know more than you think

# Ten minute sexual history

1. Clarify : What's the main concern?
2. Classify : Onset and duration? Situational or generalized?
3. Context
4. Rest of sexual response
5. Partner's sexual response
6. Reaction
7. Previous treatment
8. Motivation

# Decide

- What are you comfortable with?
- What is your education?
- What are you willing to learn more about?
- What are your limitations?
- Practice
- Financial reimbursement
- Professional fulfillment : QOL vs life-threatening

# Referral sources

## **BC Centre for Sexual Medicine**

**- 604 875-4705**

2<sup>nd</sup> floor Blusson, 818 West 10<sup>th</sup> Avenue Vancouver

## **Prostate Cancer Supportive Care Program - 604 - 875 – 4495**

Room 6259 Gordon and Lesley Diamond Building , VGH

## **Sexual Health Rehabilitation Service**

- 604-737-6233 (25<sup>th</sup> and Oak)

- 604 875 4111 x 69402 ( Blusson)





Thank you for listening!  
Questions?

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