

MALE SEXUAL HEALTH

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THEUROLOGY GROUP

Advanced Care. Improving Lives.



Testosterone

Charles Brown-Sequard 1889

- ▣ Testis Latin word for witness
- ▣ Testify Comes from ancient Roman custom in which a man would clutch his testes in his right hand before giving evidence in court

Responsible for development of male reproductive tissue

Hormone (anabolic steroid) produced mostly in the testes of men

Testosterone

- ▣ Regulated by the hypothalamic- pituitary- gonadal axis
- ▣ Promotes the growth of other cellular proteins
- ▣ Different effects at various stages of life
- ▣ Declines naturally as men age

Measuring Testosterone

- ▣ Normal circadian rhythm
- ▣ Total and free testosterone
- ▣ Variability among laboratories

Effects of testosterone

Basic Science Evidence for the Link Between Erectile Dysfunction and Cardiometabolic Dysfunction J of Sex Med 2015;12:2233-2255

A Comprehensive Review of Metabolic Syndrome Affecting Erectile Dysfunction J of Sex Med 2015;12:856-875

Translational Perspective on the Role of Testosterone in Sexual Function and Dysfunction J of Sex Med 2016;13:1183-1198

Effects of Testosterone

Musculoskeletal system

- ▣ Crucial role in maintenance and growth of bone

Beneficial effects on lean muscle mass and body fat

Mental and cognitive health

Studies with conflicting results

Effects of Testosterone

- ▣ Libido
- ▣ multiple studies show consistent association between low testosterone and low sexual desire
- ▣ exact etiology unknown but androgen receptors throughout distinct areas of the brain
- ▣ Endocrinologic Control of Men's Sexual Desire and Arousal/Erection J of Sex Med 2016;13:317-337

Effects of Testosterone

Erectile Function

stimulates production of nitric oxide

important for maintenance for penile arterial inflow and the smooth muscle of the penile corporal bodies

Risks of Testosterone Therapy

FDA Jan 2014 “possible increased cardiovascular risk”

- ▣ Four studies showing potential adverse affects
All retrospective, highly statistical with only minor effects
- ▣ Wealth of studies over the past 30 years showing CV benefit of TRT
- ▣ Testosterone deficiency with known CV risks

Risks of Testosterone Therapy

Spermatogenesis

Polycythemia

Prostate Cancer

Testosterone Replacement Therapy

- ▣ Comiphene
- ▣ 50 mg three times weekly

- ▣ Topical agents
- ▣ androgel, compounded products

- ▣ Injection therapy
- ▣ testosterone cyp

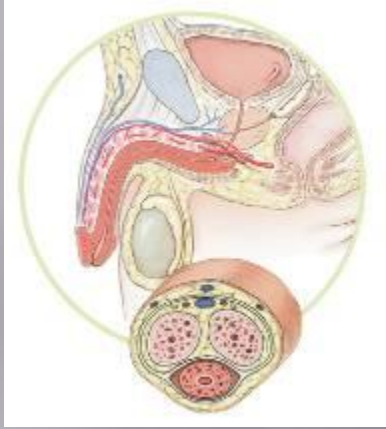
Testosterone Replacement Therapy

- ▣ Follow up testing
- ▣ testosterone, estradiol, hematocrit
- ▣ Re evaluate with labs at one month and clinical evaluation at three months

Erectile Dysfunction

- ▣ Inability to achieve or maintain an erection adequate for sexual intercourse
- ▣ Requires male hormones, nerve conduction but mainly adequate blood flow
- ▣ Any disease that adversely affects blood flow can cause erectile dysfunction

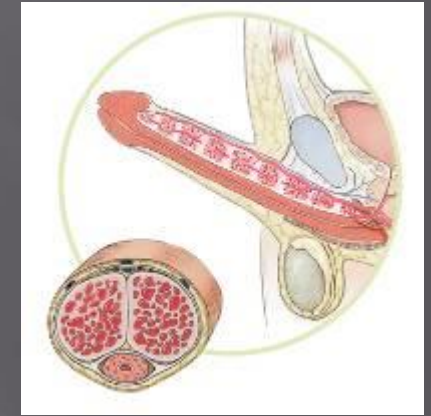
How does an erection occur?



1. Sexual stimulation and excitement cause the brain, nerves, heart, blood vessels and hormones to work together to produce a rapid increase in the amount of blood flowing to the penis.



2. The blood becomes trapped and held in the two spongy chambers in the shaft of the penis.



3. As the chambers rapidly fill with blood, they expand, and the penis becomes firm and elongated. The result is an erection.

Etiology of Erectile Dysfunction

- ▣ Hormonal

- ▣ Neurologic

 - spinal cord injuries, diabetes, prostate cancer treatment

 - Vascular

 - metabolic syndrome, tobacco, stress

Treatment of Erectile Dysfunction

1st line therapies oral meds, testosterone replacement therapy, lifestyle interventions

2nd line urethral and topical Alprostadil, Intracavernosal injections, vacuum pumps

3rd line penile prosthesis, vascular surgery

PDE5 Inhibitors

Sexual arousal causes synthesis and release of nitric oxide that leads to smooth muscle relaxation through cGMP

PDE5 results in degradation of cGMP that leads to penile detumescence

cGMP levels remain high with PDE5 inhibitors that facilitates improved penile tumescence

PDE5 Inhibitors

- ▣ All have excellent efficacy and safety profile
- ▣ Generic sildenafil, tadalafil

Treatment Options

Injections, Transurethral and Vacuum



Why choose injections over pills:

- Lack of response or contraindications to oral drugs^{1,2}
- Reliable, instant, predictable erection^{1,2}
- Patient preference²



Why choose a vacuum device?

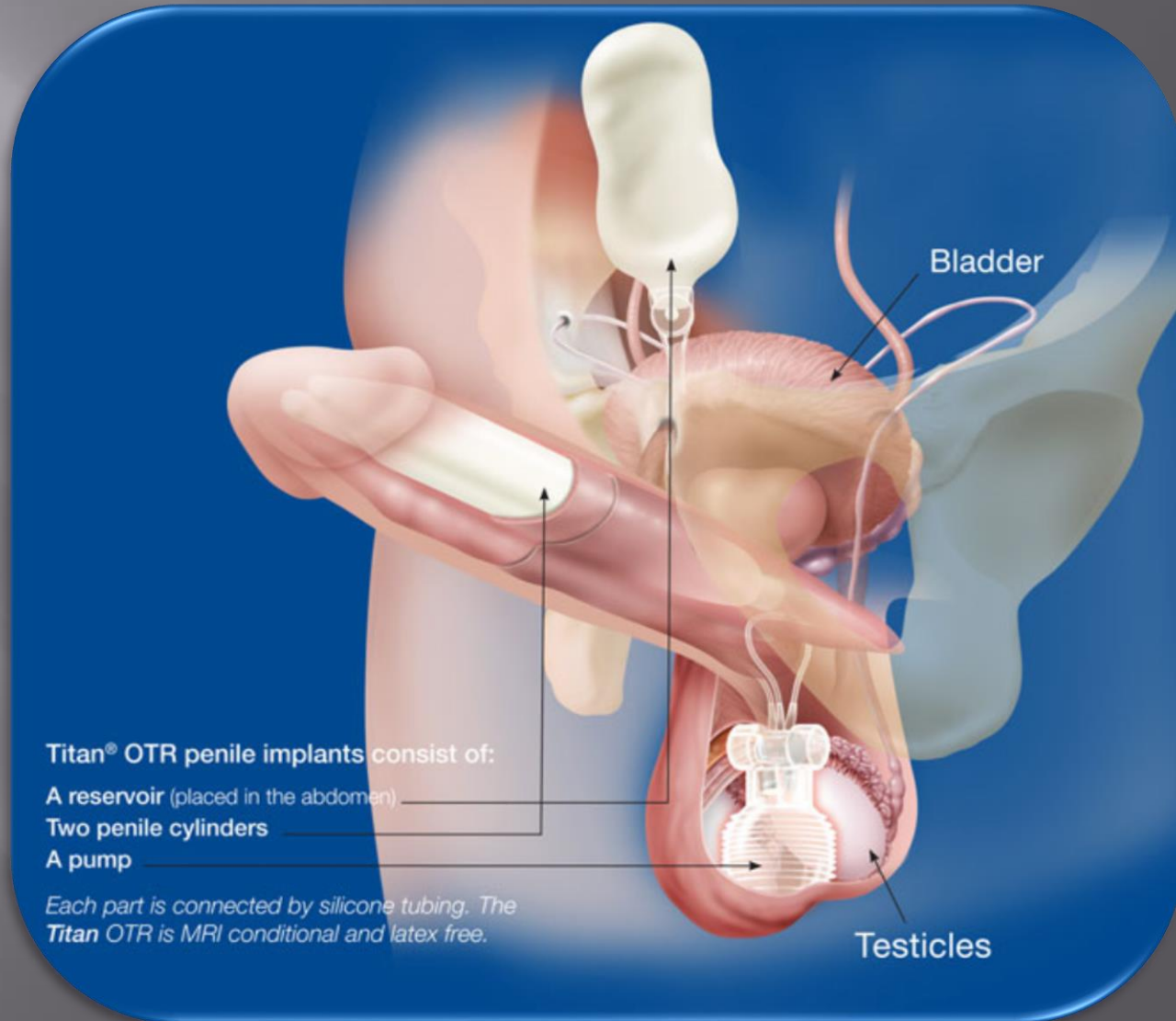
- Lack of interest in drug therapy
- Specific contraindications to drug therapy
- Patient preference



IC injection therapy

- ▣ Penile tumescence via smooth muscle relaxation
- ▣ Alprostadil (PGE1) only FDA approved agent
- ▣ Bimix, Trimix
- ▣ 75 to 85 % efficacy

Penile prosthesis



Penile Prosthesis

Out patient surgery typically 45 to 60 minutes

Insurance coverage

High patient satisfaction

Regenerative Medicine

Replacing, engineering or regenerating human cells, tissues and organs to restore normal function

Stem cell infusion

Plasma -rich plasma

Low Intensity Extracorporeal Shock Wave Therapy

- ▣ Neo-angiogenesis
- ▣ Stem cell recruitment that helps with growth of new corporal tissue
- ▣ No single gold standard protocol

Keys to a healthy sex life?

- ▣ Stay married
- ▣ Stay active
- ▣ Keep heart healthy
- ▣ Check testosterone
- ▣ Communicate

