



# VASECTOMY

FLAME LECTURE: 155

BURNS 8.12.15

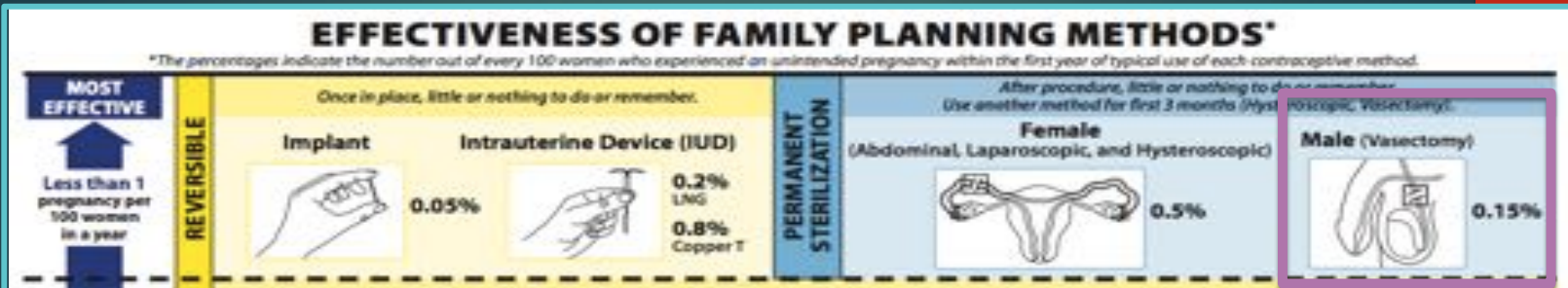
# Learning Objectives

- ▶ Describe the mechanism of action and effectiveness of contraceptive methods
- ▶ Counsel the patient regarding the benefits, risks and use for each contraceptive method
- ▶ Describe barriers to effective contraceptive use and to the reduction of unintended pregnancy
- ▶ Describe the methods of male and female surgical sterilization
- ▶ Prerequisites:
  - ▶ NONE
- ▶ See also – for closely related topics
  - ▶ FLAME LECTURE 149A – Combined hormonal contraceptives
  - ▶ FLAME LECTURE 150 – Barrier contraceptive methods
  - ▶ FLAME LECTURE 151 – Depo-Provera for contraception
  - ▶ FLAME LECTURE 152 – Nexplanon
  - ▶ FLAME LECTURE 153 – Mirena IUD
  - ▶ FLAME LECTURE 154 – Paragard for contraception
  - ▶ FLAME LECTURE 156 – Female Sterilization

# VASECTOMY

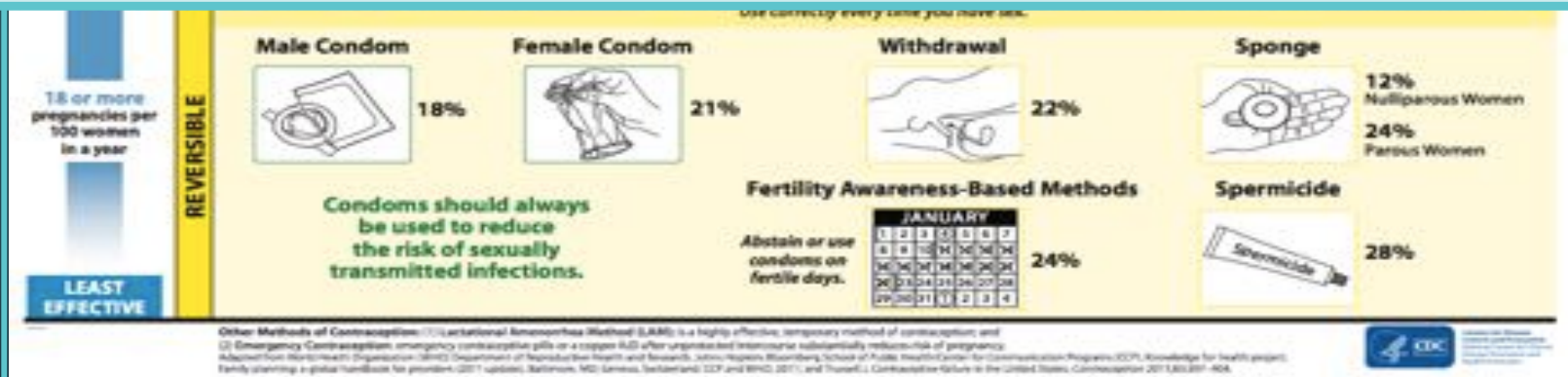
- ▶ It is a quick outpatient procedure (~15 minutes) with minimal risks
  - ▶ Works by surgically dividing the vas deferens, thus interrupting sperm delivery
- ▶ Most effective form of male contraception
  - ▶ The most common attempts at an oral contraceptive for men include using testosterone and progesterone, yet none are available currently
- ▶ Is a permanent form of contraception
  - ▶ Though, vasovasotomy (aka vasectomy reversal) is possible (see later)

# EFFECTIVENESS



## VASECTOMY

**Early Failure:** .3-9% failure in 1<sup>st</sup> 3-6 months (due to remnant sperm and/or recanalization)  
**Late Failure:** .04-.08% failure (presence of sperm after azospermia in 2 previous semen analysis)  
 Overall 1<sup>st</sup> year failure: 0.15-0.2% couples will experience a pregnancy



# ADVANTAGES

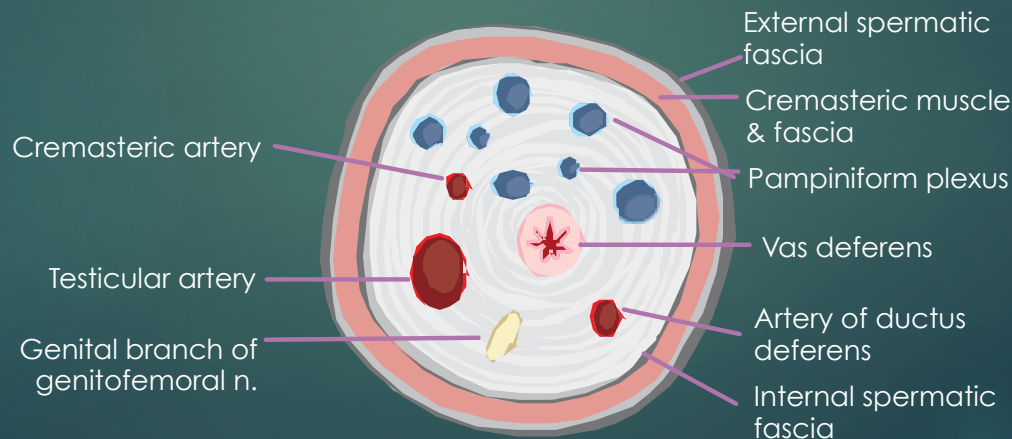
- ▶ **Very high efficacy**, especially if precaution taken during first 3 months, then stable failure rate forever
- ▶ Doesn't affect female physiology so poses no risk to woman's health, especially for couples where certain contraceptive methods are not suitable for the woman
- ▶ **Convenient**, quick, one-time procedure that then requires no action at time of intercourse
- ▶ **Safe procedure** with few complications or contraindications
- ▶ High upfront cost (up to \$1000, though often covered by insurance) but cost-effective in long run
- ▶ Few limitations in access, can be performed at outpatient/ambulatory surgical centers by urologist, general surgeon, or trained family practitioners

# DISADVANTAGES

- ▶ Permanent so patient should be certain about not wanting to father anymore children
  - ▶ If patient is uncertain, may request that a sample of his sperm be banked
- ▶ No protection against STIs
- ▶ High initial risk of pregnancy if precautions (back-up birth control method) not taken during first 3 months due to residual sperm in semen
- ▶ Prostate cancer risk: controversial evidence for possibility of vasectomy increasing risk of prostate cancer. Current understanding remains:
  - ▶ No overall increased risk for prostate cancer in patients with vasectomy
  - ▶ Small increased risk in high grade/lethal prostate cancer in patients with vasectomy
  - ▶ AUA guidelines: no need to perform prostate screening in pre-vasectomy counseling
- ▶ Two-fold increase in risk of kidney stones in men who have vasectomy young (<46 yo)

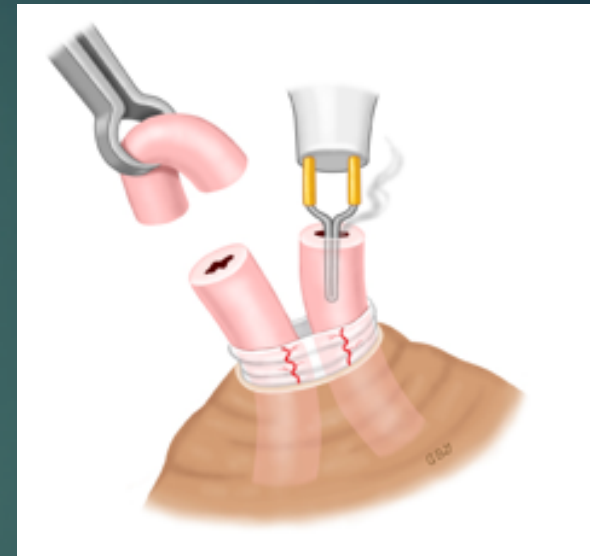
# ANATOMY

	Scrotum	Testes
Innervation	Ilioinguinal nerve, genital branches of genitofemoral nerve, perineal nerve, perineal branches of post. femoral cutaneous nerve	Ilioinguinal nerve & genital branches of genitofemoral nerve
Blood vessels	Anterior & posterior scrotal arteries	Testicular artery & pampiniform venous plexus
Lymph nodes	Superficial inguinal nodes	Para-aortic lymph nodes



# NO-SCALPEL TECHNIQUE

- ▶ Local anesthetic applied to scrotum
- ▶ Vas deferens palpated through scrotal tissue
- ▶ A single “key-hole” incision made in skin and VD pulled out of scrotum
- ▶ VD grasped with tubal ring clamp and cut
- ▶ Ends are sealed with electrocauterization inside tube
  - ▶ However, recanalization can still occur after this, thus, you can use *facial interposition* where the fascial tissue is pulled in between cauterized VD ends to provide another barrier
- ▶ Before closing, careful inspection of incision site to ensure all bleeding has been cauterized before closing. Hematoma formation greatly increases risk for chronic post-vasectomy pain





# FOLLOW-UP & COMPLICATIONS<sup>1-3</sup>

- ▶ **Semen Analysis:**
  - ▶ Performed three months following vasectomy and the patient should have had 20-30 post-vasectomy ejaculates to confirm azospermia
- ▶ **Complications:** Highly dependent on surgeon experience, though all complications are very rare
  - ▶ **Bleeding/Hematoma:** most common complication, can even necessitate reopening
    - ▶ Bleeding is usually from damaging veins of pampiniform plexus
    - ▶ Intraoperative bleeding should be monitored closely to make sure it has completely stopped before closing to prevent hematoma formation because hematomas can contribute to significant post-vasectomy pain
  - ▶ **Infection:** decreased risk with no-scalpel technique
  - ▶ **Pain:** 1-2% of men have chronic pain following vasectomy
    - ▶ Most commonly associated with chronic congestive epididymitis. Sperm and testicular fluid back up behind blocked VD, causing chronic ache in testicle
    - ▶ Management: NSAIDs first line, local nerve blocks or steroid injections, epididymectomy
  - ▶ **Sperm Granuloma:** Sperm are protected from immune system from blood-testis barrier. Vasectomy disrupts this and can result in spillage of sperm into surrounding tissue, causing highly inflammatory reaction
    - ▶ This reaction is normally asymptomatic though it can contribute to post-vasectomy pain as well

# VASECTOMY REVERSAL

- ▶ Strongest predictors for desire for reversal: change in marital status
- ▶ Microsurgical procedure that can be successful in about 50-70% of patients, however the longer the time interval between vasectomy and reversal, the less likelihood of success<sup>4</sup>

Interval following vasectomy	Patency rate (sperm in ejaculate)	Pregnancy rate after 24 months
< 3 years	95%	76%
3-8 years	88%	53%
9-14 years	79%	44%
> 15 years	71%	30%

# IMPORTANT LINKS / REFERENCES



1. UpToDate.com
2. [AUA Vasectomy Guidelines. 2012](#)
3. Griffin T, Toohar R, Nowakowski K, Lloyd M, Maddern G J  
Urol. 2005;174(1):29
4. Belker AM et al. Results of 1,469 microsurgical vasectomy  
reversals by the Vasovasostomy Study Group. J Urol.  
1991;145(3):505.