

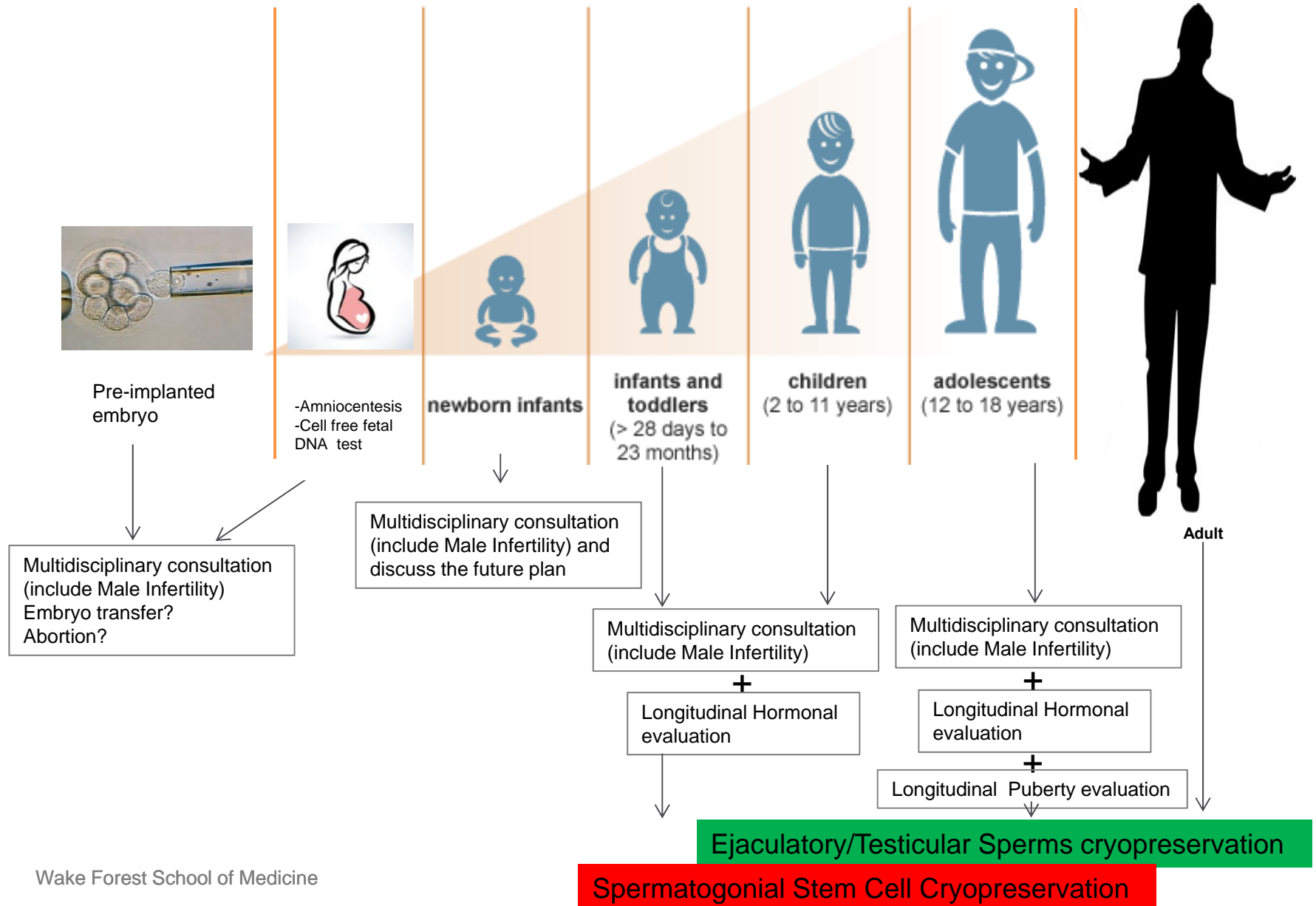


Early **Male** Fertility Preservation Program for **X** and **Y** Variations

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Assistant Professor of Urology & Regenerative Medicine



Fertility Preservation Consultation & Services



Testosterone therapy does **not** improve spermatogenesis and should **not** be used by men of reproductive age








Male Contraception

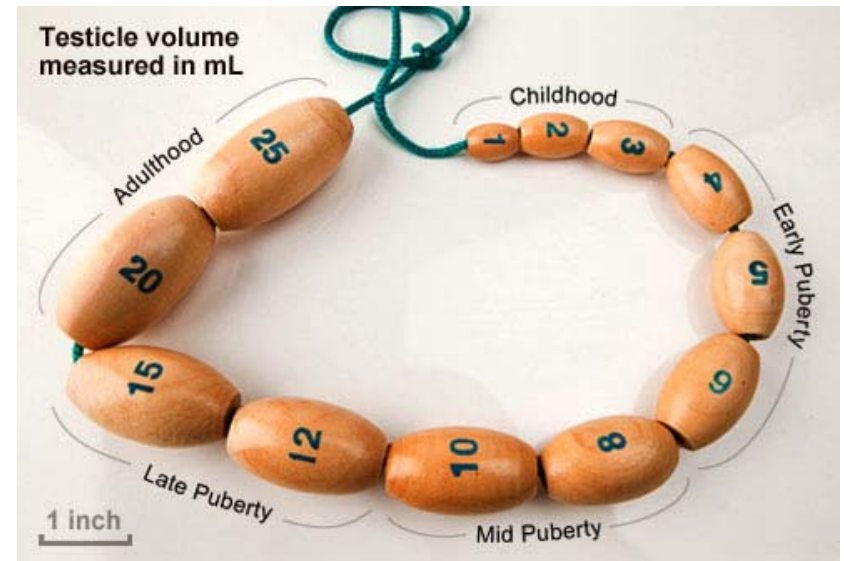
Initial Evaluation & Follow Up

- **Physical Examination to define the level of sexual maturity (Tanner stage)**
- **Endocrine Evaluation (Blood Tests)**
- **Special Ultrasound Imaging
(Novel non-invasive tool)**

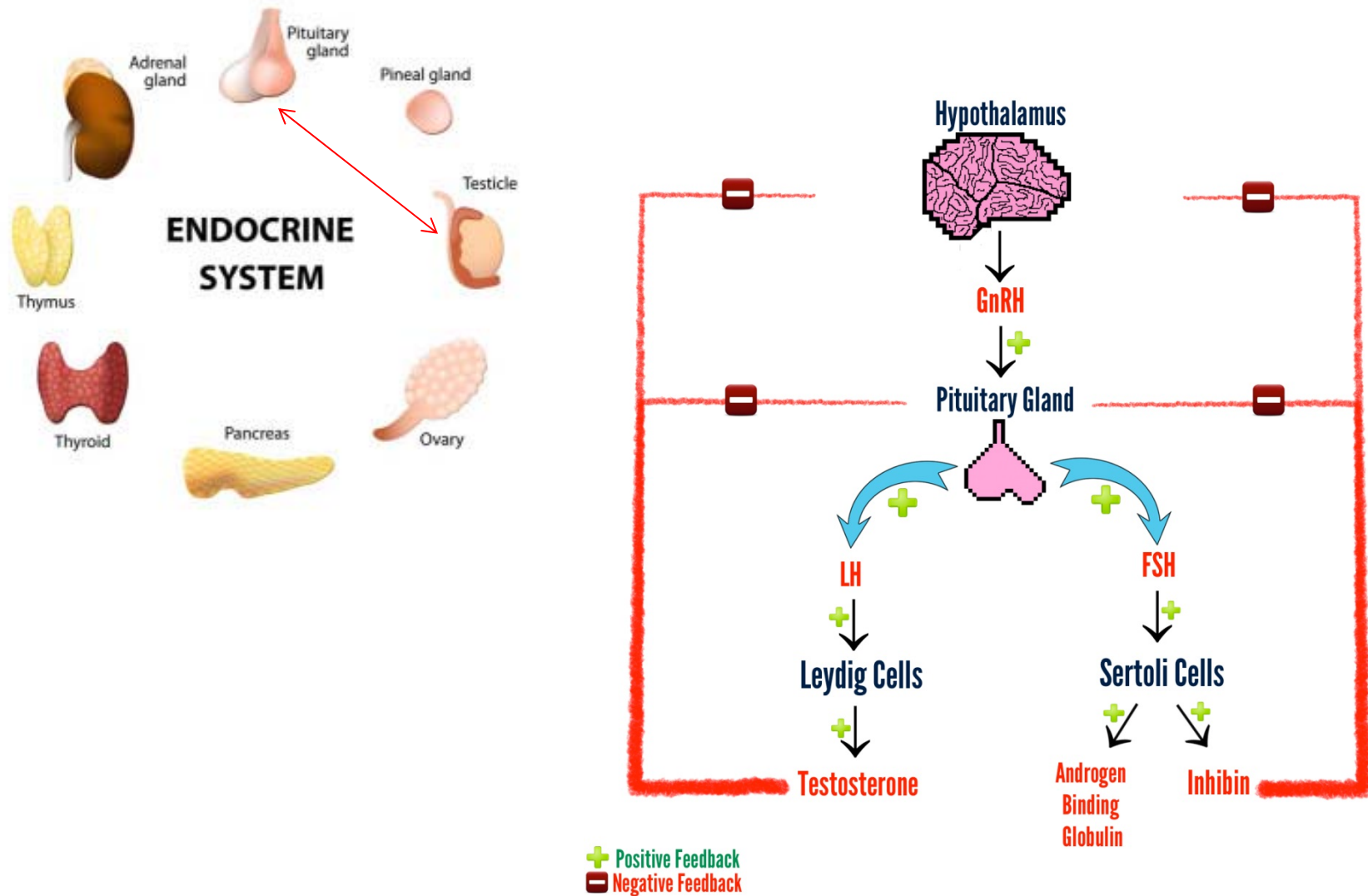
Physical Exam (sexual maturity)

Tanner Staging

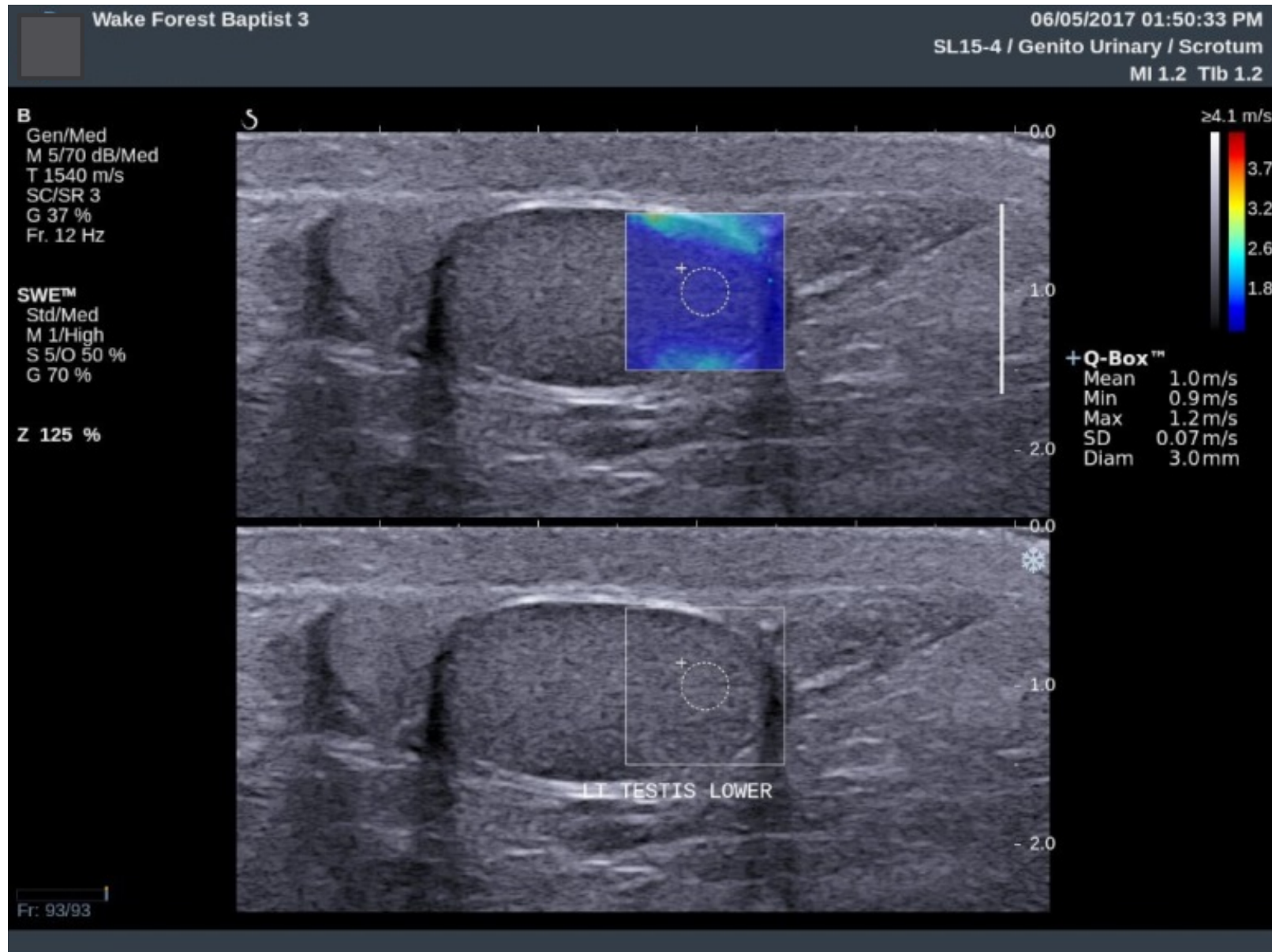
I		3 ≤2.5
II		4 2.5-3.2
III		10 3.6
IV		16 4.1-4.5
V		25 >4.5



Endocrine Evaluation (simple blood test)

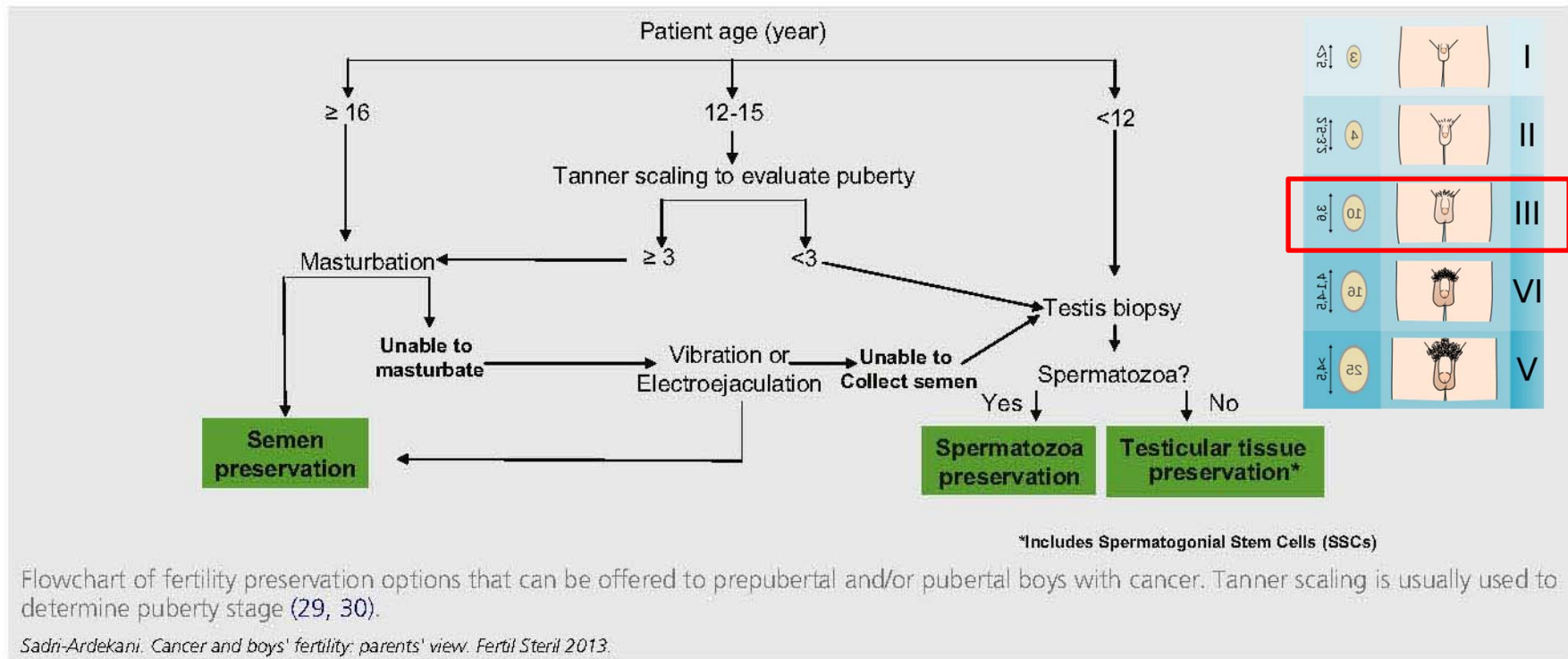


Special Elastography Ultrasound (stiffness; Fibrosis)

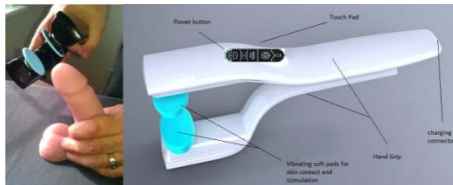


One Step Encounter Fertility Preservation

FIGURE 1



Viberec-X3



Wake Forest School of Medicine

FETRI CARE

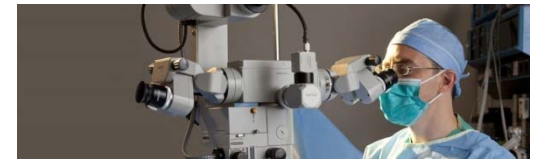


Electroejaculation (EEJ)

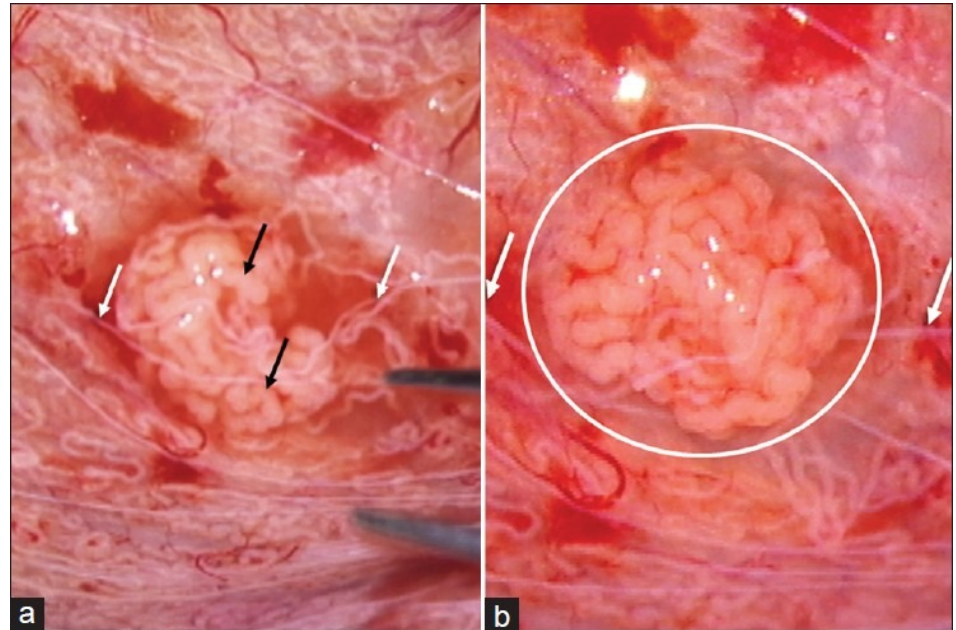
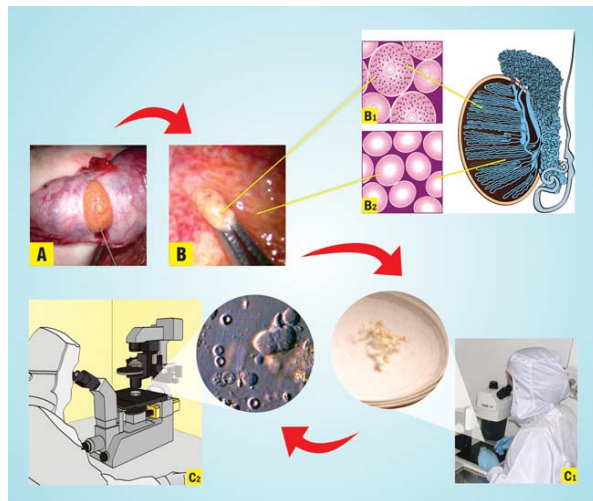
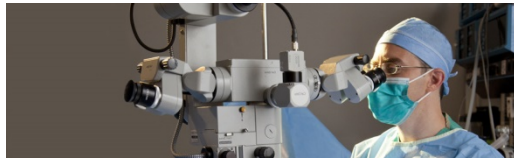


Sadri-Ardekani et al, *Fertility and Sterility* 2013

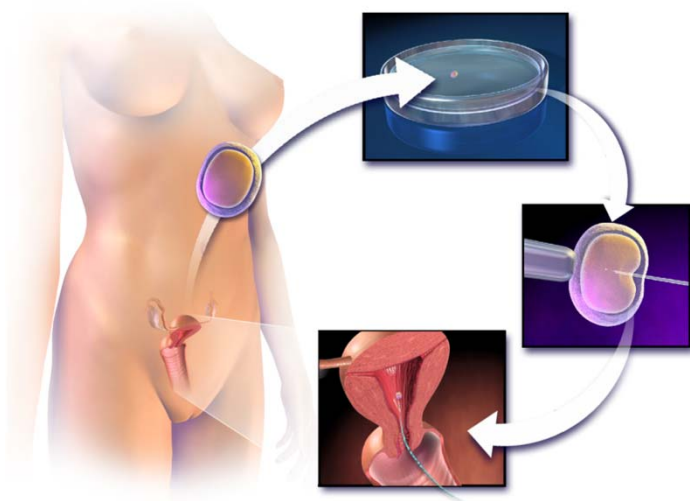
Surgery (Micro-TESE)



Microscopic Testicular Sperm Extraction (Micro-TESE)



In Vitro Fertilization (IVF) using stored sperms



Intra-cytoplasmic sperm injection (ICSI)



April 1991- Jan 1992

Overall Sperm Retrieval : 44%
Overall Live Birth Rate per ICSI cycle: 43%

Clinical Andrology 2011, EAU/ESAU Course Guidelines; Edited by L Björndahl, A Giwercman, H Tournaye and W Weidner

Medical and Surgical Management of Male Infertility 2014; Edited by Rizk, Aziz & Agarwal

Corona et al 2017, HRU

Sperms Yes or No!

- In around half of the patients (44%) chance of finding sperms



- What about the patients with **no** sperm?
 - < 16 year old*: 70% have Spermatogonial Stem Cell
 - > 24 year old**: 18% have Spermatogonial Stem Cell

Spermatogonial Stem Cell (SSC)

- **What is SSC?**

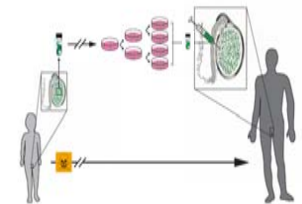
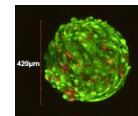
- A (Normal) boy after birth has **only SSC** (no sperm).
- After puberty (around age of 12), SSC will transform to Sperms.

- **Why SSC is important?**

- It is expected that:

Stored SSC from Klinefelter boys can be (potentially) transformed to sperms:

- in a laboratory dish (*In vitro*)
- by transplantation to the patient (*In vivo*)



Spermatogonial Stem Cell (SSC)

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Testicular Tissue Banking

for Fertility Preservation in
Boys and Men at Risk for Infertility



Supported by:
Wake Forest Institute for Regenerative Medicine \ Urology \ Pediatric Oncology
Blood and Marrow Transplant Lab \ Center for Reproductive Medicine
Pediatric Surgery \ Pathology \ Pediatric Endocrinology \ Medical Genetics
Radiology \ Hematology & Oncology

IRB 00021686

Cancer	Bilateral UDT	Klinefelter	Registry	denied
49*	23	4*	27	7

* One subject was Klinefelter and suffered from the cancer too.

IRB approval
March 2013

↓
Good Tissue Practice (GTP)
regulations

FDA registration
June/July 2014

First patient recruitment
07/22/2014




110 Patients
76 testicular biopsy, 27 registry and 7 denied)





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Testicular Tissue Banking
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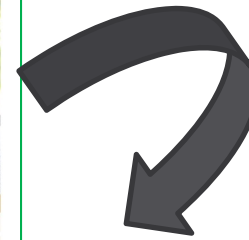


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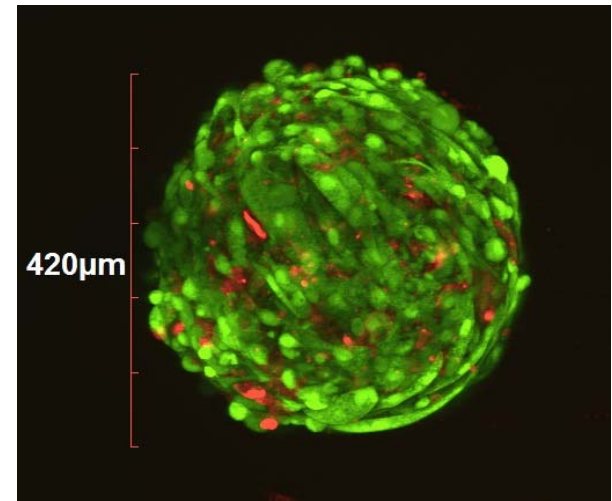
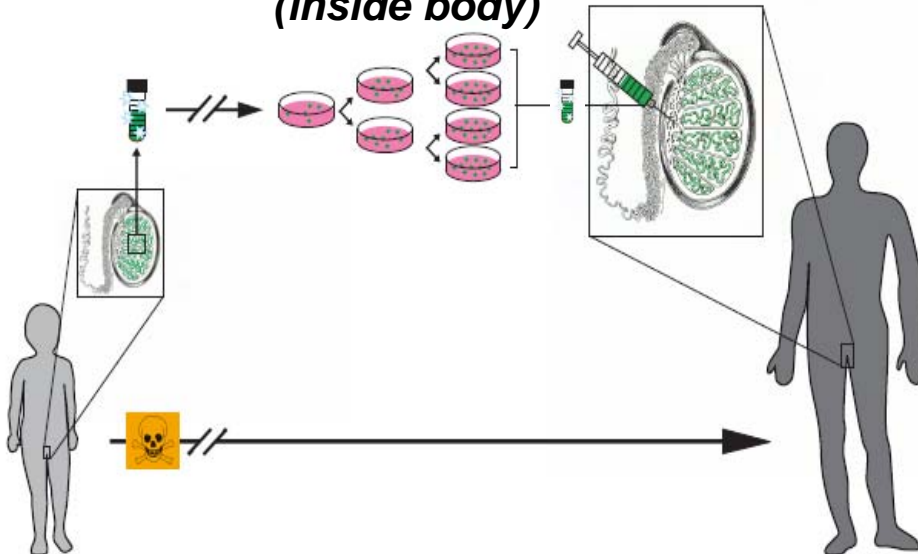
WF 000715K



In Vivo
(inside body)



In Vitro
(In a laboratory dish)



Referral

- Appointment for initial evaluation and consultation:

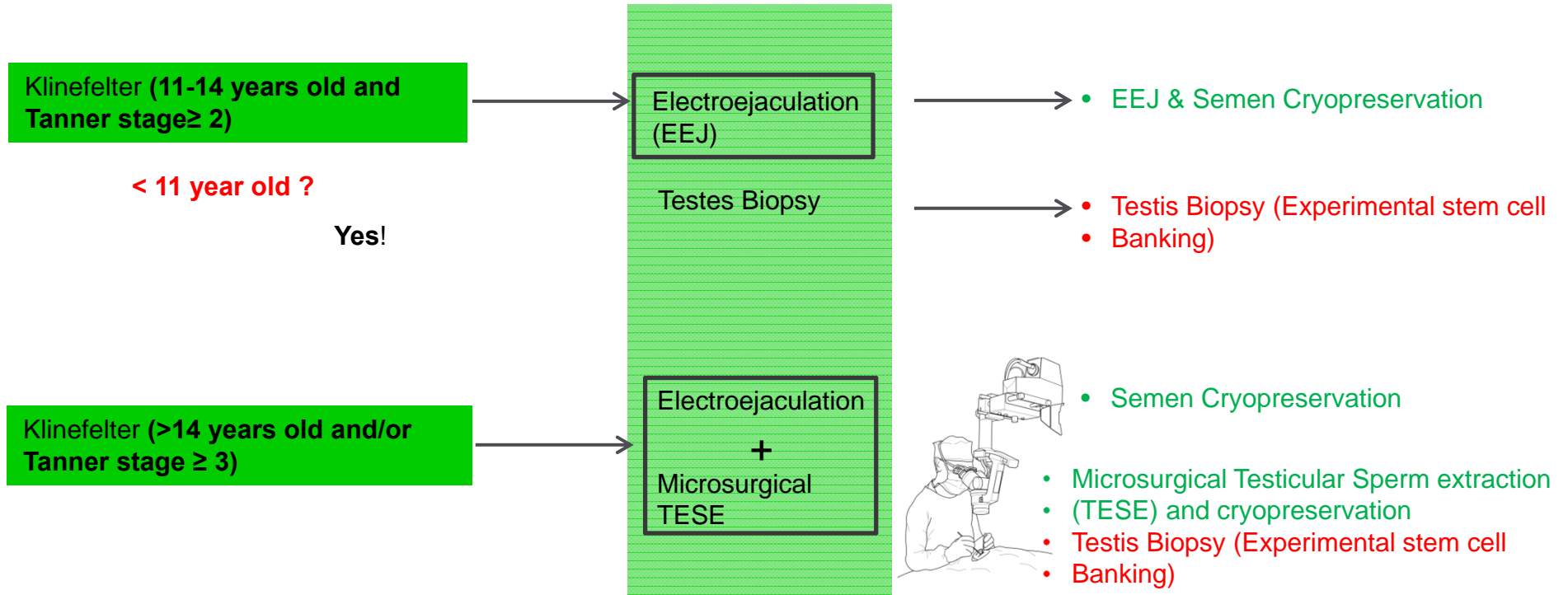
CALL 336.713.1493

- ✓ **Dr. Hooman Sadri-Ardekani**
- ✓ **Dr. Stanley Kogan**
- ✓ **Dr. Stuart Howards**



Medical Expense

Reimbursed
No charge



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