

Men's Health - a Focused Attention to Health and Wellbeing

The Department of Urology at Atrium Health Wake Forest Baptist in Winston-Salem, NC, is a major referral center that brings together the best of patient- and family-centered care and research. We offer expertise and the latest diagnostic techniques and treatments for a range of urologic conditions for children and adults. The urology service sees and treats patients in 15 locations.

We provide a focused attention to men's health and wellbeing, and our clinics offer a wide range of services and treatments. Expertise is provided by Ryan Terlecki, MD, who focuses on reconstructive urology, prosthetic urology for ED and male stress incontinence, and Peyronie's disease; Stuart Howards, MD, a nationally recognized expert in fertility; and Hooman Sadri, MD, PhD, who specializes in male reproductive medicine (andrology) and is a fellowship-trained male infertility clinician. Dr. Sadri directs the male fertility research program, establishing the spermatogonia stem cell bank for fertility preservation of high-risk boys and men, which has rapidly become one of the largest worldwide bio-banking systems in the field.

The **Men's Health Clinic** provides clinical services in the following areas:

Sexual Health: Dr. Terlecki is one of world's highest volume providers of penile implants for erectile restoration, with superior outcomes reported within the peer-reviewed literature. A full range of established and emerging treatment options from oral medications and injection therapies, to low-intensity shockwave therapy, are also provided.

Urinary Health: For men with BPH who have failed oral medications, a broad range of advanced therapies are available. Additionally, for those with stress urinary incontinence, we maintain the region's highest volume practice of anti-incontinence surgery with use of the male sling and artificial urinary sphincter.

Hormonal Health: Dr. Sadri oversees our Testosterone Replacement Clinic, which affords patients a personalized medicine approach to determine the optimal method for long-term hormonal management.

Cancer Screening: Within the Men's Health clinic, men are appropriately risk-stratified to determine their eligibility for prostate cancer screening with PSA and other biomarkers. Those found to be at risk may be referred for MRI evaluations to determine the need for biopsy. We also provide reconstructive surgery for those men found to have tumors involving the genitalia (i.e., penis, scrotum), as well as radical orchiectomy for initial diagnosis of testicular tumors with consideration of placement of testicular prostheses. For those found to have tumors of the kidney, bladder, or prostate, expedited care is provided by the oncology team. The Wake Forest Comprehensive Cancer Center is the only National Cancer Institute-designated cancer center in the region, providing the most advanced and personalized care for patients.

The **Andrology Clinic**, led by Drs. Sadri and Stuart Howards, provides services in the following areas:

* Medical and surgical -- micro testicular sperm extraction (TESE) and vas reversal -- and assisted reproductive technology treatments for infertile men

*Penile vibration stimulation and electro ejaculation for spinal cord injury and other anejaculation patients such as diabetics or after retroperitoneal lymph node dissection

* Fertility Preservation Program (clinical and experimental) for boys and men at risk of future infertility due to oncology/hematology, undescended testes and Klinefelter syndrome. Wake Forest is a national referral center via the Association for X and Y Variations

* Various testosterone replacement therapy (TRT) such as oral, nasal, and injections of testosterone and non-TRT options such as hCG, aromatase inhibitor and follicle-stimulating hormone treatment for hypogonadotropic patients of all ages, from peri-puberty to geriatrics

* First and only US center to offer Round Spermatozoa Injection (ROSI) to treat TESE negative infertile men who are eligible

* Hormonal management of transgender male patients (female to male transition)

* Medical treatments for erectile dysfunction and pre-mature ejaculation such as oral medications, vacuum pumps and penile injection

Related Clinical Trials of Interest:

***Experimental Round Spermatozoa Injection (ROSI) to Treat Infertile Couples – PI: Hooman Sadri, MD**

To evaluate if special types of cells called round spermatozoa can be gathered from men with non-obstructive azoospermia and used to reliably and effectively create pregnancy with a procedure called round spermatozoa injection, a process similar to in vitro fertilization.

***Artificial Urinary Sphincter Clinical Outcomes - PI: Ryan Terlecki, MD**

Observe how well the AMS 800 Artificial Urinary Sphincter fixes urinary incontinence in men who have a history of radical prostatectomy with severe urinary incontinence.

***RAR: Prospective trial evaluating return to continence and potency following radical prostatectomy using umbilical cord allograft - PI: Ashok K. Hemal, MD**

To determine effectiveness of using human umbilical cord allograft to help improve return to erectile function and bladder control in patients following robot-assisted radical prostatectomy.

Bioengineered tissue constructs for damaged penile corpora - PI: Ryan Terlecki, MD

To evaluate the safety of autologous engineered corpora cavernosa + albuginea constructs for treatment of complex penile deformities. Autologous endothelial and smooth muscle cells, obtained from enrolled subjects' corpora cavernosa biopsies, will be cultured, expanded in vitro and used to create autologous bioengineered constructs.

Tissue engineered urethras for stricture disease - Lab-engineered tissue is being used to treat urethral strictures in patients with lab-engineered tissue. Autologous urothelial and smooth muscle cells will be obtained from patients and culture expanded in vitro to create autologous urethral constructs.

Translational Research of Interest

- Whole testis cryopreservation for re-implantation

- Human hypothalamus and pituitary organoids formation (hypothalamus,-pituitary-testes axis modeling)
- Modeling pathogenesis and potential intervention of emerging sexually transmitted viruses using human 3D testicular organoids (ZIKA, EBOLA, SARS-CoV2)
- Selection of spermatid like cells in differentiated human 3D testes organoids and testing their fertility potential
- Transplantation of in vitro propagated mouse Klinefelter syndrome spermatogonia stem cell to produce normal sperm
- Testicular tissue banking from boys and men at risk of infertility; stability of long term stored spermatogonial stem cells
- Determination of normal range values for testicular stiffness in the healthy pediatric population (elastography ultrasound)