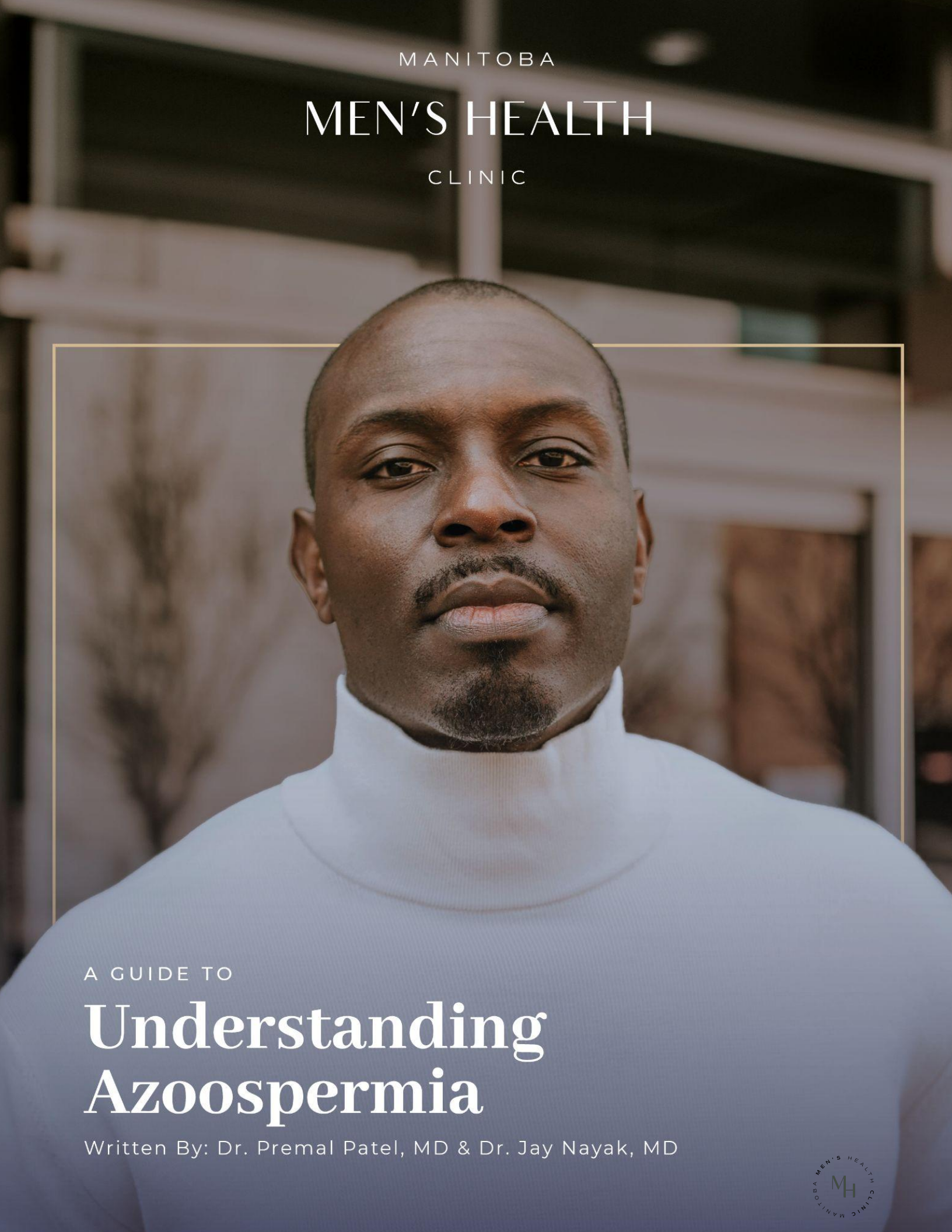
MANITOBA

MEN'S HEALTH

CLINIC



A GUIDE TO

Understanding Azoospermia

Written By: Dr. Premal Patel, MD & Dr. Jay Nayak, MD

Let's Talk About Azoospermia.
What Causes it and Your Treatment Options at MHC

Authors: Dr. Premal Patel, MD & Dr. Jay Nayak, MD

How Common is Male Infertility?

Male infertility is more common than you might think. It's defined as a couple's inability to conceive after a year of regular unprotected intercourse. It affects nearly 1 in 6 couples, which is about 15% of them. Interestingly, male factors contribute to about half of all infertility cases. But remember, fertility varies from person to person, so some individuals might face more significant challenges than others.

What's Behind Azoospermia?

Azoospermia, the absence of sperm in the ejaculate, can be caused by various factors:

Obstructive Azoospermia (OA) – This happens when there's a physical blockage preventing sperm from reaching the semen. It can be due to congenital anomalies or blockages in the reproductive tract, such as issues with the vas deferens, cysts on the epididymis, or obstructed ejaculatory ducts. Previous surgeries like vasectomies or hernia corrections can also lead to scarring or blockages. Inflammatory conditions can play a role too.

Non-Obstructive Azoospermia (NOA) – This type is about difficulties in sperm production. It can be linked to genetic conditions that affect sperm production, undescended testicles, testicular trauma, or past radiation and chemotherapy treatments. Hormonal imbalances like hypogonadotropic hypogonadism can disrupt the hormonal signals needed for sperm production.

To figure out the specific cause of azoospermia, you'll need a thorough evaluation involving a physical exam, hormone blood tests, genetic tests, and sometimes imaging studies.

How to Tell Obstructive from Non-Obstructive Azoospermia?

Men's Health Clinic has various ways to distinguish between obstructive and non-obstructive azoospermia. We often start with a physical examination, feeling for any obstructions or structural issues. Imaging studies like transrectal ultrasounds (TRUS) can give us a closer look at structures like the seminal vesicles. We might also run hormonal tests and semen analyses to check hormone levels like follicle-stimulating hormone (FSH), luteinizing hormone (LH), and testosterone. Abnormal results often point toward non-obstructive azoospermia, especially if FSH is greater than 8. In some cases, a testicular biopsy or Microsurgical Testicular Sperm Extraction (MicroTESE) may be needed to directly examine testicular tissue, providing more insight into sperm production and the underlying causes.

Treatment Options for Non-Obstructive Azoospermia (NOA)

NOA typically presents with elevated FSH levels and smaller testicle size. In most cases, a Microsurgical Testicular Sperm Extraction (MicroTESE) is recommended. MicroTESE is a highly specialized procedure where both testicles are carefully searched under an operating microscope to find sperm. The chance of finding sperm during MicroTESE is around 50%. Sperm retrieved through MicroTESE can only be used for in-vitro fertilization.

The procedure is performed under intravenous sedation and takes 2-3 hours. Risks include bleeding, infection, and temporary decrease in testicular size. Testosterone levels may drop initially but usually recover after a few months.

Predicting Sperm Retrieval Success

The success rate of sperm retrieval through MicroTESE for men with NOA is roughly 50%.

Before the procedure, we may recommend additional investigations:

> **Testicular Biopsy** – A small piece of testicular tissue is sent for analysis. This can provide more accurate predictions of MicroTESE success, with results indicating a 33% to 94% chance of sperm retrieval.

Fresh vs. Frozen MicroTESE?

Choosing between fresh and frozen Microsurgical Testicular Sperm Extraction (MicroTESE) depends on various factors and individual circumstances.

> **Fresh MicroTESE** –Sperm is retrieved directly from the testicles just before the IVF/ICSI cycle. It's immediately available and doesn't require freezing. This can result in potentially higher quality sperm, better motility, and viability. However, it's limited to the same IVF/ICSI cycle, so coordination with the female partner's cycle is needed. If retrieval is unsuccessful, an alternative approach is necessary.

> **Frozen MicroTESE** – Sperm retrieved is cryopreserved (frozen) for future IVF/ICSI cycles. It offers flexibility in scheduling and doesn't need coordination with the female partner's cycle. However, sperm quality may be affected due to freezing and thawing, and there's an extra cost for cryopreservation and storage.

The choice depends on IVF cycle timing, MicroTESE success rates, and individual preferences. Our clinic is one of the few capable of performing fresh MicroTESE, so discussing your options with our staff is crucial to make the right decision.

Treatment Options for Obstructive Azoospermia (OA)

Treatment options for obstructive azoospermia depend on the location and nature of the blockage. Common treatments include:

- **Vasoepididymostomy**: It bypasses an obstruction in the epididymis.
- **Sperm Extraction**: Sperm can be extracted during the reconstruction if the couple wishes to proceed with IVF/ICSI.

Risks of reconstruction include bleeding, infection, inability to reconstruct, hydrocele (swelling around the testicle), sperm not returning to the ejaculate, early or delayed failure, pain, inability to conceive, and anesthetic risks. The procedure is outpatient, with no heavy lifting for 2 weeks. It may take 3-6 months, and sometimes up to a year, to see sperm in the ejaculate.