

Male Infertility

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THE STORY IN ONE SENTENCE

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“When a man's body cannot make, store, move, or deliver enough healthy sperm to make a baby. Always start with a semen analysis to see what is broken.”

Normal anatomy — the body's job

Making a baby on the man's side needs four steps working in order: the brain sends hormone signals, the testicles make sperm and testosterone, the sperm travel through tubes to grow strong, and then the sperm shoot out during sex. Keep that picture in your head, because every weird finding is just one of those four steps failing.

BODY'S JOB

The hypothalamus (a control center deep in the brain) releases GnRH (a hormone that tells the next step to wake up). That signal travels down to the pituitary (another brain control center just below) which then releases LH and FSH (two hormones that tell the testicles to work). LH tells the testicles to make testosterone. FSH tells the testicles to make sperm. Inside the testicles, tiny factories called seminiferous tubules turn on and churn out millions of sperm every day. The sperm are not strong swimmers yet, so they travel into the epididymis (a coiled tube on top of each testicle) where they spend two weeks maturing and learning to swim. When the man has sex, the sperm move up through the vas deferens (a long tube) and mix with fluid from the prostate and seminal vesicles (two glands that add sugar and chemicals to feed the sperm). Muscles then squeeze everything out through the urethra. If all four steps work, healthy sperm reach the egg and pregnancy happens.

1. Brain: the hypothalamus releases GnRH, then the pituitary releases LH and FSH
2. Testicles: LH makes testosterone, FSH makes sperm in the seminiferous tubules

3. Tubes: sperm mature in the epididymis, then travel through the vas deferens
4. Delivery: sperm mix with fluid from the prostate and seminal vesicles, then shoot out through the urethra during sex

What breaks

Usually one broken thing upstream explains why there is no pregnancy. It can break before the testicles (brain does not send the hormone signal), inside the testicles (damage from heat, genes, or infection), or after the testicles (tubes are blocked or sperm go backward).

CLINICAL TERM

Pre-testicular (the hypothalamus or pituitary does not release GnRH, LH, or FSH—often from a brain tumor, Kallmann syndrome, or too much prolactin). Testicular (the testicles themselves cannot make sperm—varicocele causes blood to pool and overheat the testicles, Klinefelter syndrome means an extra X chromosome, Y-chromosome microdeletions erase the sperm-making gene, mumps or STI infection scars the tubules, undescended testicles from birth, chemotherapy or radiation kills sperm cells, or a tumor). Post-testicular (sperm are made but cannot get out—vas deferens is missing from birth in CBAVD, infection or surgery blocks the epididymis, retrograde ejaculation sends sperm backward into the bladder from diabetes or prostate surgery, or erectile dysfunction stops delivery). That break does not stay local. The downstream signal you will actually see is no pregnancy after one year of trying. Read all the weird findings (low sperm count, no sperm at all, normal count but poor swimmers, normal semen but sperm in the urine) backwards from there—they all point to this one broken thing upstream.

How the body compensates

The body tries to keep making sperm and testosterone even when one step is broken, so hormone levels and exam findings can look almost normal for a while. The job is to catch the broken step early, because once sperm production stops completely or the tubes scar shut, the window to fix it closes.

1. If the brain signal is low, the testicles shrink slowly and testosterone drops, but the man may feel fine for months.
2. If a varicocele overheats the testicles, sperm count falls gradually—first the count is a little low, then very low, then zero—so early repair can save fertility.
3. If one testicle is damaged, the other testicle tries to make extra sperm and testosterone to keep levels steady, so blood tests may look normal even though total production is half.
4. If the tubes are blocked, the testicles keep making sperm anyway, but the sperm pile up and the testicle swells or the body reabsorbs them—pressure can damage the factory over time.

5. If sperm go backward into the bladder (retrograde ejaculation), the semen looks normal in amount and the man does not know anything is wrong until a lab checks a urine sample after orgasm and finds sperm there.
6. The danger is missing the diagnosis for years—by the time the couple sees a doctor, the testicles may be too small, the tubes too scarred, or the genetic cause (Klinefelter, Y deletion) may have caused other problems like weak bones, diabetes, or heart disease.

Domino effect

1. A couple tries for one year to get pregnant with regular sex and no birth control, but no pregnancy happens. — Pregnancy needs millions of healthy sperm to reach the egg. If the man's body is not making enough sperm, the sperm do not swim well, the tubes are blocked, or the sperm go the wrong way, then the egg never gets fertilized.
2. The doctor orders a semen analysis—the lab counts sperm, checks how they swim, and looks at their shape. — That one test shows which step is broken. Low count or no sperm? Problem is before or inside the testicles. Normal count but sperm do not swim or have weird shapes? Problem is inside the testicles or in the environment (heat, toxins). Normal semen but no sperm? Tubes are blocked. Normal semen but sperm in the urine after sex? Retrograde ejaculation.
3. If the semen analysis is abnormal, the next step is to trace the problem back to its source. — The doctor checks FSH and LH (brain signals), testosterone (testicle output), and does a physical exam (size of testicles, feeling for a varicocele or missing vas deferens). High FSH with small testicles means the testicles are failing. Low LH and FSH means the brain is not sending the signal. A bag of worms feeling in the scrotum is a varicocele.
4. If the testicles are small and FSH is high, the doctor checks a karyotype (picture of chromosomes) and Y-chromosome microdeletion panel. — Klinefelter syndrome (XXY) causes small firm testicles, no sperm, low testosterone, tall height, and higher risk of diabetes and breast cancer. Y deletions erase the gene that makes sperm. Both are permanent and need donor sperm or special retrieval techniques, and the man needs lifelong testosterone and heart/bone monitoring.
5. If a varicocele is found, the doctor can tie off the swollen vein to cool the testicles and let sperm production recover. — A varicocele is a tangled, swollen vein in the scrotum that traps warm blood around the testicle like a hot water bottle. Heat kills sperm-making cells. Fixing the varicocele drops the temperature, and sperm count often goes up in three to six months.

6. If the tubes are blocked but the testicles make sperm, the doctor can retrieve sperm directly from the testicle or epididymis and use IVF (in vitro fertilization) to make a baby. — Blocked tubes (from missing vas deferens, infection, or surgery) stop sperm from getting out, but the testicles still make them. A needle or small surgery pulls sperm out, and the lab injects one sperm into each egg to start a pregnancy.
7. If sperm go backward into the bladder, the doctor can give medicine to tighten the bladder neck, or collect sperm from the urine after sex and use them for IVF. — Retrograde ejaculation happens when the muscle at the bladder neck does not close during orgasm (often after prostate surgery or from diabetes nerve damage). The sperm are healthy—they just go the wrong way. Medicine or sperm retrieval from urine can fix it.
8. If no cause is found and the semen analysis is only a little abnormal, the couple can try IUI (intrauterine insemination) or IVF to boost the chance of pregnancy. — Sometimes the sperm count is low or the swimmers are slow, but no clear cause is found. Washing and concentrating the sperm, then placing them directly in the uterus (IUI) or injecting one into each egg (IVF), can overcome the mild problem and lead to a healthy baby.

Symptoms · what the patient feels, and why

- Low sperm count (fewer than 15 million sperm per milliliter of semen): The testicles may not be making enough sperm because of hormone imbalances (signals from the pituitary gland in the brain are too low), damage from past infections or injury, varicoceles (swollen veins in the scrotum that overheat the testicles like a heating pad left on too long), or genetic problems that affect how sperm are built.
- Poor sperm movement (fewer than 40% of sperm swim forward): Sperm need to swim through the cervix and up into the fallopian tubes to reach the egg. If the tail structure is damaged by infections, high heat in the scrotum, or chemical exposures (like smoking or certain medications), the sperm cannot swim well enough to make the journey.
- Abnormal sperm shape (fewer than 4% have a normal oval head and single tail): Sperm are built inside the testicles over about 72 days. If DNA is damaged by oxidative stress (harmful molecules that act like rust inside cells), infections, heat, or toxins during that building time, the sperm come out misshapen and cannot penetrate the egg's outer shell.
- Small or soft testicles (less than 4 cm long, or softer than normal firm feel): The testicles shrink when they are not making sperm normally. This can happen with low testosterone (the main male hormone made by the testicles), Klinefelter syndrome (a genetic condition where boys are born with an extra X chromosome and testicles do not develop fully), mumps infection in the past that damaged testicular tissue, or long-term steroid use that shuts down the testicle's own production.

- Visible or palpable varicocele (swollen, twisted veins above the testicle, usually on the left side, that feel like a bag of worms): Varicoceles happen when the valves inside the veins that drain blood from the testicle fail, so blood pools and the vein swells. The pooled blood raises the temperature in the scrotum by 1–2 degrees, which is enough to slow sperm production and damage sperm DNA because sperm-making cells work best a few degrees cooler than core body temperature.
- Absent vas deferens on physical exam (the tube that carries sperm from the testicle to the urethra cannot be felt): Some men are born without the vas deferens on one or both sides, most often because they carry mutations in the CFTR gene (the same gene that causes cystic fibrosis). Without the vas, sperm made in the testicle have no highway to reach the semen, so the ejaculate has no sperm even though the testicles are making them.
- No semen comes out during ejaculation (dry orgasm): This is called retrograde ejaculation. During orgasm, the bladder neck (the muscular door at the base of the bladder) normally squeezes shut so semen goes forward out the penis. If that muscle is weak or damaged—often from diabetes (which harms the nerves that control the muscle), prostate surgery, or certain blood-pressure medicines—the door stays open and semen flows backward into the bladder instead.
- Reduced sexual desire or difficulty getting or keeping an erection: Low testosterone (made by the testicles and controlled by signals from the pituitary gland in the brain) reduces libido and makes erections weaker. Stress, depression, and some medications (like antidepressants and blood-pressure drugs) can also lower desire and block the blood-vessel relaxation needed for a firm erection.

Focused exam

- Semen analysis: fewer than 15 million sperm per milliliter, less than 40% moving forward, or fewer than 4% normal-shaped sperm (WHO 2010 reference values): This test is the first look at whether the man can make healthy sperm. A low count, slow swimmers, or weird shapes point to a problem in the testicles (the sperm factory), the tubes that carry sperm out, or the hormones that tell the testicles what to do. Without this test, you are guessing.
- Small testicles (less than 4 cm long or less than 15 mL in volume on an orchidometer): The testicles are the factory where sperm is made. Small testicles mean the factory is broken or never built right. This points to Klinefelter syndrome (an extra X chromosome), old infection (mumps orchitis), or a hormone problem that started before puberty (low signals from the brain to the testicles).

- **Varicocele:** a cluster of swollen, twisted veins above the left testicle (feels like a bag of worms when you press on it): Blood pools in these bad veins and heats up the testicle. Extra heat kills the cells inside the testicle that make sperm. Fixing the veins (by surgery or blocking them with a tiny tube) can lower the temperature and let sperm production restart.
- **Absence of the vas deferens** (the rubbery tube you feel running up from the testicle toward the belly): No tube means sperm cannot leave the testicle, even if the factory is making plenty. This is usually a birth defect linked to the CFTR gene (the same gene that causes cystic fibrosis). Sperm is trapped inside and never reaches the semen.
- **Blood hormone levels:** testosterone less than 300 ng/dL or FSH (follicle-stimulating hormone) higher than 7.6 mIU/mL: FSH is the brain's order to the testicles to make sperm. High FSH means the brain is yelling louder because the testicles are not listening (primary testicular failure). Low testosterone means the brain is not sending strong enough orders in the first place (hypogonadotropic hypogonadism). Either way, the problem is a broken conversation between the brain and the testicles.
- **History of mumps after puberty, direct trauma to the groin, chemotherapy, radiation to the pelvis, or hernia repair surgery:** These events can permanently damage the testicles or cut the tubes that carry sperm. Mumps virus attacks the testicles and kills sperm-making cells. Chemotherapy poisons dividing cells, including the ones that make sperm. Hernia surgery can accidentally tie off or scar the vas deferens. The body cannot rebuild a destroyed sperm factory the way it heals a cut on the skin.

Diagnostics · every test answers a question

- **Semen analysis** (two samples, 2–7 days apart, after 2–5 days of no ejaculation) → Does the man make enough healthy sperm, and can the sperm move forward and look normal?
- **Serum FSH** (follicle-stimulating hormone) → Is the brain sending strong signals to the testicles to make sperm, and are the testicles responding?
- **Serum testosterone** (total, morning sample) → Are the testicles making the male hormone that drives sex function and sperm production?
- **Serum LH** (luteinizing hormone) → Is the brain telling the testicles to make testosterone?
- **Scrotal ultrasound with Doppler** → Are the testicles the right size, are the tubes open, and is there a varicocele or other structural problem?
- **Post-ejaculate urine analysis** (if semen volume is very low or zero) → Is the sperm going backward into the bladder instead of out the penis?
- **Karyotype** (chromosome test) and **Y-chromosome microdeletion panel** (if sperm count is very low or zero) → Does the man have a genetic problem that stops sperm production?

- CFTR gene mutation screening (if the vas deferens is absent on both sides) → Does the man carry mutations in the cystic fibrosis gene that caused the tubes to never form?

Treatment logic

- Varicocele repair (surgical ligation by microscope or percutaneous embolization by interventional radiology) if varicocele is present and sperm count is low → Surgery ties off or blocks the swollen veins so blood stops pooling and heating up the testicle. Cooler temperature lets the sperm-making cells recover. Sperm count, movement, and shape often improve over 3 to 6 months. Pregnancy rates go up by 30 to 40 percent after repair in couples who were not getting pregnant before.
- Clomiphene citrate (25–50 mg by mouth every other day) or hCG injections (subcutaneous, 1,000–2,000 units three times per week) if testosterone or LH/FSH are low → Clomiphene blocks estrogen at the hypothalamus (the brain's thermostat for hormones), which makes the brain send more GnRH (gonadotropin-releasing hormone). That pushes the pituitary to release more LH and FSH, which tells the testicles to make testosterone and sperm. hCG mimics LH directly and kicks the testicles into gear. Both restart the hormone conversation between the brain and the testicles.
- Testicular sperm extraction (TESE or micro-TESE) with intracytoplasmic sperm injection (ICSI) if tubes are blocked or absent, or if the testicles make very few sperm → A urologist opens the testicle under a microscope and pulls out tiny bits of tissue that contain sperm. The sperm is then injected directly into an egg in the lab (ICSI) to make an embryo for IVF. This bypasses blocked or missing tubes entirely and can work even when only a few sperm exist inside the testicle.
- Intrauterine insemination (IUI) or in vitro fertilization (IVF with or without ICSI) if sperm count is low but some healthy sperm are present in the ejaculate → IUI washes and concentrates the healthiest sperm from the ejaculate and injects it directly into the woman's uterus at ovulation, giving sperm a head start. IVF mixes sperm and eggs in a dish in the lab. ICSI injects one sperm into one egg. These methods work around poor sperm movement or mild count problems and raise the chance of pregnancy without fixing the testicle.
- Lifestyle modification: stop smoking, avoid hot tubs and saunas, lose weight if BMI is over 30, cut alcohol to fewer than 5 drinks per week, and avoid tight underwear → Smoking and heat poison sperm-making cells and slow sperm movement. Obesity raises estrogen (from fat tissue converting testosterone) and lowers testosterone and sperm count. Alcohol in high amounts damages DNA in sperm. Fixing these removes the toxins and heat stress and can raise sperm count by 10 to 50 percent over 3 months (one full sperm-making cycle is 74 days).

- Electroejaculation or penile vibratory stimulation (if the man cannot ejaculate because of spinal cord injury or nerve damage) → A special vibrator or a rectal probe sends controlled electricity to nerves that trigger ejaculation. This collects semen that can be used for IUI or IVF. The testicles work fine; the signal to push the sperm out is broken.
- Treatment of retrograde ejaculation: pseudoephedrine (60 mg by mouth 4 times daily) or imipramine (25–50 mg by mouth daily) to tighten the bladder neck, or sperm retrieval from post-ejaculate urine for IUI → Pseudoephedrine and imipramine squeeze the muscle at the bladder neck so sperm flows forward out the penis instead of backward into the bladder. If medicine does not work, sperm can be pulled from the urine (which is mixed with a buffer to protect sperm from acid) right after ejaculation and used for IUI or IVF. Either way, this redirects or rescues sperm that is being made but going the wrong way.

Medications

Clomiphene citrate · Selective estrogen receptor modulator (SERM)

Clomiphene blocks estrogen (a hormone) from reaching sensors in the hypothalamus (the brain's control center for hormones). When those sensors think estrogen is low, they send more GnRH (a signal hormone) to the pituitary gland, which then releases more LH and FSH (hormones that tell the testicles to make testosterone and sperm). This medicine is used when a man's brain isn't sending enough signal to his testicles, causing low testosterone and low sperm count.

1. Clomiphene sits on estrogen receptors in the hypothalamus and blocks estrogen from attaching.
2. The hypothalamus 'thinks' estrogen is low, so it releases more GnRH (gonadotropin-releasing hormone).
3. GnRH travels to the pituitary gland and tells it to pump out more LH (luteinizing hormone) and FSH (follicle-stimulating hormone).
4. LH signals the testicles to make more testosterone.
5. FSH signals the testicles to make more sperm.
6. Over weeks to months, testosterone and sperm production may rise if the testicles can respond.

SAFETY WATCH

Mood changes or irritability · Visual blurring or seeing spots (stop the medicine and call your doctor right away) · Breast tenderness · Weight gain · Headache · Not approved by the FDA for male infertility, but widely used off-label based on guideline evidence

Human chorionic gonadotropin (hCG) · Hormone injection (mimics LH)

hCG is a hormone injection that acts exactly like LH (luteinizing hormone), the natural signal from the pituitary gland that tells the testicles to make testosterone. It is used when the pituitary isn't releasing enough LH—often in men with hypogonadotropic hypogonadism (a condition where the brain's hormone signals are too low). By giving hCG, you replace the missing signal and restart testosterone and sperm production.

1. hCG is injected under the skin or into muscle.
2. hCG travels through the blood to the testicles.
3. It binds to LH receptors on Leydig cells (the testosterone-making cells in the testicles).
4. The Leydig cells start making testosterone.
5. Higher testosterone inside the testicles helps sperm production begin.
6. Often combined with FSH (recombinant FSH or human menopausal gonadotropin) to fully restart sperm-making.

SAFETY WATCH

Injection-site soreness or redness · Acne or oily skin from higher testosterone · Breast enlargement (gynecomastia) if testosterone converts to estrogen · Mood swings or aggression · Swelling in the legs (fluid retention) · Risk of too many red blood cells (polycythemia)—monitor with blood tests

Recombinant FSH (follitropin alfa or beta) · Hormone injection (synthetic FSH)

Recombinant FSH is a lab-made copy of FSH (follicle-stimulating hormone), the natural signal from the pituitary gland that tells the testicles to make sperm. It is used in men whose pituitary isn't sending enough FSH—usually combined with hCG. FSH works on Sertoli cells (nurse cells inside the testicles that feed and organize developing sperm), pushing them to support sperm production.

1. FSH is injected under the skin.
2. It travels through the blood to the testicles.
3. FSH binds to receptors on Sertoli cells inside the seminiferous tubules (the tiny coiled tubes where sperm are made).
4. Sertoli cells activate and begin feeding and organizing sperm cells.
5. Over months, sperm production ramps up if the testicles are healthy enough to respond.
6. Usually given together with hCG to provide both testosterone (from hCG) and sperm-making signals (from FSH).

SAFETY WATCH

Injection-site reaction (redness, swelling, pain) · Headache · Acne · Testicular enlargement or discomfort · Gynecomastia (breast growth) if combined hormones shift estrogen balance · Expensive and requires months of treatment before sperm counts improve

Pseudoephedrine or imipramine · Alpha-adrenergic agonist (pseudoephedrine) or tricyclic antidepressant (imipramine)

These medicines tighten the muscle at the bladder neck (the doorway between the bladder and the urethra) during ejaculation. Normally that muscle closes to push semen forward and out through the penis. In retrograde ejaculation (backward ejaculation), the muscle stays open, so semen flows backward into the bladder instead of out. Pseudoephedrine and imipramine help the muscle squeeze shut, redirecting semen forward. If the medicine works, sperm will appear in the ejaculate and can be used naturally or collected for assisted reproduction.

1. The medicine is taken by mouth and absorbed into the blood.
2. Pseudoephedrine activates alpha-adrenergic receptors on the bladder neck muscle, causing it to contract. Imipramine works through a similar effect plus other pathways.
3. During orgasm, the tightened muscle closes the bladder neck.
4. Semen is forced forward through the urethra and out the penis, instead of backward into the bladder.
5. If effective, sperm appear in the ejaculate; if not fully effective, sperm can still be collected from urine after orgasm and used for assisted reproduction.

SAFETY WATCH

Pseudoephedrine: increased heart rate, high blood pressure, insomnia, jitteriness, dry mouth. Avoid if you have uncontrolled high blood pressure or heart disease. · Imipramine: dry mouth, constipation, blurred vision, drowsiness, dizziness, weight gain, and rarely heart-rhythm changes. Not safe with certain other medicines (MAO inhibitors). Requires careful monitoring.

Aromatase inhibitors (anastrozole, letrozole) · Aromatase inhibitor

Aromatase inhibitors block aromatase, the enzyme that converts testosterone into estrogen (estradiol). Some men with infertility have high estrogen levels, which tell the hypothalamus and pituitary to stop sending signals to the testicles. By lowering estrogen, these medicines allow the brain to release more GnRH, LH, and FSH, which in turn boost testosterone and sperm production. They are used off-label in men with a high testosterone-to-estrogen ratio problem or mild hypogonadism.

1. The medicine is taken by mouth and absorbed.

2. It blocks the aromatase enzyme in fat, liver, and testicles.
3. Less testosterone is converted into estrogen.
4. Estrogen levels drop.
5. The hypothalamus senses lower estrogen and releases more GnRH.
6. The pituitary releases more LH and FSH.
7. LH boosts testosterone; FSH supports sperm production.
8. Over weeks to months, testosterone and sperm count may rise if the testicles can respond.

SAFETY WATCH

Joint pain or stiffness · Hot flashes · Bone density loss with long-term use (estrogen helps protect bones in men, too) · Fatigue · Mood changes · Blood clots (rare) · Not FDA-approved for male infertility; used off-label based on small studies

Antibiotics (doxycycline, azithromycin, levofloxacin) · Antibiotic (tetracycline, macrolide, or fluoroquinolone)

Antibiotics kill or stop bacteria from growing. They are used when infertility is caused by a bacterial infection in the reproductive tract—such as epididymitis (infection of the coiled tube behind the testicle), orchitis (testicle infection), or prostatitis (prostate infection). Infection can block sperm flow, damage sperm quality, and cause inflammation. Treating the infection can reduce inflammation, clear blockages, and improve sperm health. The specific antibiotic is chosen based on the likely bacteria and culture results if available.

1. The antibiotic is taken by mouth (or sometimes IV for severe infection).
2. It reaches the infected tissue through the blood.
3. It kills bacteria or stops them from multiplying.
4. Inflammation and swelling decrease.
5. Blockages from swelling or scar tissue may improve.
6. Sperm quality and count may recover over weeks to months after infection clears.

SAFETY WATCH

Doxycycline: stomach upset, sun sensitivity (easy sunburn), yeast infections, rare esophagus irritation (take with water, stay upright). · Azithromycin: nausea, diarrhea, stomach cramps, rarely heart-rhythm changes. · Levofloxacin: tendon rupture risk (especially Achilles tendon—stop if you feel sudden tendon pain), nerve damage (numbness, tingling), dizziness, heart-rhythm changes. Avoid in people with certain heart conditions or history of tendon problems.

Red flags

- No sperm at all in the semen on two separate tests (may mean a blockage in both vas deferens or complete testicular failure—needs urgent urology referral)
- Hard lump or swelling in the testicle (could be testicular cancer, which can raise hormone levels and harm fertility)
- Sudden severe testicular pain with swelling (may be testicular torsion, where the testicle twists and cuts off its own blood supply—this is a surgical emergency to save the testicle)
- Milky or cloudy discharge from the penis between ejaculations (may signal an untreated sexually transmitted infection that can scar the reproductive tract)

Nursing priorities

1. Teach the patient to stop using testosterone, anabolic steroids, or bodybuilding supplements immediately if he is taking them. — Testosterone and steroids tell the brain to stop making FSH and LH (hormones that signal the testicles to make sperm). Sperm production shuts down completely but can restart three to twelve months after stopping.
2. Schedule semen analysis after two to five days without ejaculation and teach the patient to collect the sample by masturbation into a sterile cup within one hour of drop-off. — Semen analysis is the single most important test because it measures sperm count, movement, and shape. Too long or too short without ejaculation gives wrong results. Temperature changes during transport kill sperm and make the test useless.
3. Coordinate morning blood draw for FSH, LH, and testosterone levels before nine in the morning. — Testosterone levels are highest in early morning and drop during the day. Low FSH and LH mean the brain is not signaling the testicles, which clomiphene or hCG can fix. High FSH means the testicles themselves are failing and hormone treatment will not work.
4. Teach lifestyle changes including stopping smoking, limiting alcohol to two drinks per day, losing weight if BMI is over thirty, and avoiding hot tubs and saunas. — Smoking damages sperm DNA and lowers count. Heavy alcohol lowers testosterone. Obesity converts testosterone to estrogen and raises scrotum temperature. Heat above ninety-four degrees kills sperm-making cells.
5. Perform and document testicular exam noting size, firmness, and presence of varicocele by having the patient stand and bear down while you palpate above the testicle for a bag-of-worms feeling. — Small firm testicles suggest permanent damage or Klinefelter syndrome (extra X chromosome). Varicocele feels like twisted soft veins and is present in forty percent of infertile men but only fifteen percent of fertile men. Finding it changes treatment to surgical repair.

6. Refer to urology for testicular ultrasound if the physical exam shows varicocele, a mass, very small testicles under fifteen milliliters volume, or if semen analysis shows azoospermia (zero sperm). — Ultrasound confirms varicocele size to decide if surgery will help. It finds testicular cancer in two percent of infertile men. Small testicle volume predicts poor sperm retrieval success. Zero sperm needs ultrasound to check for blockages versus production failure.
7. Educate both partners that male factor alone causes infertility thirty percent of the time, but both male and female factors together cause it another thirty percent, so the female partner also needs evaluation. — Couples often blame the woman first due to cultural bias. Testing only the man wastes time and money if the woman also has blocked tubes or ovulation problems. Both partners need workup at the same time for fastest results.
8. Provide emotional support and normalize that infertility causes depression, anxiety, and relationship stress equal to cancer or heart disease diagnosis. — Men feel shame and loss of masculinity when diagnosed with infertility. Depression lowers testosterone further and worsens sperm production. Untreated psychological distress leads to treatment dropout and divorce in twenty-five percent of couples.

Sources

- American Urological Association (AUA) Male Infertility Guideline 2020
- World Health Organization (WHO) Laboratory Manual for the Examination and Processing of Human Semen, 6th edition 2021
- American Society for Reproductive Medicine (ASRM) Practice Committee
- Endocrine Society Clinical Practice Guideline on Male Hypogonadism

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