Male Fertility After Chemotherapy or Radiotherapy

Understanding Sperm Recovery, Azoospermia, Hormonal Changes, Fertility Preservation, Micro-TESE, ICSI and an Integrative Unani Approach After Cancer Treatment

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Cancer treatment can save a man's life, but some treatments can also affect his ability to father a biological child.

A young man who has successfully completed chemotherapy may come to me and say:

“Doctor, my cancer has been treated, but now my semen test shows zero sperm. Can my sperm come back?”

Another patient may ask:

“I had chemotherapy five years ago. Is infertility permanent?”

A man treated with pelvic radiotherapy may ask:

“Can radiation damage sperm even if the radiation was not directly given to my testicles?”

Another survivor may have preserved sperm before treatment but want to know whether he can eventually conceive naturally.

These are very important questions.

The first thing I explain to patients is:

Cancer-treatment-related infertility is not one single condition, and an abnormal semen analysis soon after cancer treatment does not automatically mean permanent infertility.

The effect depends upon:

- the cancer itself,
- the chemotherapy medicines used,
- cumulative chemotherapy dose,
- whether alkylating drugs were used,
- radiation dose and location,
- whether the testes received direct or scattered radiation,

- whether total-body irradiation was given,
- age and pubertal status,
- pretreatment sperm production,
- time since treatment,
- other reproductive-health factors.

The National Cancer Institute emphasizes that chemotherapy, radiotherapy, endocrine treatment, stem-cell transplantation, surgery and some targeted therapies can reduce male fertility, with effects ranging from temporary sperm suppression to permanent infertility.

The encouraging part is that **some men recover sperm production months or even years after treatment**, while modern reproductive medicine can sometimes retrieve sperm directly from the testes in men whose semen continues to show azoospermia.

My clinical approach therefore begins not with the question:

“Which sperm medicine should we give?”

but with:

“What treatment did you receive, how much gonadal damage was likely, how long ago was treatment completed, and what testicular function remains today?”

What Does “Male Fertility After Cancer Treatment” Mean?

Male fertility requires several systems to work together.

The testes must:

- contain functioning sperm-producing cells,
- receive appropriate hormonal stimulation,
- produce mature sperm,
- make adequate testosterone.

The reproductive ducts must then transport sperm into the semen.

Sexual function must also allow sperm to reach the female reproductive tract.

Cancer and cancer treatment can interfere with any of these processes.

However, chemotherapy and radiotherapy are especially important because both can damage the rapidly dividing cells involved in sperm production.

Infertility Is Not the Same as Erectile Dysfunction

This is one of the most important distinctions I explain to cancer survivors.

A man can have:

normal sexual desire, normal erections, normal ejaculation and zero sperm.

Another man can have:

normal sperm production but erectile dysfunction because pelvic radiation or surgery damaged nerves or blood vessels.

Fertility and sexual performance are related aspects of male reproductive health, but they are not the same thing.

A semen-analysis abnormality should therefore never be described simply as “sexual weakness.”

How Are Sperm Produced?

Sperm develop inside tiny structures within the testes called **seminiferous tubules**.

The process begins with primitive germ cells called **spermatogonia**.

These cells divide repeatedly and mature through several stages before becoming spermatozoa.

This makes the male reproductive system particularly vulnerable to treatments that damage rapidly dividing cells.

Chemotherapy is designed to destroy rapidly dividing cancer cells.

Unfortunately, it can also affect rapidly dividing normal germ cells.

Radiation can similarly damage germ-cell DNA.

The severity depends largely upon whether the treatment destroys only developing sperm cells or also damages the more fundamental stem-cell population from which future sperm must arise.

Why Can Fertility Recover in Some Men but Not Others?

If treatment temporarily destroys mature and developing sperm but enough spermatogonial stem cells survive, sperm production may restart.

If treatment destroys a large proportion of those stem cells, recovery may be incomplete.

If essentially all sperm-producing stem cells are destroyed, permanent azoospermia can occur.

Therefore:

temporary azoospermia and permanent azoospermia may look identical on an early semen report.

Time and follow-up become important.

Cancer Itself Can Reduce Sperm Quality Before Treatment

Another point patients sometimes overlook is that poor fertility may begin **before chemotherapy or radiotherapy**.

Certain cancers are associated with reduced semen quality at diagnosis.

The NCI specifically notes that men with testicular cancer, Hodgkin lymphoma and some other cancers may already have low sperm counts or impaired semen quality before receiving anticancer therapy.

Current EAU guidance similarly reports substantial pretreatment semen impairment among men with testicular germ-cell cancer.

This is why a poor post-treatment semen report cannot always be attributed entirely to chemotherapy.

Whenever possible, pretreatment semen analysis provides valuable baseline information.

How Chemotherapy Affects Male Fertility

Chemotherapy travels through the bloodstream and can affect reproductive cells throughout the body.

The extent of fertility damage differs enormously among drug classes.

I therefore do not consider the statement:

“I received chemotherapy”

sufficient for estimating fertility prognosis.

I want to know:

Which drugs?

How many cycles?

What cumulative doses?

Was stem-cell transplantation involved?

Different regimens have dramatically different gonadotoxic potential.

Alkylating Agents — Among the Highest-Risk Chemotherapy Drugs

Alkylating agents are particularly important because they can damage DNA in spermatogonial stem cells.

Examples include drugs or related agents such as:

- cyclophosphamide,
- ifosfamide,
- procarbazine,
- busulfan,
- melphalan,
- chlorambucil.

The NCI identifies alkylating agents as carrying a particularly high risk for male infertility because they can damage both mature sperm and the germ cells responsible for future sperm production.

A 2024 review of prepubertal male gonadotoxicity likewise identified alkylating-agent exposure as the most consistently recognized high-risk chemotherapy category.

The risk rises with **cumulative dose**.

This is why modern survivorship research often calculates a **cyclophosphamide-equivalent dose, or CED**, to estimate total alkylating-agent exposure.

What Is Cyclophosphamide Equivalent Dose?

Different alkylating medicines cannot simply be compared milligram for milligram.

Researchers therefore use **cyclophosphamide equivalent dose—CED** to estimate overall exposure to this drug class.

Higher CED generally correlates with greater risk of long-term damage to spermatogenesis.

A longitudinal childhood-cancer survivor study found higher adult azoospermia risk with substantial cumulative alkylating-agent exposure, particularly when combined with testicular radiation.

CED is mainly a specialist clinical/research tool.

Patients do not need to calculate it themselves.

However, their treating oncologist or fertility specialist can sometimes use treatment records to estimate it.

Platinum-Based Chemotherapy

Cisplatin and related platinum drugs are frequently used in cancers such as testicular cancer.

These treatments can substantially suppress sperm production.

The good news is that many testicular-cancer survivors eventually recover spermatogenesis.

Current EAU guidance notes that following chemotherapy for testicular germ-cell cancer, sperm production frequently recovers over approximately **one to four years**, although recovery varies significantly among individuals.

This is why I am cautious about declaring infertility permanent shortly after treatment.

Combination Chemotherapy

Cancer treatment commonly uses several drugs together.

The reproductive effect may therefore reflect:

- one highly gonadotoxic drug,
- cumulative exposure to several drugs,
- interactions between treatments,
- the underlying cancer.

Even chemotherapy agents considered less gonadotoxic individually can contribute to fertility impairment when used in complex regimens.

A recent 2026 systematic review confirms that anticancer drugs can affect male fertility through several mechanisms, although the quality and amount of evidence differ considerably between drug classes.

Chemotherapy Can Cause Temporary Oligospermia

Some men continue producing sperm after treatment, but sperm concentration falls.

This is called:

oligozoospermia.

The patient may also develop:

- reduced motility,
- abnormal morphology,
- increased sperm DNA damage.

The severity and duration vary.

A low sperm count after chemotherapy does not necessarily remain low permanently.

Chemotherapy Can Cause Azoospermia

More intensive gonadotoxic chemotherapy may result in:

Azoospermia

meaning that sperm are not detected in the ejaculate.

Again, this can be:

Temporary azoospermia

Sperm production later recovers.

or:

Persistent azoospermia

Sperm remain absent for years because the germ-cell population has been severely depleted.

Only follow-up and appropriate evaluation can determine which situation applies.

Stem-Cell or Bone-Marrow Transplantation

Hematopoietic stem-cell transplantation frequently requires extremely intensive treatment beforehand.

Conditioning may include:

- high-dose chemotherapy,
- total-body irradiation,
- or both.

These regimens are among the treatments carrying the greatest risk of permanent fertility damage.

The NCI specifically identifies pre-transplant chemotherapy and radiation as potential causes of severe sperm and germ-cell damage.

Therefore, fertility preservation should ideally be discussed **before conditioning treatment begins**.

Targeted Therapies

Modern targeted treatments have transformed cancer therapy.

Their effects on male fertility vary substantially.

Some tyrosine-kinase inhibitors and other targeted agents can affect:

- spermatogenesis,
- endocrine function,
- sperm characteristics.

For many newer agents, long-term reproductive data remain limited.

The NCI therefore recommends discussing the fertility implications of the **specific targeted therapy** rather than assuming that all newer treatments are fertility-safe.

Immunotherapy

The effects of immunotherapy on male fertility remain less clearly defined than those of classical alkylating chemotherapy.

Immune checkpoint inhibitors can also produce endocrine complications affecting:

- pituitary function,
- thyroid function,

- adrenal function,
- occasionally gonadal function.

Therefore, a cancer survivor with fertility problems following immunotherapy should be evaluated rather than assuming that chemotherapy-type germ-cell damage is the only possible explanation.

The NCI notes that fertility effects of immunotherapies are still being studied.

How Radiotherapy Affects Male Fertility

Radiotherapy damages DNA within the treatment field.

The reproductive effect depends heavily on:

- radiation dose,
- whether the testes are directly irradiated,
- distance between the testes and treatment area,
- scattered radiation,
- radiation technique,
- age at exposure.

The testes are particularly sensitive because germ cells are highly radiosensitive.

A 2024 comprehensive review confirms that even relatively low radiation exposure can impair sperm count and quality, while higher testicular doses increase the probability of prolonged or permanent infertility.

Direct Testicular Radiation

When the testes themselves are within the radiation field, the risk to sperm production can be very high.

Examples may occur in treatment of:

- certain leukemias,
- testicular malignancy,
- pelvic or genital malignancies,
- selected childhood cancers.

Direct gonadal radiation can destroy spermatogonial stem cells.

Higher cumulative exposure increases the risk that azoospermia will become permanent.

Scatter Radiation

The testes do not necessarily need to be the intended radiation target to receive radiation.

Small amounts can reach the testes as **scatter radiation** during treatment of nearby areas.

Examples include radiation involving:

- pelvis,
- lower abdomen,
- retroperitoneum.

For example, NCI information on testicular cancer notes that retroperitoneal radiation can produce scatter exposure to the remaining testicle and temporarily lower sperm counts.

Even Relatively Low Testicular Radiation Can Affect Sperm

A comprehensive PENTEC review in paediatric and young-adult survivors found substantial rates of oligospermia even when mean testicular exposure was below 1 Gy, although most of those lower-dose cases recovered during follow-up.

This finding illustrates the sensitivity of the sperm-producing germ cells.

However, these percentages come primarily from childhood and young-adult survivor populations and should not be applied as exact predictions for every adult patient.

The important clinical message is:

the testes are highly radiosensitive, and even scatter dose matters.

Higher Testicular Radiation and Long-Term Azoospermia

A recent long-term childhood-cancer survivor study found that testicular radiation exposure of **1 Gy or more** was strongly associated with adult azoospermia and reduced

paternity in that population, especially when combined with substantial alkylating-agent exposure.

Again, this is population-level evidence rather than an individual prediction.

Radiation oncologists can estimate the actual testicular dose from the treatment plan.

Leydig Cells Are More Resistant Than Sperm-Producing Cells

The testicle performs two major jobs:

1. producing sperm,
2. producing testosterone.

These functions do not have identical radiation sensitivity.

Germ cells responsible for spermatogenesis are particularly radiosensitive.

Leydig cells, which produce testosterone, are relatively more resistant, although higher radiation doses can still impair them.

This produces an important clinical situation:

a man can become infertile while still having reasonably normal testosterone, libido and erections.

Brain Radiotherapy Can Affect Fertility Indirectly

Not all radiotherapy-related infertility comes from direct testicular radiation.

The hypothalamus and pituitary gland in the brain regulate the reproductive hormones:

- LH,
- FSH.

Radiation involving these structures can impair hormonal stimulation of the testes.

The NCI identifies cranial radiation involving the hypothalamic-pituitary system as another potential cause of fertility impairment.

This type of infertility can sometimes have a different treatment pathway from direct testicular damage.

Central Hormonal Failure Versus Testicular Failure

This distinction is important.

Central or hypogonadotropic infertility

The brain/pituitary does not produce adequate FSH and LH.

The testes may still retain the ability to produce sperm if appropriately stimulated.

Primary testicular failure

The testes themselves have lost sperm-producing cells.

FSH often rises because the pituitary is trying unsuccessfully to stimulate the damaged testis.

The treatment possibilities differ considerably.

Total-Body Irradiation

Total-body irradiation, used in some bone-marrow/stem-cell transplant conditioning regimens, exposes the testes directly.

It carries a particularly high risk of prolonged or permanent spermatogenic failure.

Men scheduled for this type of treatment should receive fertility-preservation counselling whenever circumstances allow.

Can Radiation Exposure Be Reduced?

Sometimes.

Radiation oncologists may use techniques such as:

- careful field design,
- modern conformal therapy,
- intensity-modulated radiotherapy,
- proton therapy in selected cases,
- gonadal shielding when technically appropriate.

NCI specifically recognizes **testicular shielding** as an established fertility-protection measure when scatter radiation can reasonably be reduced without compromising cancer treatment.

Cancer control must always remain the priority.

A radiation field should never be compromised merely to reduce fertility risk if doing so reduces the effectiveness of cancer treatment.

How Quickly Can Sperm Production Recover?

There is no single timeline.

Recovery depends upon:

- chemotherapy regimen,
- cumulative dose,
- radiation dose,
- baseline fertility,
- cancer type,
- surviving stem-cell population.

Current EAU data for testicular-cancer survivors indicate that spermatogenesis may recover over approximately **one to four years following chemotherapy**.

In some individuals recovery occurs earlier.

In others it takes considerably longer.

Some never recover ejaculated sperm.

An Early "Zero Sperm" Result Does Not Always Mean Permanent Infertility

This is one of the most important messages in this article.

Suppose a man completes chemotherapy and six months later his semen analysis shows azoospermia.

That test tells us:

no sperm are detectable at that time.

It does not necessarily tell us:

no sperm will ever return.

If surviving spermatogonial stem cells remain, recovery can continue for years.

This is why definitive fertility prognosis should not be based on one early post-treatment semen analysis.

When Should Semen Analysis Be Repeated?

Timing depends upon the cancer treatment and the clinical question.

The AUA/ASRM male-infertility guideline advises that a semen analysis intended to assess recovery after gonadotoxic therapy is generally most informative at **at least 12 months after treatment and preferably around 24 months**, although earlier testing may be useful in selected circumstances.

EAU experience in testicular-cancer survivors shows that recovery can continue for as long as several years.

Therefore, repeated assessment over time can be more useful than one test.

How I Evaluate Fertility After Chemotherapy or Radiotherapy

When a cancer survivor comes to me for infertility, I first obtain the cancer-treatment history.

I want to know:

What cancer was diagnosed?

At what age?

Which chemotherapy drugs were used?

How many cycles?

Was radiotherapy given?

Where was radiation directed?

Was the testis within or near the field?

Was total-body irradiation used?

Was bone-marrow transplantation performed?

Was sperm frozen before treatment?

These details can radically change prognosis.

Pretreatment Fertility History Matters

I also ask:

- Did he father a pregnancy before cancer?
- Was a semen test performed before treatment?
- Was semen cryopreserved?
- Was sperm count already low?

This is particularly relevant for testicular cancer and lymphoma because semen may already have been impaired before treatment.

Semen Analysis After Cancer Treatment

A complete semen analysis evaluates:

- semen volume,
- sperm concentration,
- total sperm number,
- progressive motility,
- total motility,
- morphology.

Possible post-treatment findings include:

- normal semen,
- oligozoospermia,
- asthenozoospermia,
- combined abnormalities,
- cryptozoospermia,
- azoospermia.

The severity should be confirmed and interpreted in relation to time since treatment.

Cryptozoospermia

Cryptozoospermia is important in cancer survivors.

In this condition, no sperm may initially be seen during routine semen examination, but very small numbers can sometimes be found after centrifugation and careful examination.

Finding even a few viable sperm may create an opportunity for:

- cryopreservation,
- ICSI.

Therefore, a high-quality fertility laboratory is especially valuable when sperm numbers are extremely low.

Hormonal Evaluation

Depending upon the clinical situation, I may consider:

- FSH,
- LH,
- total testosterone.

These hormones help distinguish different mechanisms.

High FSH

Often suggests significant injury to the sperm-producing compartment of the testes.

Low FSH and LH with low testosterone

May suggest hypothalamic-pituitary dysfunction, which can occur after cranial radiotherapy.

Low testosterone with elevated LH

Suggests Leydig-cell dysfunction within the testis.

This matters because fertility treatment differs.

Testosterone Levels After Cancer Treatment

Some men develop testosterone deficiency after:

- direct testicular treatment,
- orchidectomy,
- high-dose radiation,
- pituitary injury.

Symptoms may include:

- low libido,

- fatigue,
- reduced muscle mass,
- erectile difficulty.

However:

testosterone replacement is not fertility treatment.

External testosterone can further suppress sperm production.

A man who wants biological children therefore requires a fertility-conscious endocrine strategy.

Do Not Use Testosterone as a "Sperm Booster"

This point is particularly important for cancer survivors.

A patient with low testosterone may understandably think:

"If testosterone is low, an injection should improve fertility."

External testosterone suppresses pituitary FSH and LH.

That can suppress any remaining spermatogenesis.

Therefore, reproductive goals should be discussed before beginning testosterone therapy.

If hormone replacement is medically necessary, fertility planning and endocrine management should be coordinated appropriately.

Fertility Preservation Before Cancer Treatment

The best time to protect fertility is generally:

Before Gonadotoxic Treatment Begins

The **2025 ASCO fertility-preservation guideline update** recommends assessing reproductive risk at cancer diagnosis, counselling patients about fertility preservation, and referring patients who are interested in or uncertain about future parenthood to reproductive specialists.

ASRM's **2026 committee opinion** likewise states that patients facing systemic chemotherapy, radiation or other fertility-threatening treatment should receive prompt fertility-preservation counselling.

Sperm Cryopreservation — The Standard Male Fertility-Preservation Method

For a post-pubertal male, the established fertility-preservation method is:

Sperm Banking or Sperm Cryopreservation

A semen sample is produced before cancer treatment.

The laboratory assesses it and freezes sperm for future use.

The frozen sperm can later be used for:

- IUI in selected circumstances,
- IVF,
- ICSI.

NCI identifies sperm banking as the most common established fertility-preservation strategy for post-pubertal males.

More Than One Sample Is Helpful When Time Allows

ASRM's 2026 guidance recommends obtaining multiple ejaculated samples when medically feasible because having more cryopreserved sperm increases future reproductive options.

However, urgent cancer treatment should not be dangerously delayed.

The oncology and reproductive teams need to work together.

Even one usable frozen sample can sometimes be extremely valuable because ICSI requires very few sperm.

What If the Patient Cannot Produce a Semen Sample?

Some patients cannot ejaculate because of:

- anxiety,
- pain,
- severe illness,
- neurological problems,
- medication effects,

- very young age despite puberty.

Options may include:

- assisted ejaculation,
- sperm retrieval directly from the testis.

The 2025 ASCO update specifically recommends considering **testicular sperm extraction** when a male cannot provide an adequate semen specimen before cancer therapy.

Onco-TESE

Onco-TESE means testicular sperm extraction performed specifically in the cancer-treatment setting.

It may be especially useful when:

- the patient is azoospermic before chemotherapy,
- semen collection is impossible,
- the patient has testicular cancer and sperm may need to be obtained at the time of cancer surgery.

ASRM's current 2026 guidance recognizes Onco-TESE as an established option for appropriately selected patients.

Testicular Cancer and Onco-TESE

A patient with testicular cancer may already have impaired sperm production before treatment.

If an azoospermic man requires removal of a testicle containing a tumour, sperm extraction can sometimes be performed from appropriate tissue in coordination with cancer surgery.

This must be performed by an experienced oncology and reproductive team to preserve cancer-treatment safety.

Prepubertal Boys

Young boys do not yet produce mature ejaculated sperm.

Therefore, ordinary sperm banking is impossible.

Testicular tissue cryopreservation is being studied as a future fertility-preservation method.

However, both the **2025 ASCO guideline** and **2026 ASRM guidance** continue to classify testicular tissue cryopreservation for prepubertal boys as **experimental/investigational** and recommend it primarily within approved clinical research programmes.

Parents should therefore be cautious about commercial promises guaranteeing future fertility from experimental tissue storage.

Should Sperm Be Collected After Chemotherapy Has Already Started?

Ideally, sperm is banked **before the first gonadotoxic treatment**.

The reason is not merely lower sperm counts after treatment.

Cancer therapies can also damage sperm DNA.

The 2025 ASCO update specifically warns of potentially greater genetic damage in sperm obtained shortly after cancer-directed therapy begins or ends.

ASRM's 2026 guidance notes that many centres avoid freezing sperm once chemotherapy or radiation has begun; when post-exposure sperm is stored because no alternative exists, patients should receive specific counselling regarding potential treatment-induced mutations.

Pregnancy During Cancer Treatment Should Be Avoided

Even if sperm count has fallen, fertility may not be completely absent.

Pregnancy can therefore still occur.

Contraception may be necessary during cancer treatment because chemotherapy and radiotherapy can damage germ cells and may harm a pregnancy.

Current EAU guidance in testicular-cancer survivors recommends contraception during gonadotoxic therapy and for at least **six months after completion**.

AUA/ASRM male-infertility guidance has taken the more conservative position of advising avoidance of pregnancy for at least **12 months after completion of chemotherapy or radiotherapy**.

Because recommendations vary according to treatment and cancer type, the safest waiting interval should be determined by the **treating oncologist and reproductive specialist**, rather than applying one universal number to every survivor.

Why Waiting After Treatment Matters

Developing sperm cells exposed directly to chemotherapy or radiation may have:

- DNA damage,
- chromosomal abnormalities,
- impaired function.

After treatment stops, new sperm generated from surviving stem cells gradually replace sperm exposed during therapy.

Current EAU evidence notes elevated sperm aneuploidy and DNA damage after gonadotoxic treatment, with many abnormalities declining toward pretreatment levels over approximately 18–24 months in testicular-cancer survivor studies.

This supports individualized post-treatment reproductive counselling.

Are Children Fathered After Chemotherapy at Increased Risk of Birth Defects?

This is a common fear.

Current EAU reviews of cancer survivors have generally **not demonstrated a significant overall increase in genetic abnormalities among children conceived after appropriately completed chemotherapy or radiotherapy**.

This is reassuring.

However, patients should still follow recommended waiting intervals after therapy and obtain cancer-specific counselling.

Can Fertility Be Tested Immediately After Treatment?

A semen analysis can technically be performed, but an early result may not reflect long-term fertility.

If sperm are absent a few months after treatment, recovery may still occur.

The AUA/ASRM guidance therefore considers semen analysis at **12 months or later, and preferably around 24 months**, particularly useful for assessing longer-term recovery after gonadotoxic therapy.

Earlier testing may still be appropriate when there is a specific clinical question.

What If Sperm Return?

If sperm return after treatment, several possibilities exist.

If concentration and motility become adequate and the female partner's fertility is favourable, natural conception may be possible after oncologic clearance.

If sperm remain severely reduced, the patient may consider:

- cryopreservation,
- IUI in selected cases,
- IVF/ICSI.

If only rare sperm return, I often consider discussing cryopreservation because future sperm production can fluctuate.

What If Azoospermia Persists?

Persistent azoospermia after chemotherapy does not always mean that every seminiferous tubule contains zero sperm.

Some men retain very small focal areas of spermatogenesis inside the testes.

These sperm may be found through:

Microdissection Testicular Sperm Extraction — Micro-TESE

An operating microscope is used to locate testicular tubules that appear relatively more likely to contain sperm.

Retrieved sperm can potentially be used for ICSI.

How Successful Is Micro-TESE After Chemotherapy?

Success varies considerably according to treatment history.

A recent **2026 study of 33 men with persistent post-chemotherapy azoospermia** reported successful sperm retrieval in **16 men—approximately 48.5%**. This was a relatively small observational cohort, so it should not be interpreted as an individual patient's predicted success rate.

Another study of 28 post-chemotherapy survivors found sperm in approximately 39%, but sperm retrieval was substantially poorer after heavy alkylating-agent exposure.

Therefore:

micro-TESE can offer hope, but success depends strongly on the previous cancer treatment.

Alkylating-Agent Exposure and Micro-TESE Prognosis

One retrospective study found that men whose chemotherapy involved high cumulative alkylating-agent exposure had markedly lower micro-TESE success.

In that small cohort, no sperm were recovered above a particular high cyclophosphamide-equivalent exposure threshold.

This does not establish a universal cutoff applicable to every cancer survivor.

But it demonstrates why reviewing the original chemotherapy regimen can be useful before surgical sperm retrieval.

Normal FSH Does Not Guarantee Micro-TESE Success

Patients sometimes ask:

“My FSH is normal. Does that mean sperm will definitely be found?”

No.

Similarly:

“My FSH is high. Does that mean micro-TESE will definitely fail?”

Not necessarily.

Current evidence in non-obstructive azoospermia shows that no single hormone reliably predicts sperm retrieval.

The previous cancer treatment and remaining microscopic spermatogenesis are more important.

IVF and ICSI After Cancer Treatment

If sperm are extremely limited or surgically retrieved, the main reproductive method is usually:

IVF With ICSI

In IVF, eggs are retrieved from the female partner.

With ICSI, one viable sperm is injected directly into each suitable mature egg.

This is particularly useful when:

- sperm count is extremely low,
- sperm have been surgically retrieved,
- only frozen pretreatment sperm are available.

The final chance of pregnancy depends not only on the man's sperm but also on:

- female age,
- ovarian reserve,
- egg quality,
- embryo development,
- uterine factors.

What If Sperm Were Frozen Before Chemotherapy?

This can greatly simplify future fertility treatment.

Even if post-treatment semen remains azoospermic, frozen pretreatment sperm may still be available for:

- IUI where quantity and quality permit,
- IVF,
- ICSI.

Sperm can remain cryopreserved for long periods when stored properly.

Pretreatment sperm banking therefore remains one of the most effective strategies for protecting male reproductive options.

Does Chemotherapy Damage Testosterone Production?

Sometimes, but not always.

Sperm-producing germ cells are generally more vulnerable than testosterone-producing Leydig cells.

A man may therefore develop:

azoospermia with normal testosterone.

Higher treatment doses, direct testicular radiation, bilateral testicular damage or other factors can produce more obvious endocrine failure.

Hormonal testing should therefore be based on symptoms and fertility findings.

Low Testosterone After Treatment

Symptoms may include:

- reduced sexual desire,
- erectile difficulties,
- tiredness,
- reduced muscle strength,
- reduced body hair,
- lower bone density.

If hypogonadism is confirmed, treatment may be important for long-term health.

However, if the patient wishes to father children, fertility goals should be addressed before ordinary testosterone replacement.

Fertility After Cranial Radiotherapy

If brain radiotherapy damages the hypothalamic-pituitary reproductive axis, the testes may receive inadequate FSH and LH.

This is called:

hypogonadotropic hypogonadism.

Unlike severe direct germ-cell destruction, this condition can sometimes respond to specialist fertility treatment with gonadotropin hormones when medically appropriate and once the oncology team considers treatment safe.

This is why distinguishing central hormonal damage from primary testicular damage matters.

Fertility After Testicular Radiotherapy

Direct testicular radiation is more difficult because it can destroy the cells from which sperm originate.

Hormonal stimulation cannot recreate germ cells that have been completely lost.

Therefore, fertility prognosis after direct testicular radiation depends greatly upon dose and the amount of remaining functioning tissue.

Fertility After One Testicle Has Been Removed

Some cancer patients undergo unilateral orchiectomy.

One healthy remaining testicle can often produce:

- adequate testosterone,
- adequate sperm.

However, testicular-cancer patients may already have reduced semen quality in the remaining testis.

Therefore, semen analysis—not assumptions based solely on having one testicle—should determine present fertility.

Cancer Survivorship and Male Fertility Should Remain Connected

An important change in modern oncology is that fertility is no longer considered only a question to ask on the day cancer is diagnosed.

The **2025 ASCO guideline update specifically recommends returning to reproductive goals during survivorship**.

A man who was 20 years old and uninterested in fatherhood during cancer treatment may be 30 years old and planning a family later.

His reproductive priorities have changed.

Fertility assessment should therefore remain part of long-term survivorship care.

The Emotional Effect of Post-Cancer Infertility

Completing cancer treatment can be emotionally complicated.

A survivor may think:

“I survived cancer. I should not complain about infertility.”

But wanting biological children after cancer is a legitimate life goal.

Infertility can produce:

- sadness,
- anxiety,
- guilt,
- fear about marriage,
- concern about masculinity,
- relationship distress.

Patients should be allowed to discuss these concerns without being told that fertility is unimportant compared with cancer survival.

Cancer survival and quality of life are not competing ideas.

Both matter.

Cancer-Related Infertility Does Not Mean Loss of Masculinity

I explain this clearly.

Chemotherapy-induced azoospermia measures sperm production.

It does not measure:

- masculinity,
- emotional strength,
- sexual worth,
- ability to satisfy a partner.

A man can have zero sperm and normal erection.

A man can have normal sperm and severe erectile dysfunction.

These are different biological functions.

Lifestyle After Cancer Treatment

Once active cancer treatment is complete and the oncology team permits normal activity, general health optimisation may support the best remaining reproductive function.

I usually discuss:

- tobacco cessation,

- healthy body weight,
- regular physical activity,
- good metabolic control,
- adequate sleep,
- avoidance of anabolic steroids,
- avoidance of unnecessary testosterone,
- balanced nutrition.

These measures cannot reverse complete destruction of spermatogonial stem cells.

But they can protect remaining reproductive and general health.

Smoking

Smoking has been associated with poorer semen quality and sperm DNA damage.

For a man whose spermatogenic reserve is already reduced by chemotherapy or radiotherapy, avoiding additional reproductive stress is reasonable.

Smoking cessation also improves cardiovascular and cancer-survivorship health more broadly.

Body Weight and Metabolic Health

Obesity, diabetes and metabolic syndrome can negatively influence:

- testosterone,
- erectile function,
- semen characteristics.

Optimizing these conditions may therefore improve the overall reproductive environment, even when the principal fertility injury came from cancer treatment.

Anabolic Steroids and Gym Testosterone

Cancer survivors sometimes begin testosterone or bodybuilding hormones because they feel physically weak after treatment.

This can be dangerous for fertility.

External testosterone and anabolic steroids suppress FSH and LH and may reduce residual sperm production.

A survivor hoping for biological children should never begin these hormones without discussing fertility first.

The Unani Perspective on Male Fertility After Chemotherapy or Radiotherapy

As a physician trained in Unani medicine and focused on sexual disorders and infertility, I consider fertility within the patient's overall physical and reproductive health.

Traditional Unani medicine gives importance to:

- **Mizaj**, or constitutional state,
- nutrition,
- digestion,
- physical activity,
- sleep,
- emotional wellbeing,
- sexual health,
- reproductive function.

These whole-person principles can be useful during survivorship because a cancer survivor may simultaneously experience:

- fatigue,
- poor appetite,
- disturbed digestion,
- sleep problems,
- reduced physical strength,
- metabolic problems,
- sexual anxiety,
- infertility-related stress.

But post-cancer fertility requires an especially careful scientific approach.

What Unani Medicine Can and Cannot Do

Unani supportive treatment may be useful for:

- improving general health,
- supporting nutrition and digestion,
- correcting unhealthy lifestyle patterns,
- managing selected associated sexual complaints,
- supporting general reproductive wellbeing after oncology clearance.

However:

Unani medicine cannot guarantee regeneration of sperm-producing stem cells destroyed by high-dose chemotherapy or radiation.

Likewise, herbal treatment cannot reverse complete radiation-induced destruction of testicular germ cells.

This distinction is extremely important.

What Does Unani Research Show About Male Infertility?

Published Unani research has investigated men with **idiopathic oligospermia**.

For example, a CCRUM-associated analysis of previous Unani clinical studies involving 126 men with idiopathic oligospermia reported improvements in selected semen parameters with several formulations.

Another clinical study reported improvements in sperm count, motility and morphology following a Unani formulation in men with oligospermia.

These findings provide a basis for further research into Unani male-fertility care.

However:

idiopathic oligospermia and chemotherapy-induced germ-cell destruction are not the same disease.

Why Ordinary Oligospermia Studies Cannot Be Applied Directly to Cancer Survivors

Consider two men.

The first has idiopathic oligospermia with:

- sperm count 8 million/mL,
- no known testicular injury.

The second received high-dose alkylating chemotherapy and now has persistent azoospermia.

Their laboratory results may both represent male infertility.

Their biology is very different.

Evidence that a treatment improves semen parameters in idiopathic oligospermia does not prove that it can regenerate germ cells after high-dose chemotherapy.

That scientific distinction protects patients from unrealistic promises.

Herbal Medicines During Active Cancer Treatment Require Special Caution

This point is extremely important.

“Natural” does not mean automatically safe during chemotherapy or radiotherapy.

Herbs and supplements can change:

- absorption,
- metabolism,
- clearance,
- effectiveness

of anticancer drugs.

The NCI documents clinically important interactions between certain supplements or foods and anticancer treatments and specifically recommends that patients disclose all herbal and dietary supplements to the oncology team.

Therefore, I do not advise starting a Unani infertility formulation during active chemotherapy without explicit oncology review.

Antioxidants During Cancer Treatment Are Not Automatically Safe

Many male fertility supplements contain high doses of antioxidants.

Patients may think:

“Chemotherapy produces oxidative stress, so antioxidants must protect my testes.”

The issue is more complicated.

Some chemotherapy and radiotherapy treatments rely partly on oxidative mechanisms to damage cancer cells.

NCI reviews have raised concern that certain high-dose antioxidant supplements used during active treatment could potentially interfere with cancer-treatment effectiveness in some settings.

Therefore:

a fertility supplement should never be started during active cancer therapy merely because it is marketed as an antioxidant.

When I Consider Unani Support

My preference is to first establish:

- cancer-treatment status,
- oncology clearance,
- current semen findings,
- hormonal status,
- likelihood of natural recovery,
- whether sperm were previously banked,
- whether ART is needed.

Only then should supportive Unani management be considered.

This protects the patient's cancer treatment and prevents unnecessary delay in fertility care.

My Approach at Saira Health Care

When a cancer survivor consults me for infertility, I do not begin with a standard sperm medicine.

I first ask:

What was the cancer?

Which chemotherapy drugs were used?

Was an alkylating agent given?

Was radiation given near the testes?

Was there total-body irradiation?

Was sperm frozen before treatment?

How long has it been since treatment finished?

Has semen been tested more than once?

What are FSH, LH and testosterone?

What is the female partner's fertility status?

These questions create a meaningful fertility plan.

Special Treatment Planning by Dr. Nizamuddin Qasmi

My focused work in **Sexual Disorders & Infertility** allows me to look at several possible consequences of cancer treatment together.

A patient may simultaneously experience:

- azoospermia,
- oligospermia,
- low testosterone,
- erectile dysfunction,
- reduced libido,
- infertility-related anxiety.

These should not automatically be treated as one condition.

Depending upon the patient, my assessment may incorporate:

- detailed cancer-treatment history,
- reproductive history,
- semen analysis,
- repeat semen testing,
- hormonal evaluation,
- testicular examination,
- assessment of sexual function,

- evaluation of previous sperm cryopreservation,
- couple-based fertility planning.

When indicated, I advise coordination with:

- medical oncology,
- radiation oncology,
- reproductive urology,
- endocrinology,
- IVF/ICSI specialists.

Individualized Unani support may be incorporated when medically appropriate and compatible with oncology care.

What "Special Treatment" Means in My Practice

It does not mean:

"One medicine restores sperm after every chemotherapy regimen."

That would be scientifically incorrect.

Specialized treatment means recognizing that different patients require different pathways.

Patient One

Has mild oligospermia one year after relatively lower-risk chemotherapy.

He may recover further with time.

Patient Two

Has azoospermia six months after treatment.

It may still be too early to declare permanent infertility.

Patient Three

Has persistent azoospermia five years after heavy alkylating chemotherapy.

He may need reproductive-urology assessment for micro-TESE.

Patient Four

Had cranial radiotherapy and now has low FSH, LH and testosterone.

His problem may involve pituitary hormonal stimulation rather than complete germ-cell destruction.

Patient Five

Banked sperm before chemotherapy.

His best fertility option may simply be IVF/ICSI using preserved pretreatment sperm.

These patients should not receive identical treatment.

Saira Health Care's Contribution to Sexual Disorders and Infertility

At **Saira Health Care**, our contribution in this area is primarily to connect cancer survivorship with sexual and reproductive health.

The oncology team correctly focuses first on:

treating cancer and protecting life.

After treatment, patients may need additional help with:

- fertility,
- sexual function,
- testosterone,
- relationship confidence,
- reproductive planning.

A survivor should not have to choose between being grateful for successful cancer treatment and acknowledging that infertility affects quality of life.

Both realities can exist together.

When Should a Cancer Survivor Seek Fertility Assessment?

Evaluation is particularly appropriate when:

- pregnancy has not occurred after appropriate attempts,
- sperm count is persistently low,
- azoospermia is reported,
- chemotherapy involved high-risk gonadotoxic drugs,
- testicular or total-body radiation was given,

- both testes were affected,
- stem-cell transplantation was performed,
- testosterone symptoms are present,
- biological fatherhood is being planned.

A survivor does not need to wait until years of infertility have passed if the previous treatment is already known to carry substantial fertility risk.

Frequently Asked Questions

Can chemotherapy cause permanent infertility?

Yes.

Some chemotherapy regimens can permanently damage spermatogonial stem cells.

Risk is particularly high with substantial cumulative exposure to alkylating agents and with intensive conditioning regimens.

However, infertility can also be temporary.

Which chemotherapy drugs are most damaging to male fertility?

Alkylating agents are among the best-established high-risk classes.

Risk also depends upon cumulative dose and combination therapy.

Platinum-containing regimens can significantly suppress spermatogenesis but recovery frequently occurs in many survivors.

Does every man become infertile after chemotherapy?

No.

Some retain normal sperm production.

Some develop temporary oligospermia or azoospermia.

Others develop permanent infertility.

Can sperm come back after chemotherapy?

Yes.

Current EAU evidence in testicular-cancer survivors indicates that spermatogenesis may recover over approximately **one to four years**, although individual recovery varies.

If my semen analysis shows zero sperm after six months, is it permanent?

Not necessarily.

Recovery can continue for years.

Your treatment regimen, hormone levels and time since therapy need to be considered.

When should I have semen analysis after cancer treatment?

AUA/ASRM guidance suggests that assessment at **12 months or later, preferably around 24 months**, may provide more meaningful information about long-term recovery, although individual clinical circumstances may justify earlier testing.

Can radiotherapy cause infertility?

Yes.

Direct or scattered testicular radiation can impair sperm production.

Risk depends strongly upon testicular radiation dose and treatment field.

Can pelvic radiation affect sperm even if the testicles were not targeted?

Yes.

Scatter radiation may reach the testes.

Modern radiation planning and shielding can reduce exposure in selected situations.

Can brain radiation cause infertility?

Yes.

Radiation affecting the hypothalamus or pituitary gland may reduce FSH and LH production and cause secondary hypogonadism.

Does infertility mean my testosterone is low?

No.

Germ cells are generally more sensitive to chemotherapy and radiation than testosterone-producing Leydig cells.

A man can therefore have azoospermia with normal testosterone.

Can chemotherapy cause erectile dysfunction?

It can contribute indirectly through hormonal changes, fatigue, vascular or neurological effects and psychological distress, but infertility itself does not automatically produce erectile dysfunction.

Should I bank sperm before chemotherapy?

Yes, when future biological parenthood could be important and the medical situation allows.

The 2025 ASCO guideline and 2026 ASRM guidance recommend discussing sperm cryopreservation before gonadotoxic cancer treatment.

How many sperm samples should be frozen?

More than one specimen is desirable when time and health permit because this increases future fertility-treatment options.

However, even one useful sample may be valuable for ICSI.

Cancer treatment should not be dangerously delayed to collect multiple samples.

What if I cannot produce sperm by masturbation?

Assisted ejaculation or surgical sperm retrieval may be possible.

ASCO specifically recognizes testicular sperm extraction when an adequate semen specimen cannot be obtained before treatment.

Can sperm be retrieved during testicular-cancer surgery?

In appropriately selected azoospermic patients, Onco-TESE can sometimes be coordinated with cancer surgery.

Can fertility be preserved in boys who have not reached puberty?

Ordinary sperm banking is impossible because mature sperm are not yet produced.

Testicular tissue cryopreservation remains experimental and should generally be offered through appropriate clinical research programmes.

Can I try for pregnancy immediately after chemotherapy ends?

Usually not.

Recommendations differ depending upon treatment.

Current EAU guidance advises contraception through treatment and for at least six months afterward in testicular-cancer treatment contexts, while AUA/ASRM guidance advises avoiding pregnancy for at least twelve months after chemotherapy or radiotherapy.

Follow the interval recommended by your own oncology and reproductive teams.

Why should pregnancy be delayed?

Recently exposed sperm may have increased DNA or chromosome damage.

Waiting allows newly developing sperm to replace treatment-exposed sperm.

Are babies born to male cancer survivors at high risk of abnormalities?

Large survivor studies have generally been reassuring and have not shown a major overall increase in genetic abnormalities among children conceived after appropriately completed treatment.

What if azoospermia remains several years after chemotherapy?

A reproductive-urology evaluation may be appropriate.

In selected men, micro-TESE can sometimes identify focal residual sperm production.

What is micro-TESE?

Microdissection testicular sperm extraction uses an operating microscope to search within the testicle for small areas where sperm production remains.

How successful is micro-TESE after chemotherapy?

Success varies greatly.

A recent 2026 study reported sperm retrieval in approximately **48.5% of 33 post-chemotherapy azoospermic men**, while other cohorts show different results.

These percentages should not be interpreted as guarantees.

Does previous alkylating chemotherapy reduce micro-TESE success?

It can.

Studies indicate substantially poorer sperm retrieval after heavier alkylating-agent exposure.

If sperm are found with micro-TESE, can pregnancy occur naturally?

No.

Testicular sperm obtained surgically are generally used through **IVF with ICSI**.

Can one sperm be enough for ICSI?

One viable sperm is required for each suitable mature egg undergoing ICSI.

This is why ICSI can be useful even when sperm are extremely scarce.

Can testosterone treatment help sperm recover?

Ordinary testosterone replacement does not stimulate sperm production and can actually suppress remaining spermatogenesis.

Fertility goals should therefore be discussed before testosterone therapy.

Can hormonal treatment help after brain radiotherapy?

Sometimes.

If infertility results from deficient pituitary FSH/LH rather than destruction of the testicular germ cells, specialist gonadotropin treatment may be considered.

Can fertility recover 5 or 10 years after chemotherapy?

Late recovery can occur in some men, depending upon remaining spermatogonial stem cells and the treatment received.

Persistent azoospermia for many years makes spontaneous recovery less likely, but fertility should be evaluated rather than assumed.

Can Unani medicine restore sperm after chemotherapy?

There is currently insufficient direct high-quality evidence showing that Unani medicine can reliably restore spermatogenesis after severe chemotherapy-induced germ-cell destruction.

Unani treatment may have a supportive role in selected survivors' overall reproductive, nutritional, metabolic and sexual health after appropriate oncology review.

Can Unani medicine reverse radiation damage to the testes?

There is no established evidence that an Unani formulation can regenerate germ cells completely destroyed by high-dose radiation.

Supportive treatment and regeneration of remaining function are different concepts.

Should herbal fertility medicines be taken during chemotherapy?

Not without oncology approval.

Herbal medicines and supplements can interact with anticancer medicines, and some high-dose antioxidant supplements may potentially interfere with cancer-treatment effects.

Can lifestyle improve fertility after chemotherapy?

Healthy weight, smoking cessation, exercise, adequate sleep and avoidance of anabolic steroids can support general reproductive health.

But lifestyle changes cannot guarantee recovery when germ-cell injury is severe.

A Message From Dr. Nizamuddin Qasmi

When a cancer survivor brings me a semen report saying:

“Azoospermia — sperm not seen,”

I do not immediately say:

“Your fertility is permanently lost.”

I first ask:

When did you finish chemotherapy?

Which drugs were given?

Was radiation given?

How much testicular radiation occurred?

Was sperm already abnormal before treatment?

What is your FSH?

What is your testosterone?

Was sperm frozen before therapy?

A man tested six months after chemotherapy is very different from a man who remains azoospermic ten years after high-dose alkylating treatment and total-body irradiation.

The report may contain the same word:

azoospermia

but the prognosis may not be the same.

What I Tell Patients About Recovery

I explain:

Sperm production is slow.

We cannot judge testicular recovery from a few weeks of treatment.

When surviving stem cells remain, regeneration can require months or years.

That is why patience and objective follow-up matter.

At the same time, we should not continue empirical medicines indefinitely if evidence suggests severe permanent damage.

At some point the more rational pathway may be:

- use frozen pretreatment sperm,
- consider micro-TESE,
- proceed to IVF/ICSI,
- discuss alternative reproductive options.

Good fertility care means knowing when to support recovery and when to move toward reproductive technology.

What I Tell Patients Before Cancer Treatment

When possible, I strongly encourage fertility discussion **before chemotherapy or radiotherapy starts**.

Even if the patient says:

"I am unmarried,"

or:

"I am only 19,"

future fertility may become important later.

Sperm cryopreservation is considerably simpler before gonadotoxic treatment than trying to recover fertility after severe testicular damage has already occurred.

The 2025 ASCO update emphasizes exactly this approach: fertility discussions should occur at diagnosis and then continue throughout survivorship.

Current Medical Understanding

Our understanding of post-cancer male fertility has advanced considerably.

First: fertility preservation is part of cancer care.

The **2025 ASCO guideline** and **2026 ASRM guidance** recommend prompt fertility counselling and sperm cryopreservation before gonadotoxic therapy whenever appropriate.

Second: cancer survivors should be reassessed later.

The latest ASCO update specifically extends fertility care into **survivorship**, recognizing that reproductive goals may change years after treatment.

Third: recovery can take years.

Current EAU evidence shows recovery of spermatogenesis over approximately one to four years following chemotherapy in many testicular-cancer survivors.

Fourth: treatment intensity matters.

Alkylating chemotherapy and direct testicular or total-body radiation remain among the greatest threats to future sperm production.

Fifth: persistent azoospermia does not always end fertility treatment.

Recent 2026 evidence shows that micro-TESE can retrieve sperm in a meaningful subset of carefully selected post-chemotherapy azoospermic men.

Conclusion

Male Fertility After Chemotherapy or Radiotherapy is an increasingly important part of cancer survivorship.

Cancer treatment can affect sperm production through:

- chemotherapy-induced germ-cell injury,
- radiation damage,
- testicular injury,
- pituitary hormonal disruption,
- intensive stem-cell-transplant conditioning.

The severity varies dramatically.

Some men experience temporary reductions in sperm concentration.

Others develop azoospermia that later recovers.

Others sustain permanent loss of sperm-producing tissue.

Among chemotherapy agents, **alkylating drugs and higher cumulative exposures carry particularly important reproductive risk**.

Radiotherapy risk depends largely upon whether the testes receive direct or scattered radiation and upon dose. Germ cells are considerably more radiosensitive than testosterone-producing Leydig cells.

The best opportunity for fertility preservation is usually **before treatment begins**.

Current **ASCO 2025** and **ASRM 2026** guidance recommends counselling patients about reproductive risk and offering sperm cryopreservation to post-pubertal males before gonadotoxic therapy.

If sperm cannot be ejaculated or the patient is already azoospermic, surgical sperm retrieval such as Onco-TESE may be considered in selected situations.

For prepubertal boys, testicular tissue cryopreservation remains experimental.

After treatment, one early abnormal semen report should not automatically be interpreted as permanent infertility.

Sperm production may recover over several years.

When azoospermia remains persistent, modern reproductive urology may still provide options.

A recent 2026 series found sperm through micro-TESE in almost half of its selected post-chemotherapy azoospermic patients, although success varies greatly according to chemotherapy exposure and individual testicular damage.

From the **Unani perspective**, cancer survivors can be approached through a whole-person framework that considers:

- Mizaj,
- nutrition,
- digestion,
- sleep,
- physical recovery,
- metabolic health,
- psychological wellbeing,
- sexual health.

Published Unani research has reported improvement in semen parameters in selected men with ordinary idiopathic oligospermia.

However, those findings cannot be interpreted as proof that Unani medicine regenerates testicular germ cells destroyed by chemotherapy or radiotherapy.

During active cancer treatment, herbal products and high-dose supplements also require particular caution because clinically important interactions with anticancer treatment can occur.

At **Saira Health Care**, my approach is therefore supportive, integrative and diagnosis-led:

understand the exact cancer treatment, assess remaining reproductive function, allow appropriate time for recovery, protect fertility before treatment whenever possible, evaluate semen and hormones objectively, use cryopreserved sperm when available, consider micro-TESE and ICSI when appropriate, support general health through individualized Unani principles, and never compromise effective cancer treatment for an unproven fertility remedy.

My most important message to cancer survivors is:

Azoospermia after chemotherapy or radiotherapy deserves proper evaluation—not immediate hopelessness and not false promises.

Some men recover sperm naturally.

Some have sperm preserved before treatment.

Some can have sperm recovered surgically.

And for many survivors, modern reproductive medicine provides options that were unavailable only a generation ago.

About the Author

Dr. Nizamuddin Qasmi

Founder & Chief Physician, Saira Health Care
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Qualifications & Professional Training

BUMS — Hamdard University, Delhi
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Certificate in Urology — London, UK
Masters in Male Infertility — MasterHealthPro (HealthPro)
Integrated Sexual and Reproductive Health (ISRH) — UNFPA

Dr. Nizamuddin Qasmi's clinical work at **Saira Health Care** focuses on sexual disorders, male reproductive health and infertility.

His approach to men experiencing fertility problems after cancer treatment emphasizes distinguishing temporary sperm suppression from persistent testicular failure and separating fertility problems from sexual dysfunction.

Evaluation may include review of chemotherapy and radiation exposure, semen analysis, hormonal assessment, reproductive history, fertility-preservation history and appropriate coordination with oncology, reproductive urology and IVF/ICSI specialists.

Where medically appropriate, individualized Unani principles may be incorporated as supportive care for general reproductive, nutritional, metabolic and sexual wellbeing without replacing evidence-based oncology or fertility treatment.

Medical Disclaimer

This article is intended for health education and general public awareness. It does not provide cancer treatment advice or establish an individual fertility diagnosis.

Cancer patients should never delay, reduce, stop or modify chemotherapy or radiotherapy in an attempt to preserve fertility without direct advice from their oncology team.

Whenever possible, fertility preservation should be discussed **before gonadotoxic treatment begins**.

Cancer survivors with persistent oligospermia or azoospermia should receive appropriate evaluation by an andrologist, reproductive urologist or fertility specialist.

The safe interval before attempting conception varies according to cancer type and treatment. Patients should follow the recommendations of their treating oncologist and reproductive team.

Herbal, Unani, nutritional and antioxidant products should not be started during active chemotherapy, radiotherapy, immunotherapy or targeted therapy without oncology review because potentially important treatment interactions may occur.

Micro-TESE can retrieve sperm in some men with persistent post-chemotherapy azoospermia, but it cannot guarantee sperm recovery, fertilization, pregnancy or live birth.