

Abnormal Sperm Morphology (Teratozoospermia): Causes, Diagnosis, Treatment and the Role of Unani Medicine

By Dr. Nizamuddin Qasmi

Founder & Chief Physician, Saira Health Care
Focused Practice in Sexual Disorders & Infertility

BUMS – Hamdard University, Delhi

MD

CGO

Certificate in Infertility – MGBIMS, Delhi

Certificate in Urology – London, UK

Masters in Male Infertility – MasterHealthPro (HealthPro)

Integrated Sexual and Reproductive Health – ISRH, UNFPA

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Introduction: “Doctor, My Sperm Morphology Is Only 2%. Can I Become a Father?”

One of the semen-analysis results that causes considerable anxiety is:

Normal sperm morphology: 1%

or:

Normal forms: 2%

Sometimes a patient comes to me extremely worried and says:

“Doctor, 98% of my sperm are abnormal. Does this mean I am infertile?”

My first response is:

Please do not interpret sperm morphology that way.

A result showing 2% normal forms does **not** mean that 98% of your sperm are genetically defective, useless or incapable of contributing to pregnancy.

It also does not mean that your future child has a 98% risk of abnormalities.

Sperm morphology is a laboratory assessment of the external shape and structure of sperm cells under standardized microscopic criteria.

The medical term for an abnormally low percentage of normally shaped sperm is **teratozoospermia**, sometimes called **teratospermia**.



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According to current European guidance based on the WHO Sixth Edition semen-analysis methodology, approximately **4% normal forms** represents the lower fifth-percentile reference value when strict morphology criteria are used. Importantly, WHO reference limits are statistical values—not an absolute line separating fertile from infertile men.

I consider this distinction extremely important because sperm morphology is probably one of the most misunderstood parts of semen analysis.

A man can have:

- 2% normal morphology and become a father naturally,
- 3% normal morphology and have successful IUI or IVF,
- 4% or more normal morphology and still experience infertility for another reason.

Modern research increasingly shows that **isolated abnormal morphology has limited ability to predict whether a man is fertile or infertile**. A 2024 review concluded that the clinical and prognostic value of morphology alone is limited, and another study found morphology below the conventional normal threshold in more than half of a small group of proven fertile men.

Therefore, at **Saira Health Care**, I do not treat a morphology percentage in isolation.

I evaluate:

sperm count + total sperm number + motility + morphology + semen volume + reproductive history + hormones + testicular health + varicocele + lifestyle + female-partner fertility.

That complete picture is much more useful than one percentage.

What Is Sperm Morphology?

Morphology simply means:

shape and structure.

A mature sperm cell has three major regions:

1. **Head**
2. **Midpiece or neck region**
3. **Tail or flagellum**

Each has an important biological function.



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The Sperm Head

The sperm head contains the father's genetic material.

A normally shaped sperm head is generally smooth and oval and contains a highly compacted nucleus.

At the front of the head is a specialized structure known as the:

acrosome.

The acrosome contains enzymes and proteins involved in the sperm's interaction with the egg.

Abnormal head morphology may include:

- unusually large heads,
- unusually small heads,
- round heads,
- tapered heads,
- pyriform or pear-shaped heads,
- amorphous heads,
- vacuolated heads,
- double heads,
- abnormal acrosomes,
- or absence of the acrosome.

Some specific and uniform head abnormalities can have major reproductive significance.

I discuss these later in this article.

The Midpiece

The midpiece connects the head to the tail and contains mitochondria that provide energy for movement.

Possible abnormalities include:

- bent neck,
- asymmetrical attachment,
- thickened midpiece,



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- thin midpiece,
- irregular midpiece,
- or excessive residual cytoplasm.

Such defects may sometimes occur together with reduced sperm motility.

The Tail

The tail allows the sperm to move through the reproductive tract.

Possible tail abnormalities include:

- short tail,
- coiled tail,
- bent tail,
- double tail,
- absent tail,
- or irregular flagellar structure.

Certain severe, uniform tail abnormalities can have a genetic basis and may be associated with profound motility problems. Modern genetic research has identified numerous genes associated with specific sperm-head and flagellar defects.

What Is Considered Normal Sperm Morphology?

Modern morphology examination is deliberately strict.

The WHO Sixth Edition recommends standardized assessment using strict morphology principles, including Tygerberg-style criteria with appropriate staining techniques.

Current lower reference values include approximately:

- **Sperm concentration: 16 million/mL**
- **Total sperm number: 39 million/ejaculate**
- **Progressive motility: 30%**
- **Total motility: 42%**
- **Normal morphology: 4%**
- **Semen volume: 1.4 mL**



The lower fifth-percentile value for normal sperm morphology is approximately:

4% normal forms

Traditionally, fewer than 4% normal forms is described clinically as:

Teratozoospermia

However, WHO emphasizes that these reference values should **not** be interpreted as strict boundaries between fertility and infertility.

Why Does 4% Sound So Low?

Patients often ask:

“Doctor, if only 4% normal sperm are considered acceptable, doesn't that mean 96% are abnormal?”

Human sperm morphology is naturally very variable.

The criteria for calling a sperm cell “normal” under strict microscopic assessment are extremely demanding.

A sperm may be labelled morphologically abnormal because of relatively small differences in:

- head dimensions,
- head contour,
- acrosomal appearance,
- midpiece shape,
- residual cytoplasm,
- or tail structure.

Therefore, the percentage of strictly normal sperm is naturally much lower than many patients expect.

The WHO manual itself explains that the concept of a “normal” spermatozoon is more complicated than ordinary use of the word “normal,” because morphology classification is based on stringent structural criteria.

Does Abnormal Morphology Mean the Sperm Has Abnormal DNA?



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Not necessarily.

This is another very important distinction.

External shape and genetic integrity are not exactly the same thing.

A sperm that appears morphologically abnormal under the microscope does not automatically have abnormal chromosomes or damaged DNA.

Likewise, a sperm that looks perfectly normal can still contain DNA damage.

This is why standard morphology and **sperm DNA fragmentation** are different investigations.

A 2025 systematic review found a moderate relationship between abnormal morphology and higher DNA-fragmentation measurements overall, particularly with certain sperm-head defects, but morphology cannot be used as a direct substitute for DNA-fragmentation testing.

Does Poor Morphology Cause Infertility?

It can contribute, particularly when morphology is severely abnormal and occurs together with:

- low sperm count,
- poor motility,
- high DNA fragmentation,
- varicocele,
- genetic sperm defects,
- or another male-fertility disorder.

However:

Isolated teratozoospermia is much more complicated.

“Isolated” means:

- sperm count is reasonably normal,
- motility is reasonably normal,
- but morphology is below the reference value.

Modern evidence regarding isolated teratozoospermia is conflicting.



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A detailed 2024 review concluded that although abnormal morphology has been associated with oxidative stress and sperm DNA damage, the relationship between isolated teratozoospermia and natural pregnancy or ART outcomes remains uncertain.

Another contemporary review similarly concluded that sperm morphology alone has relatively limited diagnostic and prognostic value in many fertility settings.

This is why I tell patients:

Do not let one morphology percentage decide your entire fertility prognosis.

Is 0% Normal Morphology the Same as Sterility?

No.

Even a laboratory report showing:

0% normal forms

does not automatically prove that natural conception is impossible.

However, such a report deserves:

- confirmation in an experienced laboratory,
- careful examination of the exact defect pattern,
- evaluation of count and motility,
- assessment of fertility history,
- and consideration of whether a specific monomorphic abnormality is present.

There is a major difference between:

many different minor abnormalities producing 0–1% normal forms

and

almost every sperm having exactly the same severe structural abnormality.

The second pattern can suggest a specific genetic condition.

Polymorphic vs Monomorphic Teratozoospermia

This is an important concept that many routine fertility articles do not explain.

Polymorphic Teratozoospermia



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The sperm show a variety of abnormalities.

For example:

- some have tapered heads,
- some have amorphous heads,
- some have midpiece defects,
- some have coiled tails.

This is the pattern most often seen in ordinary abnormal semen analyses.

It may be associated with:

- varicocele,
- oxidative stress,
- lifestyle factors,
- testicular dysfunction,
- infection or inflammation,
- environmental exposure,
- or unexplained male infertility.

Monomorphic Teratozoospermia

Nearly all sperm show the **same characteristic abnormality**.

This is less common but can be much more clinically important.

Examples include:

- globozoospermia,
- macrozoospermia,
- acephalic sperm syndrome,
- and multiple morphological abnormalities of the sperm flagella.

These conditions can have a strong genetic basis.

Globozoospermia: Round-Headed Sperm

Globozoospermia is a rare condition in which most or all sperm have:



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- round heads,
- abnormal nuclear organization,
- and absent or severely abnormal acrosomes.

Because the acrosome has an important role in fertilization, men with complete globozoospermia may experience severe infertility even when sperm concentration is relatively reasonable.

Several genes have been associated with globozoospermia, particularly:

DPY19L2

and, less commonly, genes such as:

- SPATA16,
- PICK1,
- ZBP1,
- and others.

These patients should not simply be given antioxidants for a year without appropriate reproductive and genetic assessment.

Macrozoospermia: Very Large-Headed Sperm

Macrozoospermia is another rare monomorphic abnormality.

Typical sperm may show:

- very large heads,
- abnormal nuclear content,
- and sometimes multiple tails.

This condition is strongly associated with mutations in the:

AURKC gene

and sperm can have a very high frequency of chromosome abnormalities.

Therefore, when a laboratory reports a highly characteristic macrozoospermic pattern, genetic assessment can be far more important than simply prescribing a “sperm morphology medicine.”



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Multiple Morphological Abnormalities of the Flagella

Some men have severe tail abnormalities accompanied by markedly impaired motility.

Modern genetic research has linked multiple morphological abnormalities of the sperm flagella—sometimes abbreviated **MMAF**—with several genes affecting flagellar structure and function.

These patients may have a combination of:

abnormal morphology + very poor motility.

A specialist fertility evaluation is important.

Acephalic Sperm Syndrome

In rare cases, sperm may have absent heads or severe abnormalities at the head-tail connection.

Genes including:

- SUN5,
- PMFBP1,
- TSGA10

have been implicated in this phenotype.

Again, this is completely different from ordinary mild teratozoospermia.

Symptoms of Abnormal Sperm Morphology

Teratozoospermia usually has **no physical symptoms**.

A man usually cannot:

- feel abnormal morphology,
- see it,
- or identify it from semen appearance.

He may have completely normal:

- sexual desire,
- erections,
- intercourse,



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- ejaculation,
- orgasm,
- semen volume,
- and genital appearance.

The condition is typically discovered during:

fertility evaluation.

Abnormal Semen Appearance Does Not Diagnose Morphology

I frequently hear:

“My semen is thin, so my morphology must be bad.”

or:

“My semen is thick, so my sperm must be healthy.”

These assumptions are incorrect.

Morphology can only be evaluated microscopically after appropriate semen preparation and staining.

Semen:

- thickness,
- colour,
- appearance,
- or amount

cannot reliably tell you what percentage of sperm have normal morphology.

Can Abnormal Morphology Cause Recurrent Miscarriage?

Male factors may contribute to recurrent pregnancy loss, but morphology alone should not automatically be blamed.

A systematic review and meta-analysis found differences in several semen parameters—including morphology—between recurrent-pregnancy-loss groups and controls. However, a later umbrella review concluded that evidence linking conventional morphology specifically with recurrent pregnancy loss remains weaker than the evidence for **sperm DNA fragmentation**.



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Therefore, if a couple has repeated miscarriages, I do not simply say:

“Your morphology is 2%, therefore that caused the miscarriage.”

That conclusion would be too simplistic.

A complete recurrent-pregnancy-loss assessment is needed.

In selected male partners, sperm DNA-fragmentation testing may also be considered.

Sperm Morphology and DNA Fragmentation

Sperm DNA fragmentation measures breaks in sperm DNA.

Higher levels have been associated with:

- reduced natural conception,
- impaired embryo development,
- miscarriage,
- recurrent pregnancy loss,
- and poorer outcomes in some assisted-reproductive settings.

Current EAU guidance recognizes that sperm DNA fragmentation may be particularly relevant in selected cases of:

- recurrent pregnancy loss,
- unexplained male infertility,
- or repeated ART failure.

However, DNA-fragmentation testing is **not required for every man with morphology below 4%**.

The test should be ordered when it will meaningfully influence clinical management.

Causes of Abnormal Sperm Morphology

There is no single cause.

The possible causes include:

- varicocele,
- genetic abnormalities,
- testicular dysfunction,



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- smoking,
- obesity,
- heavy alcohol consumption,
- oxidative stress,
- infection or inflammation,
- environmental exposures,
- heat,
- fever,
- medications,
- anabolic steroids,
- chronic medical disease,
- advancing paternal age,
- and unexplained factors.

Often several factors coexist.

1. Varicocele

A **varicocele** is an abnormal enlargement of veins around the testicle.

Possible effects include:

- increased scrotal temperature,
- oxidative stress,
- impaired testicular environment,
- sperm DNA damage,
- reduced sperm concentration,
- poor motility,
- and abnormal morphology.

Current EAU guidance recognizes an association between varicocele and poorer semen quality.



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Does Varicocele Surgery Improve Morphology?

In appropriately selected infertile men with a **clinical, palpable varicocele** and abnormal semen parameters, varicocele repair may improve semen quality and may improve the chance of pregnancy.

However, the effect specifically on morphology is less certain than patients are sometimes told.

EAU evidence reviews have found improvement in some pre-versus-post treatment morphology results, while controlled comparisons have produced less consistent morphology benefits.

A 2024 meta-analysis specifically examining men with isolated teratozoospermia and palpable varicocele found improvement in morphology after varicocelectomy, but it also identified substantial heterogeneity and publication bias and concluded that further evidence is required.

Therefore:

Not every man with 2% morphology and an ultrasound-detected varicocele needs surgery.

The varicocele should be:

- clinically significant,
- assessed alongside infertility,
- and considered within the couple's overall fertility plan.

2. Smoking

Smoking is one of the most important modifiable male-reproductive-health factors.

Current European evidence shows a negative association between smoking and semen parameters.

Smoking can increase oxidative stress and may affect:

- concentration,
- motility,
- morphology,
- and DNA integrity.

Therefore, if a man with teratozoospermia smokes, stopping smoking is one of the first changes I recommend.



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No fertility tonic can fully compensate for ongoing harmful exposure.

3. Obesity

Excess body weight can influence:

- reproductive hormones,
- inflammation,
- oxidative stress,
- testicular temperature,
- and metabolic health.

A systematic review and meta-analysis found that obese men had poorer sperm concentration, total sperm number, motility and normal morphology compared with men of normal body weight.

However, weight management should be healthy and gradual.

Severe crash dieting is not fertility treatment.

4. Alcohol

Moderate alcohol exposure has produced inconsistent findings, but chronic heavy intake may negatively affect male reproductive health.

EAU guidance advises infertile men to reduce high alcohol consumption as part of fertility optimization.

5. Recreational Drugs and Anabolic Steroids

Bodybuilding steroids and externally administered testosterone are especially concerning.

They suppress the hormonal signals needed for sperm production.

This may cause:

- low sperm count,
- very severe oligospermia,
- or even azoospermia.



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The morphology result should never distract the physician from recognizing steroid-induced spermatogenic suppression when present.

6. Oxidative Stress

Oxidative stress occurs when reactive oxygen species overwhelm the body's antioxidant systems.

Sperm cells are particularly vulnerable because their membranes contain high levels of polyunsaturated fatty acids and they have limited ability to repair certain cellular damage.

Excess oxidative stress can contribute to:

- membrane damage,
- impaired motility,
- abnormal morphology,
- altered acrosomal function,
- and sperm DNA fragmentation.

EAU guidance identifies oxidative stress as an important mechanism in male infertility, while also noting that routine oxidative-stress laboratory testing remains insufficiently standardized for general clinical use.

7. Genital Infection and Inflammation

Certain infections and chronic inflammatory conditions of the male reproductive tract can affect semen quality.

EAU evidence indicates that chronic prostatitis/chronic pelvic pain and some organisms may be associated with altered:

- sperm concentration,
- motility,
- morphology,
- and DNA integrity.

However:

Antibiotics should not be prescribed simply because morphology is abnormal.

Treatment is appropriate when there is evidence of infection.



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8. High Fever and Serious Illness

Sperm production is sensitive to fever.

A major febrile illness can temporarily reduce semen quality for several weeks or months because developing sperm cells may have been affected.

Therefore, if a semen report suddenly worsens, I often ask:

“Did you have high fever or a significant illness within the last three months?”

A temporary abnormality should not automatically be treated as permanent infertility.

9. Diabetes and Metabolic Disease

Poor metabolic health can influence:

- hormones,
- oxidative stress,
- erectile and ejaculatory function,
- and sperm quality.

Diabetes should therefore be properly treated as part of reproductive-health management.

I do not believe in giving a man fertility medicines while allowing severe diabetes to remain uncontrolled.

10. Environmental and Occupational Exposure

Certain men are exposed occupationally to:

- pesticides,
- solvents,
- heavy metals,
- industrial chemicals,
- radiation,
- or excessive heat.

These exposures may contribute to impaired spermatogenesis or oxidative damage.

The significance depends on:



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- dose,
- duration,
- protective measures,
- and individual susceptibility.

Occupation is therefore an important part of the infertility history.

11. Heat Exposure

The testes are located outside the abdominal cavity partly because sperm production functions optimally at a temperature below core body temperature.

Repeated significant heat exposure may adversely affect semen parameters in some men.

However, patients should avoid exaggerated internet advice.

Normal clothing or occasional heat exposure does not automatically cause teratozoospermia.

The focus should be on avoiding unnecessary **chronic excessive** heat.

12. Genetic Causes

Genetic abnormalities become particularly important when:

- almost every sperm has the same abnormality,
- sperm heads are uniformly round,
- sperm heads are abnormally large,
- sperm tails are uniformly severely abnormal,
- or severe abnormalities coexist with very low count or motility.

Modern genetic reviews have identified dozens of genes associated with specific sperm morphological phenotypes.

This is one of the biggest advances in our understanding of abnormal morphology.

13. Idiopathic Teratozoospermia

Sometimes a complete evaluation finds:

- no clinically significant varicocele,



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- no infection,
- no major hormonal abnormality,
- no clear genetic syndrome,
- and no major lifestyle exposure.

The condition may then be described as:

idiopathic teratozoospermia.

This simply means:

the cause remains unexplained using current routine investigations.

Treatment in these cases can be challenging because there is no single abnormality to correct.

Diagnosis of Abnormal Sperm Morphology

The basic diagnostic test is:

Semen Analysis

A high-quality semen analysis should assess much more than morphology.

I review:

- semen volume,
- sperm concentration,
- total sperm count,
- progressive motility,
- total motility,
- morphology,
- vitality when appropriate,
- white blood cells where relevant,
- liquefaction,
- and other laboratory observations.

WHO's Sixth Edition provides standardized laboratory procedures intended to improve reliability and comparability of semen assessment.



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Why Laboratory Quality Matters So Much for Morphology

Morphology is one of the most subjective elements of semen analysis.

It depends on:

- sample preparation,
- staining technique,
- microscope quality,
- laboratory training,
- strictness of interpretation,
- and quality-control procedures.

Two laboratories may sometimes provide noticeably different morphology percentages from similar samples.

For that reason, I advise patients with an unexpected severe morphology result to use an experienced fertility laboratory and, where clinically appropriate, confirm abnormal results.

Should the Semen Analysis Be Repeated?

Often, yes.

Semen parameters fluctuate naturally.

Current EAU guidance states that if semen analysis is normal according to reference criteria, one analysis may be sufficient, whereas persistent abnormalities on at least two analyses warrant further andrological investigation.

A repeat test is particularly useful when:

- the first report was unexpected,
- the laboratory quality is uncertain,
- there was a recent fever,
- part of the specimen was lost,
- or treatment decisions depend heavily on the result.

How Long Does Sperm Production Take?



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Human sperm formation takes approximately two and a half months, followed by additional maturation.

Therefore, significant biological improvement after treating a reversible cause is usually evaluated over several weeks to months rather than after five or ten days.

This is why I generally discourage unnecessary weekly semen analyses.

The sperm being tested today began developing many weeks earlier.

Medical History

When evaluating abnormal morphology, I ask about:

- duration of infertility,
- previous pregnancies,
- childhood testicular disease,
- undescended testes,
- testicular trauma,
- surgery,
- infection,
- fever,
- varicocele,
- medications,
- testosterone,
- anabolic steroids,
- smoking,
- alcohol,
- recreational drugs,
- occupational exposure,
- diabetes,
- body weight,
- and cancer treatment.

The morphology report is only the beginning of the investigation.



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Physical Examination

When indicated, examination may assess:

- testicular size,
- testicular consistency,
- epididymis,
- vas deferens,
- clinically palpable varicocele,
- secondary sexual characteristics,
- and signs of hormonal disease.

A semen report cannot replace physical examination.

Hormonal Tests

Hormonal testing becomes particularly relevant when morphology abnormalities coexist with:

- low sperm concentration,
- small testes,
- low libido,
- erectile dysfunction,
- or signs of endocrine disease.

Possible tests include:

- FSH,
- LH,
- morning testosterone,
- prolactin,
- and others according to the clinical picture.

Morphology alone does not automatically require every hormone test.



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Genetic Testing

Routine genetic testing is not required simply because morphology is 3%.

However, genetic testing becomes particularly relevant when there is:

- severe monomorphic teratozoospermia,
- globozoospermia,
- macrozoospermia,
- specific flagellar syndromes,
- or severe abnormalities combined with markedly reduced sperm concentration.

Modern literature supports targeted genetic testing for several characteristic morphological syndromes.

Sperm DNA-Fragmentation Testing

I do not recommend DNA-fragmentation testing simply because every patient wants the most advanced laboratory panel.

Current EAU guidance considers SDF testing particularly relevant in selected situations including:

- unexplained infertility,
- recurrent pregnancy loss,
- and repeated ART failure.

The test becomes much more meaningful when it answers a specific clinical question.

Treatment of Abnormal Sperm Morphology

There is no tablet specifically approved that reliably converts:

1% morphology → 8% morphology

in every patient.

Treatment must target the underlying cause and the couple's actual fertility problem.

1. Stop Smoking



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If the patient smokes, stopping tobacco is an important evidence-supported fertility intervention.

Current EAU guidance strongly recommends counselling infertile men about the detrimental effect of smoking and other lifestyle factors on sperm quality.

2. Improve Weight and Metabolic Health

If obesity is present, an individualized programme may include:

- appropriate calorie control,
- balanced nutrition,
- regular physical activity,
- diabetes management,
- treatment of metabolic disease,
- and improved sleep.

Healthy weight loss may support the hormonal and metabolic environment required for sperm production.

3. Exercise Regularly

Moderate regular exercise supports:

- cardiovascular health,
- body weight,
- insulin sensitivity,
- hormone balance,
- and psychological well-being.

EAU guidance reports that appropriate physical activity may be associated with better semen parameters.

However, excessive exercise combined with:

- anabolic steroids,
- extreme dieting,
- or chronic overheating



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may be harmful.

4. Reduce Heavy Alcohol Intake

A man with infertility should reduce heavy alcohol consumption.

This is particularly important if alcohol is also affecting:

- testosterone,
 - liver function,
 - body weight,
 - sleep,
 - or sexual function.
-

5. Avoid Testosterone and Anabolic Steroids When Fertility Is Desired

This warning cannot be repeated enough.

External testosterone can suppress the very hormones necessary for sperm production.

A man interested in fatherhood should always tell his physician about fertility goals before beginning testosterone replacement.

6. Treat Clinical Varicocele When Appropriate

When an infertile man has:

- a clinically palpable varicocele,
- abnormal semen parameters,
- and appropriate couple-level fertility circumstances,

varicocele treatment may be considered.

The effect on morphology alone is not guaranteed, but sperm quality and pregnancy probability may improve in appropriately selected patients.

7. Treat Genuine Infection or Inflammation

If a clinically relevant reproductive infection is diagnosed, it should be treated appropriately.

However:



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Abnormal morphology alone is not an indication for antibiotics.

Repeated unnecessary antibiotic courses can cause harm without improving fertility.

8. Correct Hormonal Disorders

Where a genuine hormonal disorder is identified, appropriate endocrine treatment may improve spermatogenesis.

The correct treatment depends on the hormonal diagnosis.

Again:

Hormonal treatment is not the same as indiscriminate testosterone replacement.

9. Antioxidants: Helpful or Over-Promoted?

Oxidative stress provides a logical reason why antioxidants have received enormous attention in male infertility.

Some trials and meta-analyses have reported improvement in:

- sperm concentration,
- motility,
- and normal morphology.

A very large 2026 systematic review and meta-analysis involving 101 studies and 11,889 infertile men found improvements in several semen parameters, including morphology, with antioxidant interventions. However, the authors still concluded that no definitive recommendation could be made regarding antioxidants as male-infertility therapy because of limitations and heterogeneity in the evidence.

Current EAU guidance is similarly cautious: antioxidant evidence remains conflicting, study quality is often poor, and routine antioxidant treatment for idiopathic infertility is not strongly recommended.

Therefore, I do not consider:

“Take antioxidants”

a complete fertility diagnosis or treatment plan.

Can IVF or ICSI Overcome Abnormal Morphology?



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Sometimes.

But morphology below 4% does **not automatically mean that ICSI is necessary.**

Recent literature increasingly questions the practice of choosing ART solely according to morphology.

A 2025 expert review concluded that the percentage of normal morphology should not, by itself, be used as a prognostic criterion for choosing between:

- IUI,
- IVF,
- or ICSI.

A 2024 review similarly noted that isolated teratozoospermia does not consistently predict poor ART outcomes.

Most recently, a 2026 study involving 856 couples with sperm-head abnormalities found that the preferred IVF-versus-ICSI strategy varied according to the **type and severity of the specific head defect**, with no significant overall difference in pregnancy or live-birth rates across several subgroups.

This supports individualized ART selection.

When Is ICSI Particularly Important?

ICSI may be especially relevant when teratozoospermia occurs together with:

- very low sperm concentration,
- severe motility impairment,
- previous fertilization failure,
- certain severe monomorphic sperm defects,
- or other major male-factor infertility.

With ICSI, an embryologist selects an individual sperm and injects it directly into an egg.

However, even ICSI does not correct every genetic sperm defect.

Specific syndromes may require additional:

- genetic evaluation,
- laboratory techniques,
- counselling,



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- or specialized reproductive strategies.

Abnormal Morphology and Natural Pregnancy

A man with isolated morphology below 4% may still achieve natural pregnancy.

The likelihood depends on the complete reproductive picture.

Factors include:

- female partner's age,
- ovarian reserve,
- ovulation,
- fallopian-tube status,
- sperm concentration,
- total motile sperm count,
- sexual frequency,
- duration of infertility,
- and the specific morphology pattern.

Therefore, natural conception should not be declared impossible solely on the basis of morphology.

The Female Partner Must Also Be Evaluated

Infertility belongs to the couple.

Suppose the husband has:

2% morphology

but:

- count is 50 million/mL,
- motility is excellent,
- and the female partner has bilateral tubal obstruction.

In that situation, morphology is not the principal fertility problem.

Likewise, a man with only mildly abnormal morphology may be part of a couple in which the woman's ovarian reserve is declining rapidly.



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Spending years trying to make morphology increase from 3% to 5% may waste valuable reproductive time.

The correct goal is:

achieving a healthy pregnancy—not making one semen number look perfect.

Abnormal Sperm Morphology in the Unani System of Medicine

As a physician trained in Unani medicine, I consider male reproductive health through a broader framework involving:

- Mizaj,
- reproductive-organ function,
- nutrition,
- digestion,
- physical activity,
- sleep,
- psychological state,
- environmental exposure,
- and general systemic health.

Classical Unani medicine was developed long before microscopic semen morphology could be measured.

Therefore, I want to make an important academic distinction:

There is no exact classical Unani equivalent of modern WHO-defined “<4% normal sperm morphology.”

Traditional Unani physicians described abnormalities in:

- Mani,
- reproductive capacity,
- testicular function,
- sexual and reproductive weakness,
- and disorders of the reproductive organs.

Modern teratozoospermia, however, is defined microscopically.

Therefore, I believe the most scientifically responsible approach is to combine:

classical Unani assessment

with

modern semen-analysis terminology.

Mizaj and Male Reproductive Health

Mizaj, or temperament, is central to Unani clinical assessment.

The patient's constitution, general physiology and functional balance are considered when treatment is selected.

Current Ministry of AYUSH descriptions confirm that Unani diagnostic and therapeutic practice gives significant importance to:

- Mizaj,
- physical condition,
- psychological health,
- and individualized treatment.

I find this individualized philosophy particularly valuable in male infertility because two men with the same morphology result may have very different underlying problems.

Akhlat: The Traditional Humoral Framework

Classical Unani medicine describes four primary humors:

- **Dam** – blood
- **Balgham** – phlegm
- **Safra** – yellow bile
- **Sauda** – black bile

and traditionally relates health to their appropriate qualitative and quantitative balance.

However, I explain to patients that these are:

traditional Unani physiological concepts

and not the same as modern:

- hormones,



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- sperm DNA,
- chromosomes,
- oxidative-stress markers,
- or semen parameters.

Responsible integrative medicine should not confuse the two systems of terminology.

Asbab-e-Sitta Zarooriya: Six Essential Factors

One of the Unani concepts I find most practically applicable to contemporary reproductive health is:

Asbab-e-Sitta Zarooriya

the six essential factors of life.

They traditionally include:

1. air and environment,
2. food and drink,
3. physical activity and rest,
4. psychological activity and rest,
5. sleep and wakefulness,
6. retention and elimination.

The Ministry of AYUSH continues to describe these factors as fundamental to Unani preventive and health-promoting care.

Several of these principles align well with modern male-fertility advice.

For example:

- smoking and environmental toxins can affect sperm health,
- obesity and inactivity are associated with poorer semen parameters,
- nutrition influences metabolic health,
- chronic stress can affect sexual and general health,
- adequate sleep supports endocrine well-being.

This is one area where the Unani whole-person approach can be particularly useful.



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Four Main Therapeutic Approaches in Unani Medicine

Official AYUSH literature describes four broad Unani therapeutic approaches:

Ilaj-bil-Ghiza

Dietotherapy

Ilaj-bit-Tadbir

Regimenal therapy

Ilaj-bid-Dawa

Pharmacotherapy

Ilaj-bil-Yad

Surgical treatment

For men with abnormal sperm morphology, the most relevant areas are usually:

- diet,
- lifestyle and regimenal management,
- individualized pharmacotherapy,
- and appropriate referral for surgical treatment when a structural cause such as clinically significant varicocele warrants it.

Ilaj-bil-Ghiza: Dietary Management

My nutritional approach is aimed at improving the physiological environment in which sperm are produced.

Depending on the patient, I assess:

- body weight,
- protein intake,
- vegetables,
- fruits,
- healthy fats,
- micronutrient adequacy,
- diabetes,



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- metabolic health,
- processed-food intake,
- hydration,
- smoking,
- and alcohol.

The objective is:

better reproductive and metabolic health.

It is not:

“Eat this particular fruit and morphology will become 10%.”

No food can guarantee a specific morphology percentage.

Ilaj-bit-Tadbir: Regimenal and Lifestyle Care

Regimenal treatment may focus on:

- physical activity,
- adequate rest,
- healthy sleep,
- stress reduction,
- weight management,
- and individualized lifestyle correction.

Classical Unani regimenal therapy also includes procedures such as:

- Dalk or massage,
- Hijama or cupping,
- and other traditional regimens.

However, I do **not** tell patients that Hijama has been scientifically proven to correct abnormal sperm morphology.

Current evidence is insufficient for that claim.

Such therapies, if used, should be supportive and individually selected rather than substitutes for:

- semen analysis,



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- varicocele evaluation,
- genetic assessment,
- or ART when these are required.

Ilaj-bid-Dawa: Individualized Unani Pharmacotherapy

This is an important area of Unani infertility practice.

Traditional formulations may be selected according to:

- Mizaj,
- semen profile,
- sperm count,
- motility,
- morphology,
- general vitality,
- metabolic condition,
- digestive health,
- reproductive history,
- and associated sexual symptoms.

I do not believe every patient with:

morphology 2%

should receive exactly the same formulation.

One man's problem may be associated with:

- varicocele.

Another with:

- smoking and obesity.

Another with:

- severe OAT syndrome.

Another with:

- monomorphic genetic teratozoospermia.



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Their treatments should not be identical.

What About Ashwagandha, Saffron, Ginseng, Fenugreek and Other Herbs?

Several herbs are widely promoted for male fertility.

Some have traditional reputations for:

- supporting vitality,
- reproductive health,
- or semen quality.

Some also have preliminary clinical studies.

However, I make an important distinction:

Evidence that a herb may improve one semen parameter in a small study does not prove that it reliably corrects clinically significant teratozoospermia.

Furthermore:

Evidence for one standardized extract cannot automatically be applied to every commercial product containing that plant.

Dose, formulation, purity and combination matter.

Therefore, I prefer individualized Unani pharmacotherapy rather than advertising one herb as a universal “morphology cure.”

Natural Does Not Mean Risk-Free

Patients sometimes take multiple supplements simultaneously because they believe:

“These are natural, so they cannot harm me.”

The Ministry of AYUSH's pharmacovigilance programme specifically warns against this misconception and emphasizes monitoring adverse reactions and promoting safer use of traditional medicines.

A patient may simultaneously be taking:

- diabetes medicines,
- blood-pressure treatment,
- anticoagulants,



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- antidepressants,
- fertility medicines,
- or other supplements.

Therefore, every physician should know what the patient is taking.

How Unani Medicine Can Be Useful in Abnormal Morphology

I believe the Unani system is particularly useful when it is used for what it does best:

individualized whole-person care.

It can contribute to treatment through:

- dietary correction,
- metabolic optimization,
- lifestyle improvement,
- sleep regulation,
- stress management,
- general reproductive-health support,
- and carefully selected traditional pharmacotherapy.

This can be especially appropriate in men with:

- idiopathic semen abnormalities,
- unhealthy lifestyle,
- poor nutritional habits,
- obesity or metabolic problems,
- stress,
- or multiple potentially reversible reproductive-health factors.

However:

Unani medicine should not be used to delay genetic investigation of globozoospermia or macrozoospermia.

It should not replace varicocele surgery when surgery is clearly indicated.

And it should not delay IVF/ICSI when time and couple-level fertility factors make assisted reproduction appropriate.



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That is what I consider responsible integrative care.

Dr. Nizamuddin Qasmi's Special Individualized Approach at Saira Health Care

When a patient comes to me with abnormal sperm morphology, I do not immediately prescribe a “morphology medicine.”

I follow a structured pathway.

Step 1: Confirm the Morphology Result

I first ask:

- Which laboratory performed the analysis?
- Was strict morphology assessment used?
- What percentage of normal forms was reported?
- Has the test been repeated?
- Was there fever or illness recently?

Because morphology is technically demanding, laboratory reliability matters.

Step 2: Review the Complete Semen Analysis

I assess:

- sperm concentration,
- total sperm count,
- progressive motility,
- total motility,
- morphology,
- semen volume,
- vitality,
- leukocytes where relevant,
- and other laboratory findings.

I want to know whether this is:



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isolated teratozoospermia

or:

oligo-astheno-teratozoospermia.

The second is generally more clinically significant.

Step 3: Understand the Morphology Pattern

I consider whether the abnormalities are:

Polymorphic

Many different defects.

or:

Monomorphic

Nearly all sperm showing one characteristic defect.

This distinction can determine whether genetic testing or specialized reproductive assessment is needed.

Step 4: Investigate the Cause

I assess for:

- varicocele,
- testicular abnormalities,
- hormonal problems,
- infection,
- smoking,
- obesity,
- diabetes,
- alcohol,
- anabolic steroids,
- medications,
- occupational exposure,



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- recent fever,
 - and genetic conditions where indicated.
-

Step 5: Evaluate Sexual Health

Because my focused practice includes both sexual disorders and infertility, I also evaluate:

- erectile function,
- ejaculation,
- sexual desire,
- intercourse frequency,
- and ability to have intercourse during the fertile period.

A perfect morphology result cannot create pregnancy if intercourse itself is not occurring effectively.

Step 6: Evaluate the Female Partner

I consider:

- female age,
- ovarian reserve,
- ovulation,
- tubal health,
- duration of infertility,
- previous pregnancy,
- and previous fertility treatment.

This helps determine how much time can reasonably be spent on male optimization before considering ART.

Step 7: Correct Reversible Factors

Depending on the patient, this can include:

- smoking cessation,
- weight management,



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- physical activity,
- control of diabetes,
- reduction of heavy alcohol,
- avoidance of steroids,
- better sleep,
- nutritional correction,
- and reduction of unnecessary reproductive toxins.

Current EAU guidance strongly supports improving these lifestyle factors in infertile men.

Step 8: Use Individualized Unani Treatment

Where suitable, I incorporate:

Ilaj-bil-Ghiza

Individualized nutrition.

Ilaj-bit-Tadbir

Lifestyle and regimenal care.

Ilaj-bid-Dawa

Selected Unani pharmacotherapy according to the patient's complete clinical condition.

I consider the treatment **supportive to reproductive physiology**, rather than promising that one formulation mechanically reshapes every abnormal sperm cell.

Step 9: Treat Specific Causes

If a clinically significant cause is identified, it should be addressed.

For example:

Clinical varicocele

Reproductive-urology assessment may be appropriate.

Hormonal disorder

Cause-specific endocrine treatment may be required.

Infection



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Appropriate antimicrobial treatment may be needed.

Genetic morphology syndrome

Genetic counselling and specialized reproductive treatment may be more important than empirical medicine.

Step 10: Consider Sperm DNA Testing Where Appropriate

If there are:

- repeated miscarriages,
- unexplained infertility,
- or repeated ART failures,

SDF testing may provide additional information.

It is not required simply because normal morphology is 3%.

Step 11: Repeat Semen Analysis at an Appropriate Interval

Sperm production requires time.

After treating reversible factors, I generally judge biological improvement over an appropriate spermatogenic interval rather than after a few days.

At follow-up, I do not look only for morphology improvement.

I look at:

- count,
 - motility,
 - morphology,
 - total motile sperm,
 - overall reproductive health,
 - and ultimately the couple's pregnancy prospects.
-

Step 12: Discuss ART Without Unnecessary Delay

If the couple's situation requires:

- IUI,



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- IVF,
- or ICSI,

I discuss or recommend appropriate fertility-centre evaluation.

My principle is:

Do not sacrifice reproductive time merely to chase a better morphology percentage.

This becomes particularly important when the female partner has:

- advanced reproductive age,
- reduced ovarian reserve,
- tubal disease,
- or another time-sensitive fertility problem.

Can Abnormal Morphology Become Normal?

Sometimes morphology improves after reversible factors are corrected.

Potential improvements may occur following:

- smoking cessation,
- treatment of appropriate varicocele,
- recovery from fever,
- improved metabolic health,
- reduction in oxidative stress,
- or other cause-specific interventions.

However, not every patient reaches above 4%.

And importantly:

Pregnancy can occur even if morphology remains below 4%.

The treatment goal should be improved reproductive potential—not simply a laboratory target.

How Long Should Treatment Be Tried?

There is no universal duration.



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The plan depends on:

- severity,
- cause,
- female partner's age,
- ovarian reserve,
- duration of infertility,
- and whether ART is already indicated.

A young couple with:

- isolated 3% morphology,
- excellent count,
- excellent motility,
- and short duration of infertility

may have time for conservative optimization.

A couple in which:

- morphology is 1%,
- sperm count is extremely low,
- motility is poor,
- and the female partner has low ovarian reserve

requires a very different strategy.

Individualization is essential.

Does Better Morphology Guarantee Pregnancy?

No.

Pregnancy requires successful interaction of many factors.

These include:

- sperm production,
- sperm movement,
- sperm function,



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- ovulation,
- egg quality,
- fallopian-tube function,
- fertilization,
- embryo development,
- and implantation.

Therefore:

A morphology increase from 2% to 6% is encouraging, but it does not guarantee pregnancy.

Likewise, a morphology value remaining at 2% does not automatically mean treatment failed if the couple conceives.

What Does Successful Treatment Mean?

For me, success is broader than changing one percentage.

Success may mean:

A patient with smoking-related semen abnormalities

Stops smoking and experiences overall improvement in semen quality.

A patient with clinical varicocele

Receives appropriate treatment and has improved reproductive parameters.

A patient with metabolic disease

Improves his weight, diabetes and overall reproductive health.

A patient with 2% isolated morphology

Learns that natural conception is still possible and avoids unnecessary IVF.

A patient with severe OAT

Receives timely ART counselling instead of wasting several years on unsupported medicines.

A man with globozoospermia

Receives the correct genetic and reproductive diagnosis rather than repeated empirical supplement therapy.

A couple experiencing recurrent miscarriage



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Receives appropriate investigation of both partners rather than automatically blaming one morphology number.

All of these are examples of successful fertility care.

Why I Avoid Guaranteed Success Rates

Patients naturally want to know:

“What percentage of morphology patients become normal with treatment?”

There is no scientifically honest universal percentage.

A man with:

3% morphology + smoking

is very different from:

0% morphology + complete globozoospermia.

Likewise:

isolated morphology abnormality

is different from:

severe OAT syndrome.

Therefore, at Saira Health Care, I prefer:

individual prognosis rather than universal cure percentages.

Common Myths About Sperm Morphology

Myth 1: If morphology is 2%, 98% of sperm are genetically abnormal.

Fact: Strict morphology classification concerns microscopic shape. It does not directly mean 98% of sperm carry defective genes.

Myth 2: Morphology below 4% means natural pregnancy is impossible.

Fact: Isolated morphology below 4% does not prove infertility. Modern research questions the ability of morphology alone to predict natural or assisted fertility outcomes.

Myth 3: 4% is a sharp fertile-versus-infertile boundary.



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Fact: WHO reference limits are statistical lower-percentile values and do not divide all men into fertile and infertile categories.

Myth 4: Abnormal morphology means the future baby will have abnormalities.

Fact: Routine morphology percentage is not a direct measurement of a sperm's chromosomes or the baby's risk of congenital abnormalities.

Myth 5: Thick semen means morphology is good.

Fact: Semen consistency cannot determine sperm morphology.

Myth 6: Thin semen means sperm are deformed.

Fact: Semen viscosity and microscopic sperm morphology are different measurements.

Myth 7: Every morphology problem is genetic.

Fact: Ordinary polymorphic teratozoospermia may be associated with lifestyle, varicocele, oxidative stress and many other factors. Certain **monomorphic** abnormalities have stronger genetic associations.

Myth 8: Every morphology problem can be cured with antioxidants.

Fact: Antioxidants may improve semen parameters in some studies, but current evidence remains too inconsistent to recommend them as a universal treatment.

Myth 9: Every abnormal morphology result requires ICSI.

Fact: Current evidence does not support selecting IUI, IVF or ICSI solely from the percentage of normal morphology.

Myth 10: Varicocele surgery always normalizes morphology.

Fact: Selected infertile men with clinical varicocele may benefit, but improvement is not guaranteed.



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Myth 11: Herbal medicines have no side effects.

Fact: Traditional medicines are biologically active, and AYUSH itself maintains a pharmacovigilance programme to monitor their safety.

Myth 12: Masturbation causes abnormal sperm shape.

Fact: Normal masturbation does not cause permanent teratozoospermia.

Frequently Asked Questions

What percentage of sperm morphology is considered normal?

Using current strict WHO-based morphology assessment, approximately **4% normal forms** represents the lower fifth-percentile reference value.

Is 3% morphology very bad?

It is below the commonly used reference threshold, but it should not be interpreted alone.

If sperm:

- concentration,
- motility,
- and total sperm number

are good, isolated 3% morphology may have much less significance than patients assume.

Is 2% morphology infertile?

Not automatically.

Some men with 2% morphology can father children naturally.

The entire couple's fertility profile must be evaluated.

Can pregnancy occur with 1% morphology?

Yes, it can.

The probability depends on many other male and female factors.

A 1% result should be taken seriously but should not be treated as proof of sterility.



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Can pregnancy occur with 0% normal forms?

Pregnancy may still be possible in some men, depending on the exact defect pattern and other semen parameters.

However, 0% morphology should be confirmed carefully and assessed for severe or monomorphic abnormalities.

Does abnormal sperm morphology cause birth defects?

Routine low morphology by itself does not directly predict congenital abnormalities.

Certain **specific genetic sperm syndromes**, however, may have reproductive or genetic implications and require specialist evaluation.

Can varicocele cause poor morphology?

Yes.

Varicocele is associated with impaired semen quality and oxidative stress in some infertile men.

Can morphology improve after varicocele surgery?

It may improve in selected men, particularly with clinically palpable varicocele and infertility, but improvement is not guaranteed.

Can smoking affect sperm morphology?

Yes.

Smoking is associated with poorer sperm quality and increased oxidative stress. Current EAU guidance advises infertile men to stop smoking.

Can obesity affect morphology?

Yes.

Meta-analytic evidence has associated obesity with reduced normal sperm morphology along with poorer count and motility.



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Can sperm morphology improve in three months?

Potentially, depending on the cause.

Because sperm development takes several weeks, meaningful changes from lifestyle or medical treatment generally require time.

Are antioxidants useful?

They may improve semen parameters in some patients, but evidence is inconsistent and no universal antioxidant regimen is currently established.

Can Unani medicine help?

Unani medicine can contribute to an individualized programme through:

- Ilaj-bil-Ghiza,
- Ilaj-bit-Tadbir,
- individualized Ilaj-bid-Dawa,
- nutrition,
- lifestyle optimization,
- metabolic-health support,
- sleep,
- stress management,
- and reproductive-health assessment.

The strongest role is within a **complete fertility programme**, not as a substitute for investigation of genetic or structural causes.

Is Hijama proven to improve sperm morphology?

At present, there is insufficient high-quality evidence to claim that Hijama reliably corrects teratozoospermia.

It should therefore not be advertised as a guaranteed morphology treatment.



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Does abnormal morphology mean IVF is necessary?

No.

ART choice depends on the:

- complete semen profile,
- specific sperm defect,
- duration of infertility,
- previous fertility treatment,
- and female-partner factors.

Morphology alone should not automatically determine IVF versus ICSI.

When Should You Consult a Male Infertility Specialist?

Seek proper evaluation when:

- morphology is repeatedly below reference level,
- morphology is extremely low or 0%,
- sperm count is also low,
- motility is significantly impaired,
- pregnancy has not occurred after appropriate attempts,
- there is a palpable varicocele,
- testicular pain or swelling is present,
- testes are unusually small,
- anabolic steroids or testosterone have been used,
- there is a history of undescended testis,
- recurrent miscarriage has occurred,
- repeated IVF/ICSI cycles have failed,
- or the laboratory describes a specific abnormality such as globozoospermia or macrozoospermia.

A specific, uniform sperm abnormality should receive much more careful investigation than an isolated morphology percentage.



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Dr. Nizamuddin Qasmi and Saira Health Care

I am **Dr. Nizamuddin Qasmi**, Founder and Chief Physician of **Saira Health Care**, with focused clinical practice in **sexual disorders and infertility**.

My professional education and training listed for this clinical work include:

- **BUMS – Hamdard University, Delhi**
- **MD**
- **CGO**
- **Certificate in Infertility – MGBIMS, Delhi**
- **Certificate in Urology – London, UK**
- **Masters in Male Infertility – MasterHealthPro (HealthPro)**
- **Integrated Sexual and Reproductive Health – ISRH, UNFPA**

Saira Health Care's official physician profile identifies my focused clinical work in sexual disorders and infertility and specifically includes **teratospermia/abnormal sperm morphology**, oligospermia, azoospermia, asthenospermia, varicocele and other reproductive conditions among the areas addressed in the clinic.

Saira Health Care's current professional material also lists the **Masters in Male Infertility – MasterHealthPro (HealthPro)** and **Integrated Sexual and Reproductive Health – ISRH, UNFPA** within the professional profile used for its sexual- and reproductive-health educational content.

This combination of training is particularly relevant to abnormal sperm morphology because the condition sits at the intersection of:

- semen analysis,
- male reproductive physiology,
- infertility,
- genetics,
- varicocele,
- hormones,
- lifestyle,
- sexual health,
- and assisted reproduction.



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Saira Health Care's Contribution to Sexual Disorders and Infertility

At **Saira Health Care**, we have tried to build an approach in which male infertility is not reduced to:

“Take a sperm booster.”

Patients deserve to understand their reports.

Many men have previously been unnecessarily frightened by statements such as:

“Morphology is 2%, therefore you can never become a father.”

Others are given the opposite type of false reassurance:

“Take this medicine and every abnormal sperm will become normal.”

Neither statement reflects contemporary reproductive medicine.

Saira Health Care publicly describes its model as patient-centered and focused on sexual disorders and infertility, combining traditional Unani knowledge, individualized treatment, lifestyle guidance and contemporary diagnostic understanding.

Our contribution should therefore include:

- accurate semen-analysis interpretation,
- diagnosis of male sexual and fertility disorders,
- education,
- individualized Unani management,
- lifestyle correction,
- appropriate investigation,
- assessment of varicocele and hormones,
- recognition of genetic conditions,
- evaluation of the couple,
- and timely referral for ART or specialist reproductive care.

My Integrative Treatment Philosophy

I do not believe a patient benefits when traditional medicine and modern reproductive medicine are presented as enemies.



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Consider these examples.

Patient 1

Morphology is 3%, but count and motility are excellent.

He may require reassurance, lifestyle optimization and couple-level fertility assessment rather than aggressive treatment.

Patient 2

Morphology is 2%, he smokes heavily, has obesity and poorly controlled diabetes.

Lifestyle and metabolic correction become major parts of his treatment, with individualized supportive Unani care where appropriate.

Patient 3

Morphology is 1% and he has a clinically significant varicocele.

Reproductive-urology assessment may be appropriate.

Patient 4

Almost 100% of sperm have round heads.

This may represent globozoospermia.

Genetic and assisted-reproduction assessment becomes more important than routine antioxidant treatment.

Patient 5

Morphology is 2%, sperm concentration is very low and motility is severely reduced.

This is not isolated teratozoospermia.

It is a broader severe male-factor infertility problem requiring more extensive evaluation.

Patient 6

Morphology is 2%, but the female partner has rapidly declining ovarian reserve.

Waiting years simply to improve morphology may not be the best fertility strategy.

This is how individualized medicine should work.

Latest Scientific Perspective in 2026

The current evidence has become increasingly cautious about overinterpreting sperm morphology.

The WHO Sixth Edition continues to standardize morphology assessment and contemporary European guidance uses approximately **4% normal forms** as the lower reference value while emphasizing that no individual semen parameter establishes fertility or infertility.

The amended **AUA/ASRM Male Infertility Guideline** similarly states that, apart from certain extreme abnormalities such as complete globozoospermia, no single concentration, motility or morphology value is by itself diagnostic of infertility; the likelihood of infertility increases as multiple significant abnormalities occur together.

A major contemporary review found conflicting evidence regarding isolated teratozoospermia and ART outcomes.

Another review concluded that morphology has limited diagnostic and prognostic usefulness when interpreted independently.

A 2025 expert group specifically advised against using the percentage of normal forms alone to determine whether a couple should receive IUI, IVF or ICSI.

At the same time, advances in genetics have shown that **specific monomorphic sperm defects are very different from ordinary isolated teratozoospermia**, with genes such as DPY19L2 and AURKC playing clinically important roles.

These developments have changed the way I believe morphology should be discussed with patients:

Do not ignore morphology—but do not exaggerate it either.

My Final Message to Patients

If your semen report says:

“Normal morphology – 2%”

please do not immediately believe:

“98% of my sperm are useless.”

Instead, ask:

Is this result confirmed?

Which laboratory performed the test?

What is my sperm concentration?

What is my total sperm number?

How is my progressive motility?



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Is this isolated teratozoospermia or OAT?

Do I have a clinical varicocele?

Do I smoke?

Do I have obesity or diabetes?

Did I recently have fever?

Have I used testosterone or steroids?

Is the defect polymorphic or monomorphic?

Does my morphology pattern suggest a genetic condition?

Have there been recurrent miscarriages or repeated ART failures?

How is my wife's reproductive health?

These questions provide much more useful information than simply asking:

“Which medicine makes sperm shape normal?”

At Saira Health Care, my aim is to provide:

hope without exaggeration and treatment without guesswork.

Conclusion

Abnormal sperm morphology, or **teratozoospermia**, refers to a low proportion of sperm meeting strict microscopic criteria for normal shape and structure.

Current WHO-based laboratory assessment uses approximately:

4% normal forms

as the lower fifth-percentile reference value.

However, this number should **not be interpreted as an absolute fertile-versus-infertile boundary.**

Sperm morphology must be interpreted together with:

- sperm concentration,
- total sperm number,
- motility,
- semen volume,
- reproductive history,



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- male health,
- and female-partner fertility.

Many men with isolated teratozoospermia can still achieve pregnancy.

Contemporary research increasingly questions the ability of isolated morphology to independently predict natural conception or ART success.

At the same time, certain distinctive monomorphic abnormalities—such as:

- globozoospermia,
- macrozoospermia,
- acephalic sperm syndrome,
- and multiple morphological abnormalities of sperm flagella

can have important genetic causes and require specialized evaluation.

Potential contributing factors to ordinary abnormal morphology include:

- varicocele,
- smoking,
- obesity,
- oxidative stress,
- infection and inflammation,
- diabetes,
- heavy alcohol use,
- environmental exposure,
- fever,
- hormonal and testicular problems,
- and genetic factors.

Treatment depends on the cause.

It may involve:

- smoking cessation,
- weight and metabolic management,
- physical activity,



- treatment of clinically significant varicocele,
- treatment of genuine infection,
- hormonal management where indicated,
- individualized nutritional and Unani support,
- genetic counselling,
- IUI,
- IVF,
- or ICSI.

The **Unani system of medicine** can provide an important individualized framework through:

- **Mizaj**
- **Asbab-e-Sitta Zarooriya**
- **Ilaj-bil-Ghiza**
- **Ilaj-bit-Tadbir**
- **Ilaj-bid-Dawa**
- and whole-person reproductive-health management.

Its role is particularly valuable in supporting:

- nutrition,
- general reproductive health,
- metabolic health,
- lifestyle,
- sleep,
- psychological well-being,
- and appropriately selected traditional pharmacotherapy.

However, responsible Unani treatment should not promise that one herb or formulation can correct every type of abnormal sperm morphology.

Modern evidence on antioxidant and supplement therapies remains inconsistent, and even a large 2026 meta-analysis concluded that definitive recommendations regarding antioxidant treatment still cannot be made.

My clinical philosophy at **Saira Health Care** is therefore:



+91-9452580944



+91-5248-359480



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Confirm the semen abnormality.

Interpret morphology with count and motility.

Look for the underlying cause.

Differentiate ordinary polymorphic abnormalities from important monomorphic genetic defects.

Correct reversible lifestyle and medical factors.

Use Unani medicine rationally and individually.

Investigate recurrent miscarriage or ART failure appropriately.

Use reproductive surgery or ART when indicated.

Evaluate both partners.

And never allow one morphology percentage to define a man's entire fertility future.

A morphology report is one piece of the fertility puzzle.

It is not a final verdict on fatherhood.

About the Author

Dr. Nizamuddin Qasmi

Founder & Chief Physician, Saira Health Care
Focused Practice in Sexual Disorders & Infertility

Professional Education & Training

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

Dr. Nizamuddin Qasmi's public professional profile at Saira Health Care describes his clinical focus in male and female sexual disorders and infertility, including abnormal sperm



+91-9452580944



+91-5248-359480



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morphology, oligospermia, azospermia, asthenospermia, varicocele and other reproductive-health concerns.

His clinical approach combines traditional Unani assessment with individualized fertility evaluation, patient education, lifestyle guidance, contemporary diagnostic information and appropriate referral when advanced reproductive treatment is required.

Medical Disclaimer

This article is intended for patient education and general reproductive-health awareness.

It is **not** a substitute for an individual consultation, physical examination, laboratory interpretation, diagnosis or personalized fertility-treatment plan.

A morphology result below 4% does not by itself establish infertility and should be interpreted alongside sperm count, motility, total sperm number, reproductive history and female-partner factors.

Do not start or stop:

- testosterone,
- anabolic steroids,
- hormonal medicines,
- antibiotics,
- fertility medicines,
- antioxidant supplements,
- or herbal/Unani medicines

without appropriate professional guidance.

Traditional or herbal origin does not automatically guarantee effectiveness or safety.

Men with severe or unusual monomorphic sperm abnormalities may require genetic evaluation and specialized reproductive counselling.

Couples experiencing recurrent pregnancy loss, prolonged infertility or repeated assisted-reproductive failure may require broader investigation of both partners.

Where reproductive urology, genetics, endocrinology, varicocele surgery, IUI, IVF or ICSI is required, timely referral should form part of responsible fertility care.



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