

Understanding a Semen Analysis

A Complete Guide to Sperm Count, Concentration, Motility, Morphology, Semen Volume, Vitality, pH, White Blood Cells, Azoospermia, Oligospermia and Male Fertility

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A Message From Dr. Nizamuddin Qasmi

One of the most common reports men bring to me during an infertility consultation is a: **semen analysis.**

The patient often sits in front of me and asks:

“Doctor, is my sperm report normal?”

Sometimes he points to one number and says:

“My morphology is only 4%. Does that mean 96% of my sperm are useless?”

Another patient says:

“My sperm count is 20 million, so I should definitely be fertile.”

Another becomes extremely frightened because his report contains words such as:

oligozoospermia,

asthenozoospermia,

teratozoospermia.

And when a report says:

azoospermia,

many men immediately conclude:



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“I can never become a father.”

These conclusions are often too simplistic.

The first thing I explain is:

A semen analysis is one of the most important tests in male fertility, but it is not a pass-or-fail examination of manhood.

It does not measure:

masculinity,

sexual power,

libido,

ability to obtain an erection.

And one isolated number does not automatically tell us whether a couple will or will not conceive.

The **World Health Organization's Sixth Edition Laboratory Manual for the Examination and Processing of Human Semen**, published in 2021, remains the current international laboratory reference for standardized semen examination. WHO then published its first global infertility guideline in November 2025, further clarifying how semen analysis should be used clinically.

Modern guidance emphasizes an extremely important principle:

semen-analysis reference values are not absolute dividing lines between fertile and infertile men.

The European Association of Urology explains that the WHO lower reference values represent approximately the **fifth percentile** among men whose partners achieved natural conception within 12 months. They do not represent a biological border below which pregnancy is impossible or above which pregnancy is guaranteed.

So whenever I interpret a semen analysis, I ask:

What is the complete pattern?

Was the sample collected correctly?

Is this the first or a repeat test?

What is the man's reproductive history?

Is there varicocele, hormonal disease, infection, obstruction or testicular disease?

What is the female partner's reproductive situation?

That is how a semen report becomes clinically meaningful.

What Is Semen?

Many patients use:

semen

and:

sperm

as though they are the same thing.

They are not.

Semen is the fluid ejaculated from the penis during orgasm.

It contains:

spermatozoa,

seminal-vesicle secretions,

prostate secretions,

small contributions from other reproductive glands.

Sperm are the male reproductive cells contained within semen.

A sperm cell has:

a head containing genetic material,

a midpiece involved in energy production,

a tail used for movement.

Therefore, a semen analysis examines both:

the fluid carrying the sperm

and:

the sperm themselves.

Why Is Semen Analysis Important?

WHO's latest infertility guideline recognizes semen analysis as a fundamental investigation for assessing the male contribution to infertility.



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It provides information about:

sperm production,
sperm transport,
semen volume,
motility,
morphology,
vitality,
possible inflammation,
possible obstruction.

It can identify men who require:

hormonal evaluation,
physical examination,
genetic testing,
reproductive-urological assessment,
assisted reproduction.

But it cannot, by itself, answer every fertility question.

Male Fertility Should Be Evaluated at the Same Time as Female Fertility

One of the most important recommendations in modern fertility medicine is:

evaluate both partners in parallel.

AUA/ASRM guidance recommends that the initial male infertility assessment include:

reproductive history,
one or more semen analyses.

Men with abnormal results should then receive appropriate male-reproductive evaluation.

It is therefore inappropriate for a woman to undergo:

repeated ultrasound,
hormones,



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HSG,

medications

for months or years while the male partner has never had even one semen test.

At Saira Health Care, I consider:

semen analysis an early, basic and highly valuable fertility investigation.

How Is a Semen Sample Collected?

The reliability of the result begins:

before the microscope.

A poorly collected sample can create an apparently abnormal report even when sperm production is reasonably normal.

WHO-based laboratory practice recommends semen collection after approximately:

2–7 days of ejaculatory abstinence.

The entire ejaculate should ideally be collected, and the laboratory should process the sample promptly. Reviews of the WHO Sixth Edition describe laboratory assessment generally beginning within about 30–60 minutes after collection.

What Does Ejaculatory Abstinence Mean?

It means avoiding ejaculation from:

sexual intercourse,

masturbation

during the specified period before the diagnostic sample.

This is done mainly to standardize the test.

It does not mean:

“the longer you save sperm, the better your fertility.”

Longer abstinence can increase:

semen volume,

sperm numbers

while potentially reducing some aspects of:



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motility,

sperm quality.

Therefore:

follow the laboratory's collection instructions rather than deliberately abstaining for ten or fifteen days.

Why Should Repeat Samples Use Similar Abstinence?

Suppose the first semen sample was collected after:

2 days of abstinence

and the second after:

10 days.

The reports may differ partly because the collection conditions differed.

For meaningful comparison, I prefer the repeat sample to use approximately:

similar preparation conditions.

Collect the Entire Ejaculate

This is particularly important.

The first portion of ejaculation can contain a high concentration of:

sperm.

If some of the sample is lost during collection, especially the first fraction, the laboratory may report:

low volume,

lower sperm concentration,

lower total sperm number.

Therefore, if part of the sample was spilled:

tell the laboratory and doctor.

Do not hide it because of embarrassment.

It can completely change interpretation.



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Can Semen Be Collected at Home?

Sometimes yes, if the laboratory allows it.

The sample must be:

collected in the approved container,

protected from extreme temperature,

transported promptly,

accompanied by the exact collection time.

MedlinePlus advises rapid transport, generally within about one hour when samples are collected away from the laboratory.

Follow the specific laboratory's instructions.

Can an Ordinary Condom Be Used?

Ordinary condoms may contain:

lubricants,

spermicidal or other chemicals

that can affect sperm.

If intercourse collection is necessary, use only a:

laboratory-approved semen-collection condom.

Do not improvise.

What Does a Standard Semen Analysis Measure?

A modern semen report may include:

semen volume,

sperm concentration,

total sperm number,

total motility,

progressive motility,

morphology,



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vitality,

pH,

liquefaction,

viscosity,

round cells,

leukocytes,

agglutination.

Understanding each item separately is useful.

Understanding them:

together

is even more important.

WHO Sixth Edition Lower Reference Values

The currently used WHO Sixth Edition reference distribution gives approximately the following lower fifth-percentile values:

Semen parameter	WHO 2021 lower reference value
Semen volume	1.4 mL
Total sperm number	39 million per ejaculate
Sperm concentration	16 million/mL
Total motility	42%
Progressive motility	30%
Vitality	54% live sperm
Normal morphology	4% normal forms
Semen pH	>7.2 consensus threshold
Peroxidase-positive leukocytes	<1 million/mL

These values are summarized in current EAU guidance derived from the WHO Sixth Edition.



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But please understand:

these are reference limits, not fertility guarantees.

What Does “Lower Reference Limit” Actually Mean?

This is perhaps the most important concept in the whole article.

The WHO values are derived from men in couples who achieved natural conception within approximately:

12 months.

The lower reference limit represents roughly the:

lowest 5% of that reference population.

Therefore, if your sperm concentration is:

15 million/mL

instead of 16 million/mL,

it does **not** mean:

“I crossed a line and became infertile.”

Likewise, a concentration of:

30 million/mL

does not mean:

“Pregnancy is guaranteed.”

EAU guidance specifically states that the lower fifth percentile:

does not distinguish fertile from infertile men.

Fertility Is a Probability, Not a Laboratory Pass Mark

Natural conception depends on several biological processes occurring together:

Male factors

sperm number,

movement,

sperm function,



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ejaculation.

Female factors

ovulation,

age,

fallopian tubes,

uterus.

Couple factors

intercourse frequency,

fertile-window timing,

duration of trying.

Therefore:

a semen report must be interpreted as part of the couple's reproductive picture.

Semen Volume

Semen volume means:

the amount of fluid ejaculated.

The WHO Sixth Edition lower reference value is approximately:

1.4 mL.

Low semen volume is sometimes called:

hypospermia.

But low volume does not automatically mean the testicles are not producing sperm.

Where Does Semen Volume Come From?

Most semen fluid comes from reproductive glands such as:

seminal vesicles,

prostate.

The testes produce sperm, but they do not produce most of the ejaculate volume.

Therefore:



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semen volume and sperm production are different biological measurements.

Causes of Low Semen Volume

Possible explanations include:

incomplete sample collection,

short abstinence,

retrograde ejaculation,

ejaculatory duct obstruction,

congenital absence or abnormal development of seminal-vesicle/vas structures,

androgen deficiency in selected patients,

ejaculation problems.

The pattern becomes particularly important when low volume occurs together with:

azoospermia,

acidic semen.

That combination can raise concern for:

distal reproductive-tract obstruction.

AUA/ASRM guidance recommends considering targeted transrectal imaging when semen findings suggest ejaculatory-duct obstruction rather than ordering this imaging routinely for every infertile man.

Is High Semen Volume Better?

Not necessarily.

A larger volume does not automatically mean:

more sperm,

better sperm,

higher fertility.

For example:

A man could have:

5 mL of semen



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but very low sperm concentration.

Another could have:

2 mL

with excellent sperm numbers.

Therefore:

volume must be interpreted with sperm concentration and total sperm number.

Sperm Concentration

Sperm concentration means:

the number of sperm in each millilitre of semen.

The WHO Sixth Edition lower reference value is approximately:

16 million sperm/mL.

Example:

If semen volume is:

3 mL

and concentration is:

20 million/mL,

the approximate total sperm number is:

60 million.

What Is Oligozoospermia?

Oligozoospermia refers to:

reduced sperm concentration.

In everyday clinical usage, a concentration below the WHO lower reference range is often described as:

low sperm concentration,

oligozoospermia.

But severity matters enormously.



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A concentration slightly below the reference value is very different from:

1 million/mL.

Severe Oligozoospermia Deserves More Investigation

Very low sperm concentration raises concern for causes such as:

severe testicular dysfunction,

genetic abnormality,

obstruction,

hormonal disease.

Current AUA/ASRM guidance amended in 2024 recommends **Y-chromosome microdeletion testing** particularly for men with primary infertility and:

azoospermia, or

sperm concentration ≤ 1 million/mL

when accompanied by evidence such as elevated FSH, testicular atrophy or impaired sperm production.

This is an important example of:

using the severity of the semen abnormality to decide the next test.

Total Sperm Number

This is often more informative than patients realize.

Total sperm number means:

the approximate number of sperm in the entire ejaculate.

The WHO Sixth Edition lower reference value is:

39 million sperm per ejaculate.

It is calculated from:

semen volume $\times$ sperm concentration.

Why Total Sperm Number Matters

Suppose two men both have sperm concentration:



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20 million/mL.

Man A

Volume = 1 mL

Total sperm ≈:

20 million.

Man B

Volume = 4 mL

Total sperm ≈:

80 million.

Their concentration is identical.

But sperm output per ejaculation is very different.

EAU guidance notes that total sperm number can have greater diagnostic value than concentration alone because concentration is influenced by the amount of fluid contributed by:

prostate,

seminal vesicles.

Sperm Motility

Motility means:

sperm movement.

But not all movement is equally useful.

A sperm that only moves in small circles without forward progression is biologically different from one travelling effectively forward.

Modern WHO analysis distinguishes movement categories including:

rapid progressive,

slow progressive,

non-progressive,

immotile.

EAU describes this WHO Sixth Edition classification.



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Total Motility

Total motility includes:

progressive + non-progressive moving sperm.

The current lower reference value is approximately:

42%.

Progressive Motility

Progressive motility means sperm that move:

forward.

This is particularly important for natural conception because sperm need to travel through:

cervix,

uterus,

fallopian tube.

The WHO Sixth Edition lower reference value is approximately:

30% progressive motility.

What Is Asthenozoospermia?

Asthenozoospermia means:

reduced sperm motility.

The clinical significance depends on:

how low motility is,

sperm concentration,

total sperm count,

vitality,

morphology.

A man with slightly reduced progressive motility but excellent sperm count may have a very different reproductive outlook from a man with:



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low count,
very poor movement,
abnormal morphology.

Total Motile Sperm Count

Clinicians sometimes calculate:

total motile sperm count — TMSC.

This estimates how many moving sperm are present across the whole ejaculate.

It can be useful when considering:

natural conception,

IUI feasibility.

A simplified calculation is:

volume × concentration × motility proportion.

For example:

Volume:

3 mL

Concentration:

20 million/mL

Total motility:

50%

TMSC ≈:

30 million motile sperm.

But TMSC should still not be interpreted in isolation.

Sperm Morphology

Morphology means:

sperm shape.

This is perhaps the most misunderstood parameter in semen analysis.



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The WHO Sixth Edition uses very strict morphological criteria.

The lower reference value is approximately:

4% normal forms.

Patients frequently become alarmed by this.

Does 4% Normal Morphology Mean 96% of Sperm Are “Bad”?

No.

This is a very important misconception.

Under strict morphology assessment, a sperm must meet detailed structural criteria involving its:

head,

midpiece,

tail

to be labelled:

normal.

A relatively small difference can place a sperm into an “abnormal morphology” category.

Therefore:

4% normal morphology does not mean the other 96% are genetically defective or completely incapable of fertilization.

The 4% number is a:

strict reference threshold.

It should never be translated into:

“96% damaged babies”

or:

“96% useless sperm.”

That is scientifically incorrect.

Can Men With Low Morphology Conceive Naturally?



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Yes.

Natural pregnancy can occur even when morphology is below the reference value, depending on:

count,

motility,

female fertility,

severity and type of morphology abnormality.

Morphology becomes more meaningful when it appears with other abnormalities.

AUA/ASRM emphasizes that isolated concentration, morphology or motility values are generally not diagnostic of infertility by themselves.

When Morphology Can Be Especially Important

There are rare severe morphological disorders in which nearly all sperm share a specific structural abnormality.

Examples include selected conditions such as:

complete globozoospermia.

These are different from an ordinary report showing:

2–3% normal forms.

They may require specialized male-fertility assessment and assisted reproduction.

Sperm Vitality

Vitality asks:

How many sperm are alive?

This becomes particularly useful when motility is poor.

A sperm may be:

alive but immotile,

or:

dead and immotile.

These are not the same situation.



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The WHO Sixth Edition lower reference value is approximately:

54% live sperm.

When Is Vitality Testing Especially Useful?

WHO-based EAU guidance states that vitality assessment is particularly useful when a high proportion of sperm are immotile; it does not need to be performed routinely in every sample.

This helps distinguish:

severe motility impairment

from:

sperm death.

What Is Necrozoospermia?

Necrozoospermia refers to:

an abnormally high proportion of dead sperm.

This requires careful confirmation.

It is different from:

asthenozoospermia,

where sperm are alive but movement is reduced.

This distinction can influence treatment and ART planning.

Semen pH

Semen pH reflects the balance of secretions from different reproductive glands.

The WHO Sixth Edition uses a lower consensus threshold around:

pH 7.2.

The most clinically informative concern is generally:

unusually acidic semen,

particularly in combination with:

very low volume,



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azoospermia.

That pattern may suggest reduced seminal-vesicle contribution or distal obstruction.

Does High pH Automatically Mean Infection?

No.

Do not diagnose:

prostatitis

or bacterial infection from semen pH alone.

pH can be influenced by:

processing time,

glandular secretions,

laboratory factors.

It must be interpreted together with:

symptoms,

leukocytes,

microbiology when indicated.

Liquefaction

Fresh semen normally coagulates and then changes into a more fluid state.

This is called:

liquefaction.

Laboratories record the time it takes for this process.

Abnormal or delayed liquefaction may interfere with:

accurate laboratory measurement,

sperm movement

in some samples.

But prolonged liquefaction alone does not identify one specific disease.



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Viscosity

Viscosity means:

how thick or resistant to flow the semen remains after liquefaction.

Very high viscosity can make:

sperm movement,

laboratory assessment

more difficult.

But an isolated “increased viscosity” entry on a report should not automatically lead to:

antibiotics,

prostate medication.

It needs clinical interpretation.

Agglutination

Sperm agglutination means sperm sticking to:

one another.

This is different from nonspecific sperm becoming trapped in:

mucus,

debris.

Marked true agglutination can occasionally raise the question of:

antisperm antibodies,

inflammatory factors.

But antisperm-antibody tests should not routinely be ordered during the initial male infertility evaluation. AUA/ASRM specifically recommends against routine initial ASA testing.

Round Cells

This is another commonly misunderstood line on semen reports.

“Round cells” may include:

white blood cells,



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immature germ cells.

These are biologically different.

Therefore:

round cells do not automatically mean infection.

AUA/ASRM recommends that men with more than approximately:

1 million round cells/mL

receive further assessment to determine whether the cells are:

leukocytes,

immature germ cells.

White Blood Cells — Leukocytes

WHO-derived guidance uses approximately:

1 million peroxidase-positive leukocytes/mL

as a threshold for leukocytospermia.

However:

leukocytospermia does not automatically mean bacterial infection.

EAU notes that it represents inflammation but is not a reliable marker of bacterial or viral infection by itself.

Therefore:

do not automatically start antibiotics simply because WBCs are reported.

If pyospermia is confirmed, AUA/ASRM recommends evaluation for:

infection.

Why Unnecessary Antibiotics Are a Problem

Some men receive repeated:

doxycycline,

azithromycin,

quinolones



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simply because:

“Pus cells were present.”

This approach is not always justified.

EAU states that evidence is insufficient to show that treating leukocytospermia alone, without a demonstrated infective organism, improves conception rates.

Therefore:

identify genuine infection rather than treating every inflammatory laboratory finding blindly.

Azoospermia

Azoospermia means:

no sperm are detected in the ejaculate.

This is a serious finding.

But:

azoospermia does not automatically mean permanent sterility.

The next question is:

Why are sperm absent?

Two Major Categories of Azoospermia

Obstructive Azoospermia

Sperm production may be relatively preserved, but sperm cannot reach the ejaculate because of:

reproductive-tract obstruction,

congenital absence of ducts,

previous infection,

previous surgery.

Non-Obstructive Azoospermia

The primary problem is:

impaired sperm production within the testes.



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Possible causes include:

genetic abnormalities,
severe testicular injury,
testicular failure,
selected hormonal or developmental disorders.

These two groups require very different treatment.

Azoospermia Should Be Properly Confirmed

EAU guidance recommends careful examination of the centrifuged semen pellet when azoospermia is suspected so that extremely rare sperm are not missed.

If a small number of sperm are discovered only after extended pellet examination, the condition may be:

cryptozoospermia

rather than absolute azoospermia.

This can have major implications for:

ICSI,

whether surgical sperm retrieval is required.

What Is Cryptozoospermia?

Cryptozoospermia means sperm are so scarce that they may not be seen during routine examination but are found after:

concentration,

centrifugation,

careful pellet search.

This is very different from a normal sperm count, but also different from:

confirmed complete azoospermia.

What Is Oligo-Asthen-Teratozoospermia — OAT?

This describes a combination of:

low sperm concentration,
poor motility,
abnormal morphology.

This pattern is often called:

OAT.

It does not represent one single disease.

Possible causes include:

varicocele,
testicular dysfunction,
genetic factors,
toxins,
endocrine problems,
idiopathic male infertility.

Therefore:

OAT is a semen pattern—not the final diagnosis.

One Abnormal Parameter Versus Several

AUA/ASRM makes an important clinical observation:

multiple simultaneous abnormalities usually carry more significance than one mildly abnormal value.

For example:

Report A

Concentration slightly low but:

motility good,
morphology good,
total sperm output reasonable.

Report B

Very low concentration plus:



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poor progressive motility,

1% morphology.

These should not receive the same interpretation.

Does a Normal Semen Analysis Guarantee Fertility?

No.

This must be stated very clearly.

Some men with semen values above all WHO reference limits still belong to couples experiencing infertility.

Why?

Because conventional semen analysis cannot fully measure every sperm function involved in:

capacitation,

acrosome reaction,

sperm-oocyte interaction,

DNA integrity.

And pregnancy also depends upon:

the female partner.

WHO explicitly emphasizes that semen parameters are valuable but do not by themselves reliably determine fertility status.

Does an Abnormal Semen Analysis Prove Infertility?

No.

A man can have one or more results below the reference limits and still achieve:

natural conception.

The probability may be reduced depending on:

severity,

combination of abnormalities,

partner factors.



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Therefore I prefer to say:

“This result may reduce fertility potential”

rather than:

“You are infertile because one number is below normal.”

When Should a Semen Analysis Be Repeated?

This is an area where guidance has evolved.

The **WHO 2025 infertility guideline** specifically recommends:

if all semen parameters are within WHO reference ranges, routine repeat semen analysis is generally not necessary;

if one or more parameters are outside the reference range, WHO suggests repeating the analysis after a minimum of approximately **11 weeks**.

Why 11 weeks?

Because sperm production takes time.

A repeat separated by roughly a spermatogenic cycle can show whether the abnormality:

persists,

improves,

was temporary.

Why Older Advice Sometimes Says “Repeat in a Few Weeks”

AUA/ASRM guidance has historically emphasized that semen parameters vary substantially between ejaculates and that more than one sample can be valuable when the first result is abnormal.

In practice, an earlier repeat may still be used in selected situations—for example:

suspected collection error,

incomplete sample,

unexpected azoospermia,

laboratory concern.



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But for assessing a stable abnormal parameter over a full sperm-production cycle, the newer WHO 2025 recommendation of:

at least 11 weeks

is particularly useful.

Why Can Semen Results Change?

Semen parameters can vary because of:

recent fever,

significant systemic illness,

sample loss,

abstinence duration,

medications,

environmental exposure,

lifestyle changes,

normal biological variability.

That is why one report should not always be treated as a permanent diagnosis.

Fever Can Affect Sperm for Weeks or Months

Sperm production is a long biological process.

A significant febrile illness can temporarily reduce:

sperm count,

motility,

quality.

Therefore, if a semen analysis becomes abnormal soon after:

high fever,

severe infection,

I consider this history when deciding:

when to repeat it.



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What Happens After an Abnormal Semen Analysis?

The correct response is not:

“Take a sperm booster.”

The correct response is:

determine the cause.

AUA/ASRM recommends that men with abnormal semen parameters or presumed male infertility receive a full:

reproductive history,

appropriate physical examination,

directed tests when indicated.

Male Fertility History

I ask about:

duration of infertility,

previous pregnancies,

childhood testicular problems,

puberty,

genital surgery,

infection,

medication,

steroid use,

sexual function.

Testicular Examination

The examination may assess:

testicular size,

consistency,



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epididymis,

vas deferens,

varicocele,

genital abnormalities.

This can provide clues that no blood test can replace.

Hormonal Evaluation

Not every infertile man needs an enormous hormone panel.

AUA/ASRM recommends assessing:

FSH,

testosterone

particularly in infertile men with:

impaired libido,

erectile dysfunction,

oligozoospermia,

azoospermia,

atrophic testes,

evidence of endocrine abnormality.

Additional hormones may be added according to findings.

What Does FSH Tell Us?

FSH stimulates:

sperm-producing tissue.

When testicular sperm production is severely impaired:

FSH may rise.

However:

normal FSH does not guarantee normal spermatogenesis.

EAU notes that men with certain maturation-arrest patterns can have:



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normal FSH,

abnormal sperm production.

So again:

one hormone is not the entire diagnosis.

Testosterone and Male Fertility

A man with infertility may believe:

“My sperm are low, so I need testosterone injections.”

This can be a serious mistake.

External testosterone can suppress:

LH,

FSH,

intratesticular testosterone,

sperm production.

Therefore testosterone replacement must be approached very carefully in men desiring:

current or future fertility.

Male infertility treatment is not the same as simply increasing a serum testosterone number.

Genetic Testing

Genetic testing becomes especially important in:

azoospermia,

severe oligozoospermia,

selected obstructive conditions.

Tests may include:

karyotype,

Y-chromosome microdeletion testing,

CFTR analysis.



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AUA/ASRM's 2024 amendment recommends Y-chromosome microdeletion analysis particularly in men with azoospermia or sperm concentration ≤ 1 million/mL when findings suggest impaired sperm production.

CFTR testing is recommended in men with:

congenital absence of the vas deferens,

selected idiopathic obstructive azoospermia.

Why Genetic Diagnosis Matters

A genetic diagnosis may influence:

likelihood of sperm retrieval,

whether surgery is useful,

reproductive counselling,

inheritance risk to children,

ART decisions.

For example, complete deletions involving certain Y-chromosome AZF regions have very different sperm-retrieval implications from:

isolated AZFc deletion.

This is why severe male infertility should not be treated only with:

supplements.

Varicocele

Varicocele is enlargement of veins around the testicle.

It can be associated with impaired:

sperm concentration,

motility,

testicular function.

But not every ultrasound-detected varicocele requires treatment.

Current AUA/ASRM guidance recommends considering surgical varicocele repair in infertile men who:



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are trying to conceive,

have a **palpable clinical varicocele**,

have abnormal semen parameters.

Treatment is not recommended merely for a nonpalpable varicocele discovered incidentally on imaging.

Infection and Semen Analysis

Infection can sometimes affect semen.

But:

a semen analysis is not an STI panel.

If infection is suspected, appropriate testing may include:

urine testing,

STI NAAT,

semen culture in selected cases.

Do not infer:

chlamydia,

gonorrhoea,

prostatitis

simply from poor motility.

Lifestyle Factors

Male fertility can be influenced by:

smoking,

excessive alcohol,

obesity,

metabolic disease,

heat exposure,

toxic occupational exposure,



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anabolic steroids.

WHO's 2025 fertility guideline recommends attention to modifiable health factors such as:

healthy diet,

physical activity,

tobacco cessation.

Lifestyle modification may improve general reproductive health.

But it should not be used to delay diagnosis of:

severe oligospermia,

azoospermia,

obstruction,

genetic disease.

What About Antioxidant Supplements?

Men frequently ask me:

“Which antioxidant is best for sperm?”

The market contains:

CoQ10,

zinc,

selenium,

vitamins C and E,

carnitine,

many combinations.

Research has reported improvements in selected semen parameters with some supplements.

But WHO's 2025 infertility guideline concluded that available evidence was insufficient to make a recommendation either:

for or against routine antioxidant supplementation

for men with infertility and abnormal semen parameters.



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This is very important.

An antioxidant supplement should not replace:

diagnosis.

Can Semen Analysis Tell Us Whether IVF or ICSI Is Needed?

It contributes to the decision.

But treatment also depends on:

female age,

ovarian reserve,

tubal status,

duration of infertility,

previous treatment.

For selected mild male-factor cases:

natural conception,

IUI

may remain reasonable.

More severe male-factor infertility may require:

IVF,

ICSI.

A semen report should never be interpreted in isolation from the:

couple.

Sperm DNA Fragmentation

Sperm DNA fragmentation—SDF—is an advanced test assessing damage to sperm DNA.

It has attracted substantial attention.

However:

it is not a routine first semen test.



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AUA/ASRM specifically advises against routine sperm-DNA-fragmentation testing during the initial infertility evaluation.

Selected uses may arise later—for example in some cases involving:

recurrent pregnancy loss,

unexplained infertility,

repeated ART failure.

EAU acknowledges associations between increased SDF and poorer reproductive outcomes but also notes important evidence limitations.

Reactive Oxygen Species Testing

Oxidative stress is biologically important in sperm dysfunction.

But sophisticated tests for:

reactive oxygen species

are not required in every patient.

WHO classifies many such assessments as:

advanced,

research-oriented examinations

rather than basic semen testing.

Antisperm Antibodies

These can occasionally be relevant, particularly after:

certain surgeries,

reproductive-tract injury.

But AUA/ASRM recommends that antisperm-antibody testing:

should not routinely form part of the initial male infertility evaluation.

Home Sperm Tests

Home tests can be convenient.

Some estimate:



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sperm concentration,
motile sperm.

But they generally cannot provide a complete laboratory assessment of:

morphology,

vitality,

leukocytes,

detailed motility,

semen characteristics.

MedlinePlus similarly notes that home tests provide less information than a full semen analysis.

For a couple experiencing infertility:

a proper laboratory semen analysis remains preferable.

Common Semen-Analysis Terms

Normozoospermia

Semen parameters are broadly within the laboratory's WHO-based reference ranges.

This does not guarantee pregnancy.

Oligozoospermia

Reduced sperm concentration.

Asthenozoospermia

Reduced sperm motility.

Teratozoospermia

Low percentage of morphologically normal sperm.

Oligo-Astheno-Teratozoospermia



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Combined low:

concentration,

motility,

morphology.

Azoospermia

No sperm detected in the ejaculate after appropriate laboratory assessment.

Cryptozoospermia

Rare sperm detectable only after intensive search/concentration.

Necrozoospermia

Abnormally high proportion of dead sperm.

Leukocytospermia

Elevated white blood cells in semen.

These are:

laboratory descriptions.

They are not always the final diagnosis.

How I Explain a Semen Report to Patients

I generally begin with seven questions.

1. Was the sample collected correctly?

If not, interpretation may be unreliable.

2. What is the total semen volume?

This helps assess total sperm output and glandular contribution.

3. How many sperm are present?

I look at both:

concentration,

total sperm number.

4. How well do they move?

Especially:

progressive motility.

5. What is the morphology?

But I do not interpret 4% morphology as:

“96% defective sperm.”

6. Are the sperm alive?

Vitality becomes important when motility is very poor.

7. Are several parameters abnormal together?

This often matters more than one borderline value.

Example 1 — Slightly Low Concentration

Suppose a report shows:

volume 3.0 mL,

concentration 14 million/mL,

total sperm ≈42 million,

progressive motility 45%,

morphology 5%.

The concentration is slightly below the WHO reference value of 16 million/mL.

But:

total sperm number is above the lower reference limit,

motility is favourable,

morphology is above the lower reference limit.

I would not tell this man:

“You are infertile.”



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I would interpret the entire couple's situation and repeat testing when clinically indicated.

Example 2 — Low Count + Low Motility + Low Morphology

Suppose:

concentration 5 million/mL,

progressive motility 15%,

morphology 2%.

This is much more concerning.

Now multiple semen domains are abnormal.

This pattern deserves:

formal male-infertility evaluation.

I would look for:

varicocele,

endocrine factors,

testicular disease,

genetic causes,

medication/exposure factors.

Example 3 — Normal Count but Very Poor Motility

Suppose:

concentration 60 million/mL,

progressive motility 5%.

A high sperm count does not cancel out:

severe motility impairment.

We need to determine:

vitality,

collection conditions,



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infection/inflammation if clinically suspected,
other causes.

Example 4 — Morphology 3% Alone

A man has:

normal volume,
excellent sperm count,
good progressive motility,
3% strict morphology.

I do not immediately recommend:

ICSI.

The correct interpretation depends on:

duration of infertility,
female age,
total motile sperm,
previous conception history.

An isolated morphology result often carries less meaning than patients are led to believe.

Example 5 — Low Volume + Azoospermia + Acidic Semen

This pattern is very different.

It can raise concern about:

ejaculatory-duct obstruction or congenital reproductive-tract abnormality.

Now additional evaluation may include:

physical examination,
hormones,
targeted transrectal imaging,
genetic testing where indicated.



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Example 6 — Azoospermia With Small Testes and High FSH

This pattern more strongly suggests:

impaired sperm production.

Now genetic and specialist evaluation becomes especially important.

Example 7 — Azoospermia With Normal Testicular Examination and Low Volume

The possibility of:

obstruction

must be considered.

This illustrates why two men with the same word:

“azoospermia”

may need completely different treatment.

Example 8 — High White Blood Cells

If the patient has:

high seminal leukocytes,

urinary burning,

genital pain,

urethral discharge,

then infection deserves investigation.

But if the man is:

asymptomatic

and leukocytes are the only finding:

do not automatically prescribe repeated antibiotics.

The Unani Perspective on Semen and Male Fertility



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As a physician trained in **Unani medicine**, I recognize that classical Unani physicians discussed male reproductive weakness and abnormalities of seminal production long before modern microscopy became available.

Traditional concepts include terms relating to:

Qillat-e-Mani,

Qillat-e-Haiwanat-e-Manawiya,

Zo'f-e-Bah,

reproductive weakness.

Unani scholars traditionally considered factors such as:

Mizaj,

nutritional condition,

digestive health,

sexual function,

general vitality,

reproductive-organ health.

These concepts can still be useful in:

whole-person assessment.

But today we have an enormous additional advantage:

we can actually count and examine sperm.

Modern Semen Analysis Strengthens Unani Practice

A modern semen analysis can tell me whether the patient actually has:

low concentration,

low motility,

abnormal morphology,

azoospermia.

This allows Unani treatment to become:

more specific and responsible.

Instead of telling every man:



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“Your semen is weak,”

we can say:

“Your concentration is adequate, but progressive motility is reduced.”

or:

“Your report shows severe oligozoospermia requiring further investigation.”

This is how traditional medicine can benefit from modern diagnostic precision.

Unani Medicine and Oligospermia

Unani researchers have studied traditional formulations in men with:

idiopathic oligospermia.

For example, research published in the *Hippocratic Journal of Unani Medicine* retrospectively compared several Unani formulations across 126 diagnosed patients and reported changes in parameters such as:

sperm count,

motility,

semen volume.

However, these studies were based on older semen reference criteria and had substantial methodological limitations compared with modern randomized fertility trials.

Therefore the responsible interpretation is:

Unani therapy may have supportive potential in selected men, but the evidence is not sufficient to claim universal cure of low sperm count.

Why Older Unani Studies Must Be Interpreted Carefully

Some older studies define oligospermia using:

<20 million/mL.

The current WHO Sixth Edition lower reference value is approximately:

16 million/mL.

Therefore, historical research should not be copied directly into current clinical practice without considering:



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updated definitions,
study design,
pregnancy outcomes.

Where Unani Medicine May Be Most Useful

In selected men, individualized Unani care may be used supportively for:

nutrition,
digestive health,
general metabolic wellbeing,
sexual function,
sleep,
lifestyle,
selected idiopathic semen abnormalities.

The aim should be:

to improve the patient's overall reproductive environment

while investigating and treating specific causes.

Unani Treatment Should Be Diagnosis-Led

Suppose a man has mildly reduced motility with:

no obstruction,
no genetic abnormality,
no severe hormonal disease.

Supportive integrative treatment may be reasonable.

But a patient with:

complete reproductive-tract obstruction

does not need only a sperm tonic.

A man with:

Y-chromosome deletion



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does not need a promise that herbs will repair the missing genetic segment.

A man with:

azoospermia from severe testicular failure

requires specialist evaluation.

This is why I strongly believe:

diagnosis first, individualized treatment second.

Unani Medicine Cannot Repair a Genetic Deletion

If the cause is:

Y-chromosome microdeletion,

Klinefelter syndrome,

another genetic condition,

Unani medicine cannot:

rewrite the chromosome.

It may support:

general health,

sexual wellbeing,

but genetic counselling and modern fertility planning remain essential.

Unani Medicine Cannot Mechanically Remove an Obstruction

If sperm are produced but cannot reach the ejaculate because of:

ejaculatory-duct obstruction,

vasal obstruction,

herbal therapy should not be claimed to:

physically reconstruct a blocked duct.

Selected obstructive disease may require:

microsurgery,

endoscopic treatment,



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sperm retrieval with ART.

Unani Medicine and Varicocele

Varicocele requires:

clinical examination.

A clinically significant palpable varicocele associated with infertility and abnormal semen parameters may benefit from surgical repair in selected men.

Supportive medicines should not be promoted as though they:

eliminate every anatomical varicocele.

Unani Medicine and Sexual Health

This is an area where integrated care can be especially valuable.

A man may have:

low sexual confidence,

performance anxiety,

erectile difficulty,

poor sleep,

general weakness

alongside mild semen abnormalities.

In selected patients, treatment of:

sexual wellbeing,

lifestyle,

nutrition

can improve the couple's overall reproductive experience.

This is especially relevant because my focused practice involves both:

Sexual Disorders & Infertility.

What “Special Treatment” Means by Dr. Nizamuddin Qasmi



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Special treatment does not mean:

one formula for every abnormal semen report.

At Saira Health Care, I first classify the problem.

Situation 1: Mild Isolated Abnormality

For example:

slightly low concentration,

otherwise favourable parameters.

The plan may include:

repeat semen analysis where indicated,

lifestyle review,

fertility timing,

evaluation of the female partner,

selected supportive care.

Situation 2: Oligozoospermia

I assess:

severity,

testicular examination,

varicocele,

hormones where indicated,

medications,

steroid use.

Severe cases may require:

genetic evaluation.

Situation 3: Asthenozoospermia

I consider:

vitality,
infection/inflammation when clinically indicated,
varicocele,
lifestyle factors,
collection conditions.

Situation 4: Teratozoospermia

I first determine whether this is:
isolated,
part of OAT,
a rare severe morphology syndrome.
One isolated morphology percentage should not automatically determine treatment.

Situation 5: Azoospermia

I do not immediately tell the patient:

“There is no treatment.”

I ask:

obstructive or non-obstructive?

Then assessment may involve:

hormones,
examination,
genetics,
targeted imaging,
sperm-retrieval planning.

Situation 6: Low Volume

I first rule out:
incomplete collection.



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If persistent, I consider:

retrograde ejaculation,

obstruction,

hormonal factors.

Situation 7: High Round Cells

I determine whether they represent:

immature germ cells,

white blood cells.

If genuine pyospermia is present:

investigate infection.

Situation 8: Normal Semen but No Pregnancy

Now the answer is not:

“The man is definitely perfect.”

The couple still needs assessment of:

ovulation,

fallopian tubes,

uterine factors,

age,

sexual timing.

Selected advanced male testing may also become relevant later according to history.

Special Male Infertility Assessment at Saira Health Care

When a man brings me a semen analysis, I may review:

semen volume,

concentration,

total sperm output,



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progressive motility,

total motility,

morphology,

vitality,

pH,

round cells.

Then I ask about:

infertility duration,

previous conception,

testicular history,

varicocele,

infection,

medicines,

testosterone/steroids,

smoking,

occupational exposure,

erectile/ejaculatory function.

This converts:

a laboratory sheet

into:

a clinical diagnosis.

Saira Health Care's Contribution to Sexual Disorders & Infertility

At **Saira Health Care**, semen-analysis interpretation forms part of broader male reproductive care.

Our approach may include assessment of:

oligospermia,

asthenozoospermia,



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teratozoospermia,

OAT,

azoospermia,

abnormal semen volume,

male sexual dysfunction,

erectile dysfunction,

ejaculation disorders,

varicocele-related infertility,

reproductive infection.

An abnormal semen report is not treated as:

a disease name by itself.

The objective is to determine:

why the abnormality occurred.

Dr. Nizamuddin Qasmi's Specialized Clinical Approach

As a well-qualified physician with a **specialized clinical focus in Sexual Disorders & Infertility**, my training includes:

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

My approach combines:

male reproductive assessment,

semen interpretation,

sexual-function evaluation,

couple-based infertility care,

responsible Unani supportive management.



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I do not believe the correct question is merely:

“How can we increase the count?”

The better questions are:

Why is the count low?

Is sperm production impaired?

Is there obstruction?

Is there varicocele?

Is a hormonal abnormality present?

Is a genetic cause possible?

Is the female partner's fertility also contributing?

Does the couple need natural-conception guidance, IUI, IVF or ICSI?

That produces much more rational care.

Common Myths About Semen Analysis

Myth 1: A sperm concentration above 16 million means a man is definitely fertile

Fact:

16 million/mL is a reference-limit figure, not a guarantee of fertility.

Myth 2: Below 16 million means natural pregnancy is impossible

Fact:

Natural conception can occur below the reference value depending on the full reproductive situation.

Myth 3: Morphology 4% means 96% of sperm are genetically abnormal

Fact:

No.

Morphology uses strict structural criteria.



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Myth 4: High sperm count means everything is normal

Fact:

Motility, morphology, total sperm output and other factors still matter.

Myth 5: Low volume means low sperm production

Fact:

Most semen fluid comes from accessory glands rather than the testes.

Myth 6: Pus cells automatically mean bacterial infection

Fact:

Leukocytospermia indicates inflammation but does not prove bacterial infection.

Myth 7: One abnormal semen test proves permanent infertility

Fact:

Semen varies between ejaculates, and WHO 2025 recommends repeat testing when parameters are outside the reference range.

Myth 8: Azoospermia always means biological fatherhood is impossible

Fact:

Some men with azoospermia may have:

treatable obstruction,

sperm retrievable from the testes.

The cause matters.

Myth 9: Testosterone injections improve sperm

Fact:

External testosterone can suppress sperm production.



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Myth 10: Every low sperm count needs IVF

Fact:

Treatment depends on:

severity,

female factors,

diagnosis.

Some couples may conceive naturally or with simpler treatment.

Frequently Asked Questions

What is a semen analysis?

It is a laboratory examination of:

semen,

sperm

used as a fundamental part of male fertility assessment.

What is the normal semen volume according to current WHO reference data?

The lower reference value is approximately:

1.4 mL.

What is the current WHO sperm concentration reference value?

Approximately:

16 million/mL.

What is the WHO total sperm number reference value?

Approximately:

39 million per ejaculate.

What is the total-motility reference value?



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Approximately:

42%.

What is the progressive-motility reference value?

Approximately:

30%.

What is the morphology reference value?

Approximately:

4% normal forms

using strict morphology criteria.

What is the vitality reference value?

Approximately:

54% live sperm.

What is the lower pH threshold?

Approximately:

>7.2.

How many days should I abstain before semen analysis?

Diagnostic WHO-based collection generally uses:

2–7 days of ejaculatory abstinence.

Follow your laboratory's exact instructions.

Should I collect the complete sample?

Yes.

Loss of part of the ejaculate can significantly affect interpretation.



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What if some semen spills during collection?

Tell the laboratory.

Do not hide it.

A repeat sample may be required.

Can I collect at home?

Sometimes, if your laboratory permits it and the sample reaches the laboratory promptly under the specified conditions.

Do I need to fast before semen analysis?

Usually no.

Fasting is not generally required for the semen sample itself.

Does masturbation reduce fertility?

Masturbation does not cause permanent infertility.

For diagnostic semen collection, simply follow the recommended abstinence interval.

Is longer abstinence better?

Not necessarily.

Long abstinence can raise semen volume or count while adversely affecting other sperm characteristics.

Does frequent sex reduce sperm permanently?

No.

Sperm production continues.

What does oligozoospermia mean?

Low sperm concentration.



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What does asthenozoospermia mean?

Reduced sperm motility.

What does teratozoospermia mean?

Reduced proportion of sperm meeting strict normal morphology criteria.

What is OAT?

Combined:

oligozoospermia,

asthenozoospermia,

teratozoospermia.

What is azoospermia?

No sperm detected in the ejaculate after appropriate laboratory examination.

What is cryptozoospermia?

Extremely rare sperm detectable only after careful concentrated-pellet examination.

What is necrozoospermia?

An abnormally high proportion of dead sperm.

Does morphology 3% mean I cannot have children?

No.

Morphology must be interpreted alongside:

sperm count,

motility,

female fertility,



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reproductive history.

Can 1% morphology still result in pregnancy?

Pregnancy may still occur in some couples.

The significance depends on the complete clinical situation.

Does morphology predict genetic abnormalities in the baby?

Ordinary strict semen morphology percentages do not directly measure:

embryo chromosomes,

birth-defect risk.

Is sperm concentration or total sperm count more important?

Both matter.

Total sperm number adds important information because it incorporates:

semen volume,

concentration.

What if sperm count is good but motility is poor?

This can still reduce natural conception potential.

Further interpretation should include:

progressive motility,

vitality,

possible contributing causes.

What if motility is 0%?

Vitality testing becomes particularly important.

Sperm may be:

alive but immotile,



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dead.

Specialist evaluation is required.

What are round cells?

They can include:

white blood cells,

immature germ cells.

Round cells alone do not prove infection.

How many white cells are considered elevated?

Approximately more than:

1 million leukocytes/mL

is generally considered leukocytospermia.

Does leukocytospermia mean I need antibiotics?

Not automatically.

Evidence of genuine infection should be sought.

Does pH diagnose infection?

No.

pH must be interpreted with other clinical findings.

Does low-volume semen mean infertility?

Not necessarily.

First consider:

complete collection,

abstinence interval.

Persistent very low volume can require further evaluation.



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What if there is no semen at orgasm?

This may indicate:

anejaculation,

retrograde ejaculation,

another ejaculatory disorder.

It requires assessment.

When should semen analysis be repeated?

WHO's 2025 infertility guideline suggests repeating an abnormal semen analysis after a minimum of:

11 weeks.

Earlier repeat testing may be appropriate in selected situations such as collection problems or unexpected azoospermia.

If everything is normal, should semen analysis always be repeated?

WHO 2025 suggests that when all parameters are within WHO reference ranges:

routine repetition is generally unnecessary.

Why wait 11 weeks?

Because sperm development takes time and semen parameters vary naturally.

The interval allows a more meaningful reassessment of sperm production.

Can fever cause a temporarily poor semen report?

Yes.

A significant febrile illness can temporarily affect sperm production and quality.

Can smoking affect semen?

Yes.



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Smoking is among the modifiable reproductive risks addressed in fertility-care guidance.

Can obesity affect sperm?

It may contribute through:

hormonal,

metabolic

pathways in some men.

Does heat affect sperm?

Significant repeated heat exposure may affect testicular sperm production in susceptible men.

Can anabolic steroids reduce sperm?

Yes.

They can suppress the hormonal system controlling spermatogenesis.

Can testosterone treatment cause azoospermia?

It can markedly suppress sperm production in some men.

When are male hormones required?

Especially when there is:

azoospermia,

oligozoospermia,

impaired libido,

erectile dysfunction,

testicular atrophy,

suspected endocrine disease.



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When is genetic testing needed?

Particularly in:

azoospermia,

severe oligozoospermia,

selected obstructive conditions.

The exact tests depend on the clinical picture.

When is Y-chromosome microdeletion testing recommended?

Current AUA/ASRM guidance particularly recommends it for primary infertility with:

azoospermia, or

sperm concentration ≤ 1 million/mL

when there is evidence of impaired sperm production.

Does every infertile man need scrotal ultrasound?

No.

Imaging should be:

targeted.

Does every infertile man need sperm DNA fragmentation?

No.

AUA/ASRM does not recommend it routinely during the initial evaluation.

Should every infertile man take antioxidants?

Current WHO guidance does not make a recommendation either for or against routine antioxidants because fertility-outcome evidence remains insufficient.

Can varicocele cause an abnormal semen report?

Yes, in selected men.



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Does every varicocele need surgery?

No.

AUA/ASRM supports considering repair particularly when there is:

infertility,

palpable varicocele,

abnormal semen.

A tiny nonpalpable varicocele seen only on ultrasound is different.

Does a normal semen analysis mean the problem must be the woman?

No.

Never use fertility testing to blame one partner.

Some infertility remains:

unexplained,

combined.

Can natural pregnancy happen with a low sperm count?

Yes.

The probability depends on:

severity,

motility,

total sperm output,

female fertility.

Does severe oligospermia always require ICSI?

No.

But severe abnormalities deserve specialist evaluation, and assisted reproduction may be required depending on the couple.



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Can azoospermia be treated?

Some causes are treatable or allow biological parenthood through:

reconstruction,

treatment of hormonal disorders,

surgical sperm retrieval with ICSI.

Other causes have a poorer prognosis.

Diagnosis is essential.

Can Unani medicine improve sperm count?

Some small Unani clinical studies have reported improvement in sperm count or motility in selected men with idiopathic oligospermia.

However, the evidence remains limited and should not be generalized to every cause of male infertility.

Can Unani medicine cure azoospermia?

There is no responsible basis for claiming that all azoospermia can be cured with Unani medicine.

Azoospermia must first be classified as:

obstructive,

non-obstructive.

Can Unani medicine treat genetic infertility?

It cannot correct missing chromosomes or genetic deletions.

Supportive treatment may still contribute to general wellbeing.

Can Unani medicine open blocked reproductive ducts?

Established mechanical obstruction may require:

reconstructive surgery,



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sperm retrieval.

Can Unani medicine be combined with modern fertility care?

Yes, in appropriate patients, provided:

the diagnosis is understood,

medicines are reviewed for safety/interactions,

important evidence-based treatment is not delayed.

A Message From Dr. Nizamuddin Qasmi to Men Receiving an Abnormal Report

Please do not panic when you see:

one red number.

Do not search the internet and conclude:

“I am infertile.”

First determine:

Was the sample collected correctly?

Is the abnormality mild or severe?

Is one parameter abnormal or several?

Does it persist?

Is there a treatable cause?

One semen analysis provides:

information.

It does not define your:

masculinity,

sexual identity,

worth as a husband.

A Message to Men With Low Morphology

Do not interpret:



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4%

as:

“Only four sperm out of 100 can make a baby.”

Strict morphology does not work that way.

It is a standardized laboratory classification.

Your report should be interpreted with:

concentration,

motility,

total sperm,

partner factors.

A Message to Men With Azoospermia

If your report says:

azoospermia,

do not immediately assume that fatherhood is impossible.

The first priority is:

confirmation and classification.

We need to determine:

Is sperm production occurring?

Is there an obstruction?

Are hormones abnormal?

Is a genetic factor present?

Could sperm be retrieved?

Only then can prognosis be discussed responsibly.

A Message to Couples

A semen report belongs to:

the fertility evaluation of the couple.



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It should never become:

a source of blame.

A slightly low sperm count may coexist with:

excellent female fertility.

A normal sperm report may coexist with:

tubal infertility.

Both partners deserve:

respectful parallel assessment.

A Message About Unani Medicine

As a Unani physician, I believe male reproductive care can benefit from attention to:

Mizaj,

nutrition,

digestion,

sexual function,

general health,

lifestyle.

But modern semen analysis has given us something extremely valuable:

objective measurement.

I therefore do not prefer vague treatment based only on the statement:

“Your semen is weak.”

I want to know:

Which parameter is abnormal?

Why is it abnormal?

Is the problem functional, hormonal, structural, genetic or unexplained?

Then Unani medicine can be used:

intelligently and selectively

where it may support the patient.



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That is the model of integrative medicine I consider scientifically responsible.

Current Medical Understanding — 2026 Update

Several points are especially important in current male-infertility practice.

WHO Sixth Edition remains the semen-analysis laboratory standard

The **2021 WHO Sixth Edition** remains the current manual for standardized semen examination and includes:

basic,

extended,

advanced

testing categories.

The current lower reference values include approximately:

volume 1.4 mL,

total sperm 39 million,

concentration 16 million/mL,

total motility 42%,

progressive motility 30%,

vitality 54%,

morphology 4%.

Reference values are not fertility cut-offs

They represent lower reference points in a population that achieved natural conception.

They do not divide humanity into:

fertile versus infertile.

WHO changed the clinical approach to repeat testing in 2025

WHO's first global infertility guideline now suggests:

no routine repeat when all semen parameters are within WHO reference ranges;

repeat an abnormal semen analysis after a minimum of approximately **11 weeks**.

This is one of the most important recent changes for clinical interpretation.



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Male and female evaluation should proceed together

WHO and AUA/ASRM continue to emphasize:

couple-based infertility care.

Genetic testing is becoming more precisely targeted

The **AUA/ASRM 2024 amendment** narrowed the Y-chromosome microdeletion-testing threshold in severe oligospermia, particularly focusing on men with sperm concentration:

≤1 million/mL

with appropriate clinical findings.

This helps reduce unnecessary testing while concentrating genetic evaluation where diagnostic yield is higher.

Advanced sperm tests remain selective

Sperm-DNA-fragmentation testing is **not** recommended as a universal first-line investigation.

Likewise:

antisperm antibodies,

advanced oxidative-stress assays

should not simply be ordered for every man.

Antioxidant evidence remains uncertain

WHO's 2025 guideline made no recommendation for or against antioxidant supplementation in male infertility because the effect on meaningful reproductive outcomes remains uncertain.

This is important because semen supplements are widely marketed despite incomplete evidence.

The modern principle is therefore:

investigate the cause rather than treating every abnormal semen report empirically.

Conclusion

A semen analysis is the cornerstone of male fertility assessment, but it must be interpreted correctly.



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The current WHO Sixth Edition lower reference values are approximately:

Volume — 1.4 mL

Total sperm number — 39 million per ejaculate

Sperm concentration — 16 million/mL

Total motility — 42%

Progressive motility — 30%

Vitality — 54%

Morphology — 4%

pH — above approximately 7.2

Leukocytes — below approximately 1 million/mL.

But these figures are:

not pass/fail fertility scores.

A man slightly below one value can still achieve natural pregnancy.

A man above every value is not automatically guaranteed conception.

The overall pattern matters.

For sperm quantity, both:

concentration,

total sperm number

should be reviewed.

For movement:

progressive motility

is especially useful.

For morphology:

4% normal forms does not mean 96% of sperm are genetically defective.

For severely reduced movement:

vitality

may distinguish live immotile sperm from dead sperm.

For increased round cells:

leukocytes must be distinguished from immature germ cells.

For azoospermia:

confirmation and classification are essential.

Azoospermia may be:

obstructive,

non-obstructive.

These conditions have very different prognosis and treatment.

The WHO's **2025 infertility guideline** now suggests repeating an abnormal semen analysis after at least approximately:

11 weeks

while generally avoiding unnecessary repeat testing when the initial report is completely within WHO reference ranges.

Persistent abnormalities should lead to:

diagnosis—not simply supplements.

Depending upon the pattern, further assessment may involve:

reproductive examination,

FSH/testosterone,

genetic testing,

evaluation for clinical varicocele,

investigation for obstruction,

infection testing when genuinely indicated.

Selected men may benefit from:

correction of hormonal abnormalities,

treatment of genuine infection,

varicocele repair,

reconstructive surgery,

sperm retrieval,

IUI,

IVF/ICSI.



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The correct treatment depends on:

the cause.

From the **Unani perspective**, classical medicine provides a valuable whole-person framework incorporating:

Mizaj,

nutritional wellbeing,

digestion,

sexual health,

general reproductive health.

Unani clinical research has reported improvements in semen parameters in selected men with idiopathic oligospermia, although much of the evidence remains:

small,

older,

preliminary.

Therefore, I consider the most scientifically responsible role of Unani medicine to be:

diagnosis-led supportive and individualized care.

It should not be used to make unsupported promises such as:

repairing a Y-chromosome deletion,

reversing every azoospermia,

opening every obstructed reproductive duct,

guaranteeing pregnancy.

At **Saira Health Care**, my approach is:

collect the semen sample correctly → interpret every parameter together → repeat an abnormal result appropriately → examine the male partner → identify hormonal, anatomical, genetic, infectious or lifestyle causes → evaluate the female partner in parallel → integrate responsible Unani supportive treatment where appropriate → choose natural conception, IUI, IVF or ICSI according to the couple's actual reproductive needs.

The most important message I want every patient to remember is:

A semen analysis is not a judgment about masculinity.



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It is a:

diagnostic window into male reproductive function.

And the correct question is not simply:

“Is my sperm report normal?”

The more useful question is:

“What does this complete semen pattern mean for our chances of conception, and is there a treatable cause?”

That is how semen analysis becomes:

intelligent male-fertility care.

About the Author

Dr. Nizamuddin Qasmi

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

Qualifications & Professional 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 is a well-qualified physician with a **specialized clinical focus on Sexual Disorders & Infertility** at Saira Health Care.

His clinical work includes evaluation of:

abnormal semen analysis,

oligozoospermia,

asthenozoospermia,

teratozoospermia,

OAT,

azoospermia,



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male infertility,
varicocele-related fertility problems,
erectile dysfunction,
ejaculatory disorders,
fertility-related performance anxiety,
reproductive infections.

His approach emphasizes:

identifying the cause rather than treating only the laboratory number.

Depending upon the individual patient, evaluation may include:

repeat semen analysis,
male reproductive examination,
hormonal evaluation,
genetic investigation,
evaluation for obstruction,
varicocele assessment,
sexual-function assessment,
parallel couple-based fertility evaluation.

Where medically appropriate, individualized Unani principles may be incorporated to support:

nutrition,
digestion,
metabolic wellbeing,
sexual health,
general reproductive wellbeing.

At **Saira Health Care**, the objective is not simply:

“Increase the sperm count.”

The real objectives are:

Why is this parameter abnormal?



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Is the abnormality temporary or persistent?

Is there a treatable cause?

Does the man require genetic or hormonal investigation?

Is natural conception still realistic?

Does the couple need IUI, IVF or ICSI?

and:

How can responsible Unani supportive care be integrated without delaying necessary reproductive treatment?

Medical Disclaimer

This article is intended for professional education and public awareness. It does not replace individualized evaluation by an appropriately qualified physician, fertility specialist, reproductive urologist/andrologist or other appropriate healthcare professional.

WHO semen-analysis reference values are population-based reference limits and must not be interpreted as absolute boundaries between fertility and infertility.

One abnormal semen result may not represent permanent male infertility.

WHO's 2025 infertility guideline suggests repeating semen analysis after a minimum of approximately **11 weeks** when one or more semen parameters fall outside WHO reference ranges, while routine repeat testing is generally unnecessary when all parameters are within range.

Men with:

azoospermia,

severe oligozoospermia,

extremely poor motility,

testicular abnormalities,

significant reproductive history

should receive specialist evaluation rather than relying only on supplements.

External testosterone and anabolic steroids can suppress spermatogenesis and should be disclosed to the treating clinician.



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Antibiotics should not be self-prescribed merely because white blood cells or “pus cells” appear on a semen report.

Antioxidants and fertility supplements should not be considered substitutes for identifying treatable hormonal, anatomical or genetic causes of infertility.

Unani medicine may be incorporated as supportive integrative care in selected patients, but it should not replace evidence-based evaluation or treatment of:

genetic infertility,

severe testicular failure,

reproductive-tract obstruction,

clinically significant varicocele,

active infection,

other major male reproductive disorders.

No medicine, supplement, Unani formulation, surgery, IUI, IVF or ICSI can guarantee pregnancy or live birth.



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