

UNDERSTANDING SEMEN ANALYSIS (WHO CRITERIA)

Macroscopic semen characteristics (Table 1)

Source	Volume	Characteristics
Urethral and bulbourethral glands	0.1-0.2cc	Viscous, clear
Testes, epididymides, vasa deferentia	0.1-0.2cc	Sperm present
Prostate	0.5-1.0cc	Acidic, watery
Seminal vesicles	1.0-3.0cc	Gelatinous, fructose positive
Complete ejaculate	2.0-5.0cc	Liquefies in 20-25min

Commonly used normal semen parameters (WHO) (Table 2)

Volume	>2.0 ml
pH	7.2-7.8
Concentration	>20x10 ⁶ /ml
Motility	>50%
Morphology	>30% with normal morphology
WBC	< 1x10 ⁶ /ml

Gradation of sperm motility (WHO) (Table 3)

Type of motility	Score	Classes of spermatozoa motility	Normal value
No movement	0	Rapid progressive Class A	>25%
Movement, none forward	1	Progressive Class B	>25%
Occasional movement of a few sperm	1+	Class A+B	>50%
Slow, undirected	2	Non progressive Class C	<50%
Slow, directly forward movement	2+	Immotile or static Class D	<50%
Fast, but undirected movement	3-	Class C+D	<50%
Fast, directed forward movement	3		
Very fast forward movement	3+		
Extremely fast forward movement	4		

Nomenclature for semen variables (WHO) (Table 4)

Normozoospermia	Normal ejaculate as defined in tables 1, 2 and 3.
Oligozoospermia	Sperm concentration fewer than 20x10 ⁶ /ml
Asthenozoospermia	Fewer than 50% spermatozoa with forward progression (categories A and B) or fewer than 25% spermatozoa with category A movement
Teratozoospermia	Fewer than 30% spermatozoa with normal morphology
Oligoastheno-teratozoospermia	Signifies disturbance of all three variables (combination of only two prefixes can be used)
Azoospermia	No spermatozoa in the ejaculate
Aspermia	No ejaculate