

APPENDIX 5: Reference Values of Semen Variables

SEMEN PARAMETER	SQA-V TEST NAME	REFERENCE RANGE*	SOURCE
Sperm Concentration (Count)	SPERM CONC.	≥20 M/ml	WHO 4th manual*
Motility (grades a+b+c)	MOTILITY <a+b+c>	-	-
Rapid Progressive Motility (grade a)	RAPID PROG. MOTILITY <a>	≥50% <a+b> or ≥25% <a> only	WHO 4TH manual*
Slow Progressive Motility (grade b)	SLOW PROG. MOTILITY 		
Non Progressive Motility (grade c)	NONPROG. MOTILITY <c>	-	-
Immotility (grade d)	IMMOTILITY <d>	-	-
Morphology (% Normal Forms: WHO 3 rd)	MORPH. NORM FORMS WHO 3rd	≥30%	WHO 3rd manual*
Morphology (% Normal Forms: WHO 4 th)	MORPH. NORM WHO 4 th Strict	≥15%? (Under investigation)	WHO 4 th manual*
Motile Sperm Concentration	MSC	-	-
Progressively Motile Sperm Concentration (grade a)	PMSC <a>	≥10 M/ml <a+b> or ≥ 5 M/ml <a> only	MES Ltd.*
Progressively Motile Sperm Concentration (grade b)	PMSC 		
Functional Sperm Concentration	FSC	≥7 M/ml (WHO 3 rd) ≥3 M/ml (WHO 4 th)	MES Ltd.*
Velocity (Average path velocity – VAP)	VELOCITY	≥5 mic./sec.	MES Ltd.*
Sperm Motility Index	SMI	≥80	MES Ltd.*
Total Sperm Number	SPERM #	≥40 M/ml	WHO 4TH manual*
Total Motile Sperm	MOT. SPERM	-	-
Total Progressively Motile Sperm	PROG. SPERM	≥20 M	MES Ltd.*
Total Functional Sperm	FUNC. SPERM	≥14 M/ml (WHO 3 rd) ≥6 M/ml (WHO 4 th)	MES Ltd.*

*Each laboratory should establish its own reference ranges for semen parameters. The ranges established above are based on WHO 3rd or 4th standards or MES Ltd. (for proprietary semen parameters)