

Report

Computer Assisted Semen Analysis (CASA)

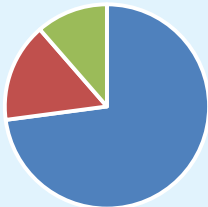
The system follows WHO (2021) strict criteria for motility patterns & morphometric assessment of human semen.

Barcode		Ref. by	
Name	Demo	Collection Date	17/12/2020
Age	2 Yr	Analysis Date	

Specimen Description :		
Volume	1.5	> 2.0
pH	60	7.2-8.0
Color	cl	white-gray
Odor	sm	Normal
Viscosity	50	Normal
Liq. Time	30	10-30min
Liq. State		

Collection Info :		
Coll. Location		
Abstinence	20	3-7 days

Agglutination & Aggregation	
Aggregation	
Agglutination	ag1
Other	

Test Result :				 <ul style="list-style-type: none"> ■ Prog. Mot (PR) ■ Non Prog. (NP) ■ Immotile (IM)
Test	Result	Status	Ref. Value	
Concentration(M/ml)	34.1936		>= 15(M/ml)	
Tot. Sperm No.(M)	51		>=39(M/Elaculate)	
Prog. Motility(PR)	72.9		>=32%	
Tot. Motility(PR+NP)	88.6		>=40%	
Morph. Index	2.8		>=4% normal accepted	
Vitality	76.9231		>58%	

Cells other than sperms :			
WBC	1	< 5/H.P.F	Pinheads : Pinhead sperms are not counted as spermatozoa or head defects because they possess no chromatin or head structure anterior to the basal plate.
RBC	1	< 5/H.P.F	
Spermatogenic cells		/H.P.F	
Epithelial cells		/H.P.F	
Comment :			

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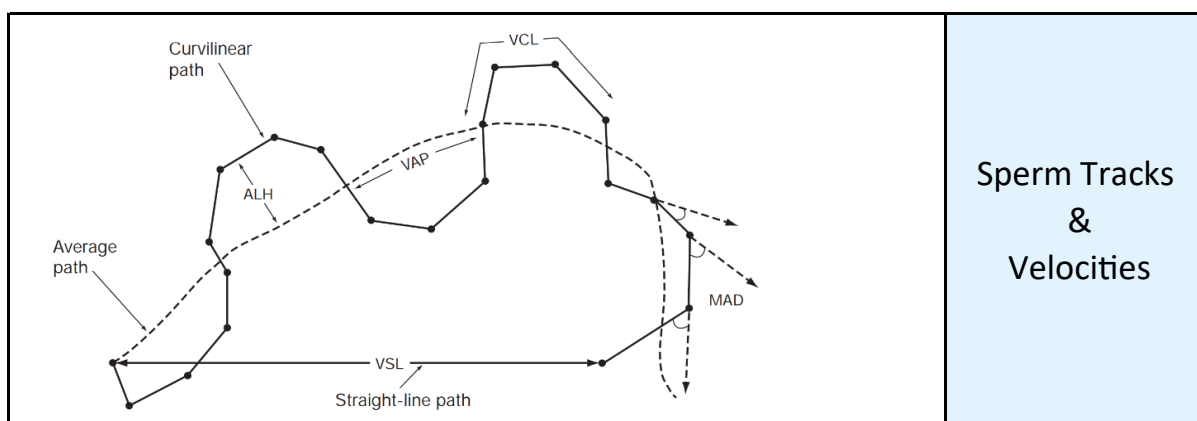
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CONCENTRATION AND MOTILITY ANALYSIS

Dynamic Parameters Report (I)				
Test	Conc.(millions/ml)	Tot. No.(Million)	%	Ref. Values
Tested Sperm	70	51		≥ 15 (millions/ml)
Tot. Mot (PR+NP)	30.25	45.38	88.6	$\geq 40\%$
Prog. Mot (PR)	24.88	37.32	72.9	$\geq 32\%$
Non Prog. (NP)	5.37	8.06	15.7	
Immotile (IM)	3.91	5.86	11.4	$\leq 50\%$
* Prog. motility (PR)	spermatozoa moving actively, either linearly or in a large circle, regardless of speed			
* Non Prog. motility (NP)	all other patterns of motility with an absence of progression, i.e swimming in small circles, the flagellar force hardly displacing the head,			
* Immotile (IM)	no movement			

Dynamic Parameters Report (II)		
Parameters	Values	Description
VCL [$\mu\text{m/s}$]	143.65	Curvilinear Velocity
VSL [$\mu\text{m/s}$]	65.99	Straight Line Velocity
VAL [$\mu\text{m/s}$]	71.46	Avg. Path Velocity
MAD [°]	35.1	Mean Angular Degree
ALH [μm]	2.84	Amplitude of lateral head Disp.
BCF [Hz]	0.47	Beat-Cross Frequency
LIN	0.9	Linearity(VSL/VCL)
WOB	0.51	Wobble(VAP/VCL)
STR	50.01	Straightness(VSL/VAP)



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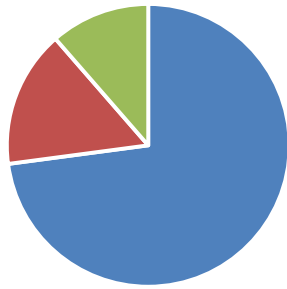
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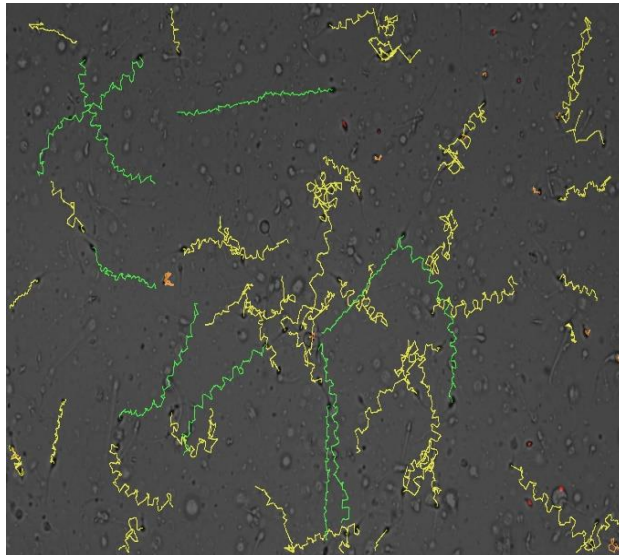
SEMEN ANALYSIS CHARTS

Sperm Distribution



■ Prog. Mot. (PR) ■ Non Prog. (NP)
■ Immotile (IM)

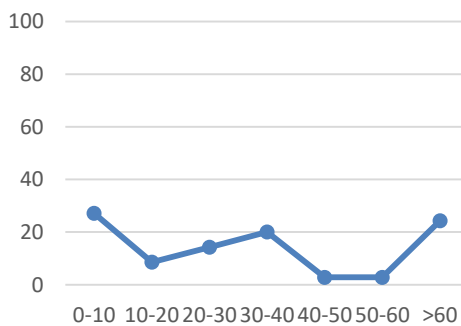
Sperm Motility Track Image



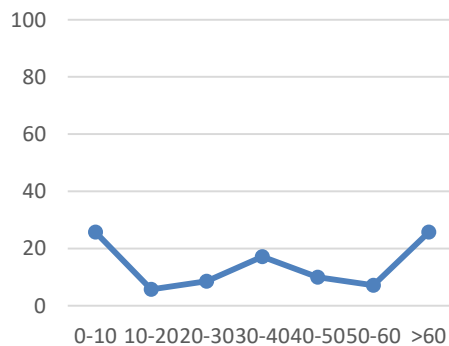
* The microscopic image is taken in real-time.

* Each track is presented in colour code according to the type of spermatozoa W.H.O classification.

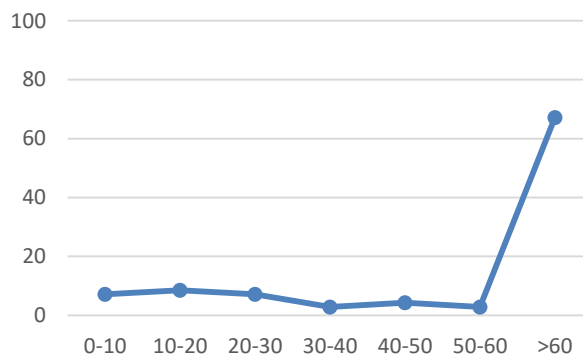
Progressive Velocity(VSL)



Track Speed(VCL)



Path Velocity(VAP)



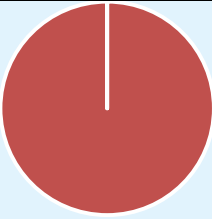
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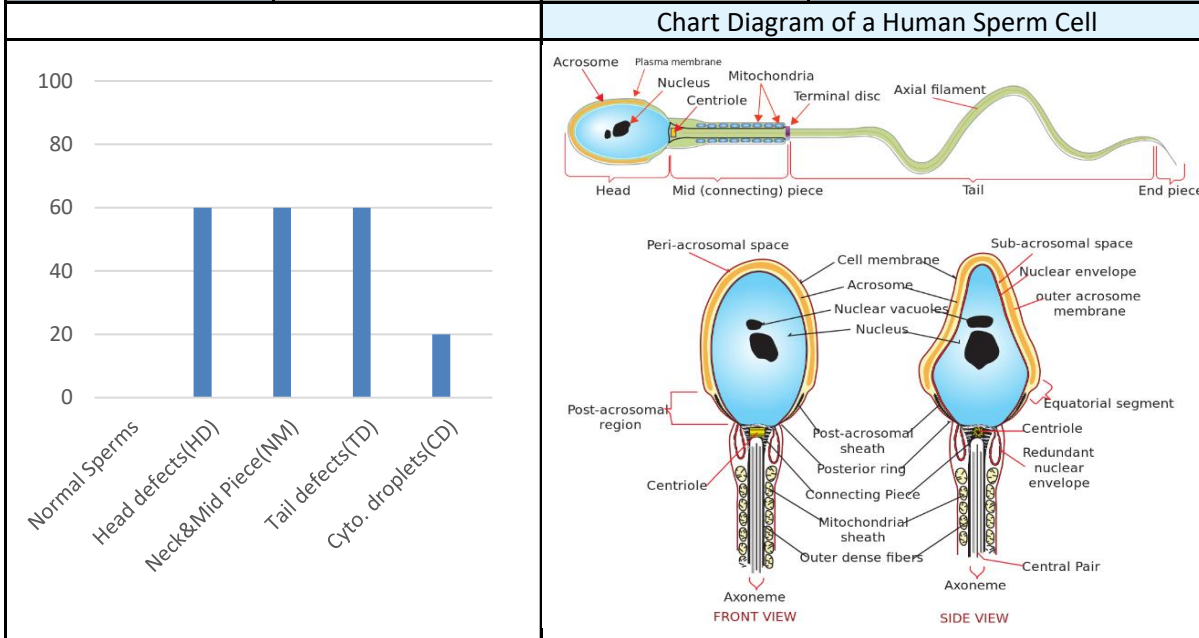
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SPERM CYTOMORPHOLOGICAL STUDY

Parameters	Result	Status	Ref. Value	Morphology Chart
Normal Sperms %	0		> 4% accepted	 <ul style="list-style-type: none"> ■ Normal Sperms % ■ Abnormal Sperms %
Abnormal Sperms %	100			
MAI	2.8			
TZI	2		up to 1.6	
SDI	1.4		up tp 1.6	

*MAI(Multiple Anomalies Index)	mean no. of anomalies per abnormal spermatozoon.
*TZI(Teretozoospermic Index)	no. of defects divided by the no. of abnormal sperms.
*SDI(Sperm Deformity Index)	no. of defects divided by no. of sperm count.

Basic Classification	Total	%
Normal Sperms	0	0
Head defects(HD)	3	60
Neck&Mid Piece(NM)	3	60
Tail defects(TD)	3	60
Cyto. droplets(CD)	1	20



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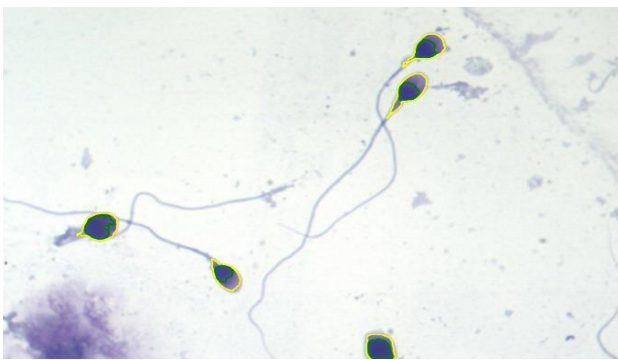
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SPERM CYTOMORPHOLOGICAL STUDY

Normal Sperms				
				Images as per W.H.O (2010) Std.

Terato Sperms				
				Images as per W.H.O (2010) Std.
Tapered Head	Round Thick	Two Cells	> 2 vac, PA vac	
	> 70% acrosome		< 40% acrosome	

Morphology Image



* The microscopic image is taken in real-time.

* Image cropping & classification according to W.H.O.

Class	Head Area(μm)	Head Len.(μm)	Length/Width %	Elongation(μm)	Acrosome (%)
Mean of Normal Sperm	0	0	0	0	0
Mean of Terato Sperm	1.5	36.17	12.77	1.46565	42
Reference Values					

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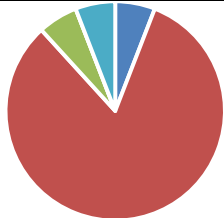
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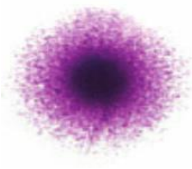
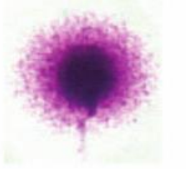



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DNA FRAGMENTATION ANALYSIS

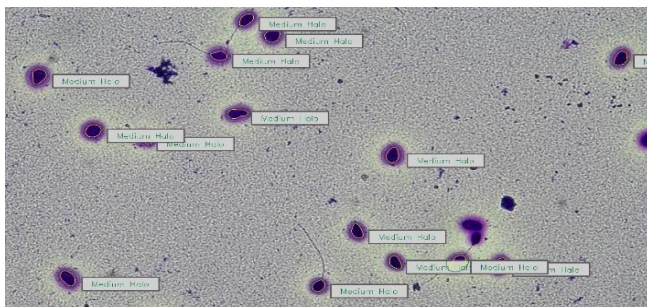
Parameters	Values	Status
Big Halo %	5.88235	
Medium Halo %	82.3529	
Small Halo %	5.88235	
Without Halo %	0	
Degraded %	5.88235	



- Big Halo %
- Medium Halo %
- Small Halo %
- Without Halo %
- Degraded %

	Big Halo		Medium Halo		Small Halo
	No Halo		Degraded		

DNA Fragmentation Image



* The microscopic image is taken in real-time.

* Image cropping & classification according to W.H.O.

DFI

0.117647

DNA Fragmentation Index
(%DFI,% sperm cells containing damaged DNA)

≤ 15% DFI = Excellent Sperm DNA Integrity

>15 to <25% DFI = Good to fair Sperm DNA Integrity

>25 to < 50% DFI = Fair to Poor Sperm DNA Integrity

≥ 50% DFI = Poor Sperm DNA Integrity