Dr. Borus Andro Lab
& Research Centre

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Semen Analysis

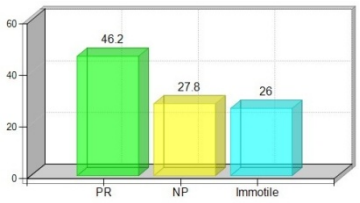
Results provided by Prime Sperm CASA (Computer-Aided Sperm Analysis system)

Patient

Patient Name	Mr. Test sample			Age/Sex	M
Address	-	Date of sample	02Jan2020	Physician	Dr.Divya,OG

Sample Description

PARAMETERS	VALUES	NORMAL
Place of Collection	Dr Borus Andro Lab	
Time of Collection	12.30PM	
Time of Examination	1.00PM	
Viscosity	Normal	
Abstination, days	4	3-4 days
Lost ejaculate	No	
Liquefaction, min	30	30-60 min
Volume, ml	3	1.5-6.0 ml
Color	Opalescent	
Smell	Normal	
Fructose	Positive	
Agglutination	Normal	
pH	7.5	7.2-7.8
Culture Test	Yes	



PR - *progressively motile sperms*
NP - *nonprogressively motile sperms*

Analysis Results

Parameters	Values	Status	NORMAL
Concentration, M/ml	**34.7**	Passed	**> 15 M/ml**
Total number, M	**104**	Passed	**> 39 M**
Progressive motiltiy (PR), %	**46.2**	Passed	**> 32 %**
Total motlity (PR+NP), %	**74**	Passed	**> 40 %**
Vitality	**60**	Passed	**> 58 %**
Morphology, normal forms, %	**13.5**	Passed	**> 4 %**
DNA Fragmentation Index %	**40**	Fair	**< 30%**

Non-Sperm Cells

White blood cells, M/ml	0.135	Immature germ cells, M/ml	0
Round cells, M/ml	0		

Conclusion:	Normozoospermia
Comment:	Normozoospermia - Total number of spermatozoa, and percentages of progressively motile (A+B) equal to or above the reference limit.

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Semen Motiltiy Analysis

Results provided by Prime Sperm CASA (Computer-Aided Sperm Analysis system) **(Page No: 02)**

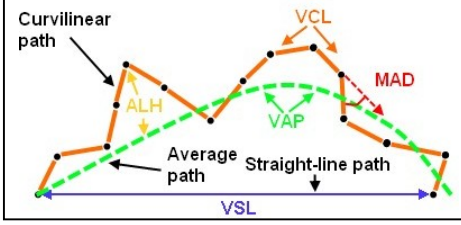
Patient Name	Mr. Test Sample	Date of sample	02Jan2020	Physician	Dr.Dhivya,OG

Motiltiy Classes

A - fast, progressive. B- slow, progressive. C - nonprogressive. D - immotile. A+B= progressive motiltiy. A+B+C= total motilitiy.

Concentration, M/ml	34.7	**A+B, %**	46.2	**A+B+C, %**	74
Class A, %	36.9	**Class A, M/ml**	12.8	**Class A, total**	38.4
Class B, %	9.3	**Class B, M/ml**	3.23	**Class B, total**	9.69
Class C, %	27.8	**Class C, M/ml**	9.64	**Class C, total**	28.9
Class D,%	26	**Class D, M/ml**	9.03	**Class D, total**	27.1

Sperm Movement Parameters

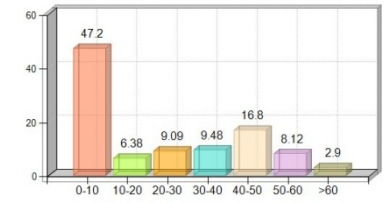


VSL, straight-line (rectilinear) velocity.
VCL, curvilinear velocity. A measure of cell vigour.
VAP, average path velocity.
ALH, amplitude of lateral head displacement.
LIN, linearity. The linearity of a curvilinear path, VSL/VCL.
STR, straightness. Linearity of the average path, VSL/VAP.
WOB, wobble. VAP/VCL.
BCF, beat-cross frequency. The average rate at which the curvilinear path crosses the average path.
MAD, mean angular displacement.

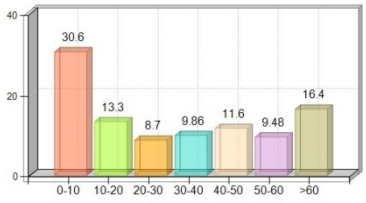
Mean Values by Classes

	VCL	VSL	VAP	ALH	BCF	LIN	STR	WOB	MAD
Class A	55	42	33	1.8	2.1	0.78	0.87	0.56	38
Class B	24	11	14	1.3	3.1	0.49	0.7	0.55	67
Class C	26	18	5.9	0.68	2	0.59	0.36	0.33	47
Class D	5.1	0.69	2.7	0.56	2.5	0.13	0.23	0.55	96

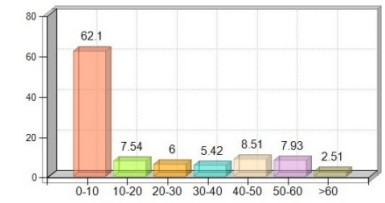
VSL



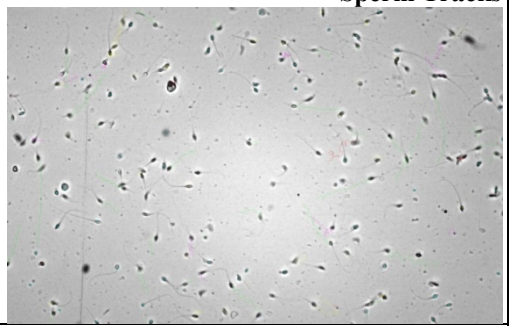
VCL



VAP



Sperm Tracks



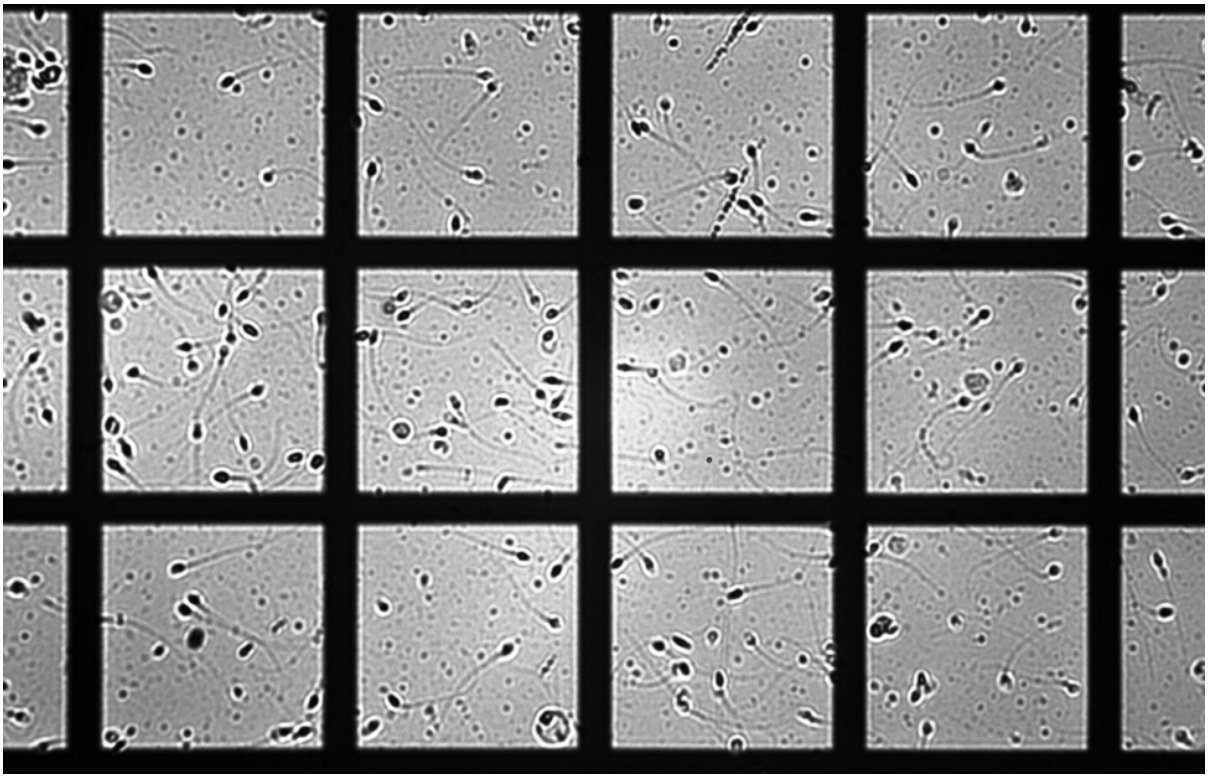
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Semen Analysis Images

Results provided by Prime Sperm CASA (Computer-Aided Sperm Analysis system) **(Page No: 03)**

Patient Name	Mr. Test Sample	Date of sample	02Jan2020		

Semen Motility Image



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Semen Morphology Analysis

Results provided by Prime Sperm CASA (Computer-Aided SpermAnalysissystem) **(Page No:4)**

Patient Name	Mr. Test Sample	Date of sample	02Jan20		

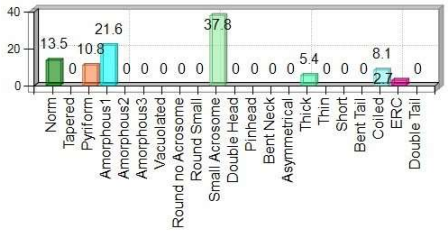
Morphology, normalforms,%	**13.5**	Passed	**> 4 %**

Head Defects		**Relative to total number of analysed sperms, %**	**Relative to abnormal sperms, %**
Tapered		0.2	0.5
Pyriform		10.8	12.5
Round, no acrosome		0	0
Round, small		0	0
Amorphous, type 1		21.6	25
Amorphous, type 2		0	0
Amorphous, type 3		0	0
Vacuolated		0	0
Small acrosome		37.8	43.8
Double head		0	0
Pinhead		0	0
Neck Defects			
Bent neck		0.2	0.4
Asymmetrical		0	0
Thick insertion		5.4	6.3
Thin		0	0
Tail Defects			
Short		0	0
Bent		0	0
Coiled		8.1	9.4
ERC		2.7	3.1

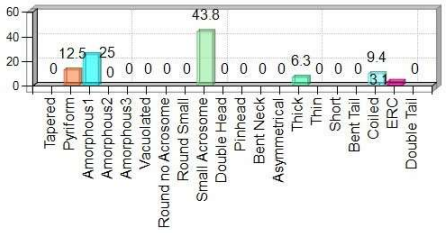
WHO NORM

MAI, the multiple anomalies index (number of all anomalies / number of abnormal spermatozoa)	1.2	**0.74-1.58**

Morphology Forms (% ofanalysedsperms



Distribution of PathologyTypes



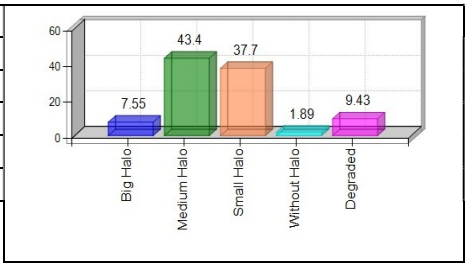
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Semen DNA FRAGMENTATION Analysis

Results provided by Prime Sperm CASA (Computer-Aided SpermAnalysissystem(Page No:5)

Patient Name	Mr. Test Sample	Date of sample	02Jan20	

PARAMETERS	VALUES	STATUS
Big halo, %	7.55	Without Fragmentation
Medium halo, %	43.4	Without Fragmentation
Small halo, %	37.7	With Fragmentation
Without halo,%	1.89	With Fragmentation
Degraded, %	9.43	With Fragmentation



DFI	40%	Fair

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

≤ 30% DFI = Excellent sperm DNAintegrity
>30 to 40% DFI = Good sperm DNA integrity
>40 to 50% DFI = Fair sperm DNA integrity
>50% DFI = Poor sperm DNA integrity

Note:
The above values relate to natural and IUI conceptions

What is the Sperm DNA fragmentation?
Dedecting the deferent levels (%) of Genitic(DNA) Integrity (ie) Fragmentation (Damage) inthe sperm cells.
The genetic integrity of the spermatozoan is essential for normal embryo development. A high level of DNA fragmentation in sperm cells may represent a cause of male infertility that conventional examinations - sperm concentration, motility analysis, morphology assessment - cannot detect. Results reported in the scientific literature show regardless of the assisted reproductive technology used, elevated levels of DNA fragmentation above the critical threshold will significantly compromise the possibility of a successful pregnancy

Causes of Sperm DNA Fragmentation
A major causative factor for sperm DNA damage is oxidative stress. Other factors include abnormalities in the regulation of apoptosis, or defects in topoisomerase activity. Increased sperm DNA fragmentation is also associated with:

1.Infection
2.Elevated testicular temperature
3.Exposure to environmental
4.Leucocytospermia
5.Diet & Stress
6.Occupational pollutants
7.Sperm cytoplasmic droplets
8.Cigarette smoking
9. Advanced age
10.Febrile illness
11.Drug use
12.Varicocoele

Indications for male patients who may benefit from the Test
1.Unexplainedinfertility
2.Poorblastocystdevelopment
3.Recurrent miscarriageinpartner
4.Poorsemenparameters
5. Arrested embryo development
6.Multiple failed IVF/ICSItreatment
7..Advanced age varicocoele
8.Exposure to harmful substances**Treatmen& FurtherReferences:**
http://www.tdlpathology.com/services-divisions/tdl-andrology/sperm-dna-fragmentation
https://www.fertilityauthority.com/articles/fertility-clinic-testing-sperm-dna-fragmentation.

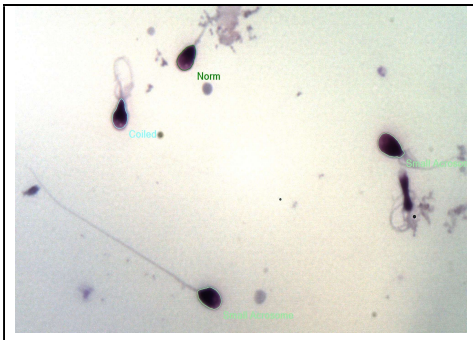
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Semen Analysis Images

Results provided by Prime Sperm CASA (Computer-Aided SpermAnalysissystem) **(Page No: 6)**

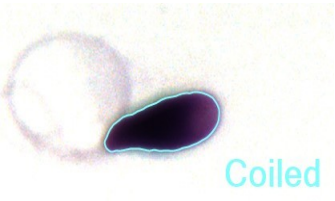
Patient Name	Mr. Test Sample	Date of sample	02Jan20	

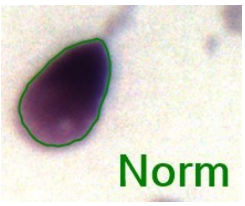
Semen Morphology & VitalityImages

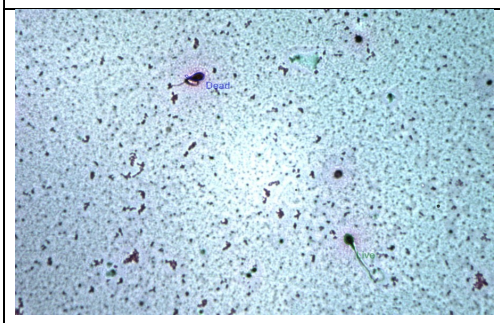








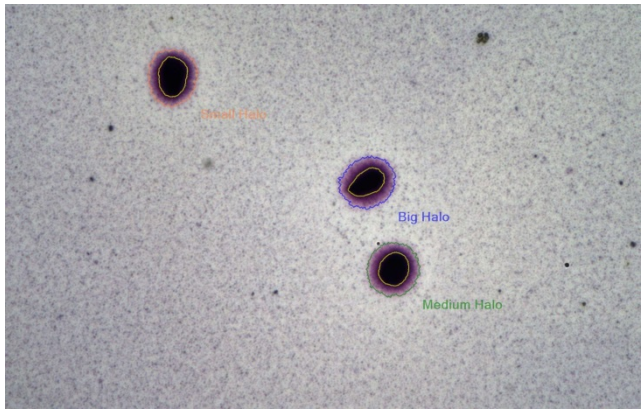


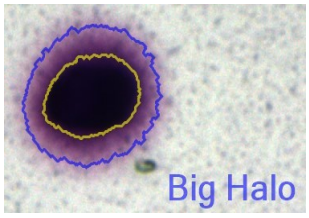


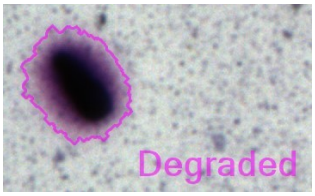


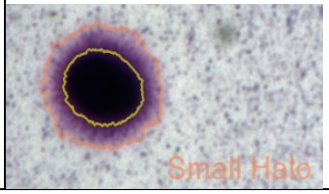


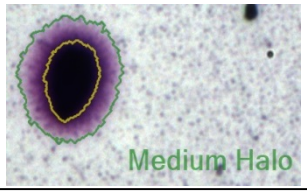
Semen DNA Fragmentation Images











I.Veerammal
JuniorEmbryologist