



### Final Laboratory Report

**Ahmed Ahmed Abdalla**

Age : 19 years

Sex : Male

File Number : 260705233



**Sample Collected At:**  
Laboratory

**Ref. By:** Dr. Ahmed Ridwan



O-MAIN-20260712-0003

**Registered on:** 10:20 05 Jul, 26

**Collected on:** 10:40 05 Jul, 26

**Reported on:** 22:58 12 Jul, 26

### COMPUTER ASSISTED SEMEN ANALYSIS

Reference CASA parameters, images and reference values

#### CASE INFORMATION

Collection method, abstinence duration and pre-analysis case details.

| PARAMETER  | RESULT                         |
|------------|--------------------------------|
| Collection | Sample Musturbated Inside Lab. |
| Abst. Days | 4 Days                         |

#### ANALYSIS PARAMETER

Primary semen analysis parameters exactly as captured from the reference CASA workflow.

| PARAMETER                     | RESULT | STATUS | REFERENCE VALUE                  |
|-------------------------------|--------|--------|----------------------------------|
| Count (million/ml)            | 73.42  | NORMAL | >= 15 (million/ml)               |
| Count/Ejaculate (million)     | 183.55 | NORMAL | >= 39 (million/Ejaculate)        |
| Motile ratio (PR+NP) (%)      | 73.12  | NORMAL | Total motility (PR+NP) >= 40%    |
| Progressive motility (PR) (%) | 35.51  | NORMAL | Progressive motility (PR) >= 32% |
| Morph. normal sperms (%)      | 68.75  | NORMAL | >= 4% Normal is accepted         |
| TZI                           | 1      | NORMAL | <= 1.6                           |
| SDI                           | 0.34   | NORMAL | < 1.6                            |

#### PHYSICAL AND CHEMICAL PROPERTIES

Macroscopic, physical and chemical semen sample properties.

| PARAMETER          | RESULT                    | REFERENCE VALUE |
|--------------------|---------------------------|-----------------|
| Volume (ml)        | 2.5                       | >= 1.5 ml       |
| pH                 | 8                         | >= 7.2          |
| Color              | Whitish                   |                 |
| Odor               | Seminefrous odour         |                 |
| Viscosity          | high Viscus               |                 |
| Liquefaction time  | > 180 Minute              |                 |
| Liquefaction state | In Complete Liquification |                 |
| Agglutination      | No agglutination Detected |                 |
| Other Findings     | Nil                       |                 |



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#### OTHER CELLS

Round cells, inflammatory cells and additional microscopic observations.

| PARAMETER           | RESULT | REFERENCE VALUE |
|---------------------|--------|-----------------|
| Pin Head            | 0      |                 |
| White Blood Cells   | 3-5    | < 5 /HPF        |
| Red Blood Cells     | 2-4    | < 5 /HPF        |
| Spermatogenic Cells | 3-5    | < 10 /HPF       |
| Epithelial Cells    | Nil    | Nil             |

#### SPERM MOTILITY REPORT

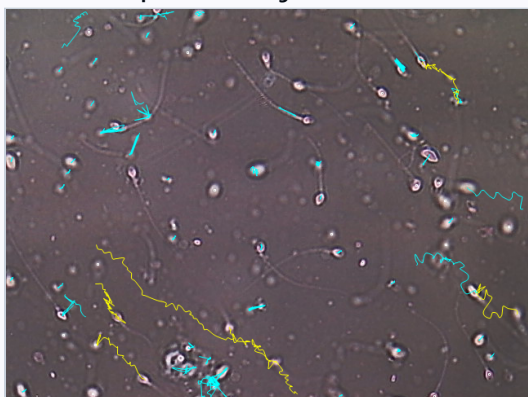
Motility distribution by concentration, total number and percentage.

| CLASSIFICATION            | CONC. (MILLION/ML) | TOTAL NUMBER (MILLION) | PERCENTAGE % |
|---------------------------|--------------------|------------------------|--------------|
| Tested Sperm              | 73.42              | 183.55                 | 100          |
| Total motility (PR+NP)    | 53.68              | 134.21                 | 73.12        |
| Progressive motility (PR) | 26.07              | 65.18                  | 35.51        |
| Non progressive (NP)      | 27.61              | 69.03                  | 37.61        |
| Immotile (IM)             | 19.74              | 49.34                  | 26.88        |

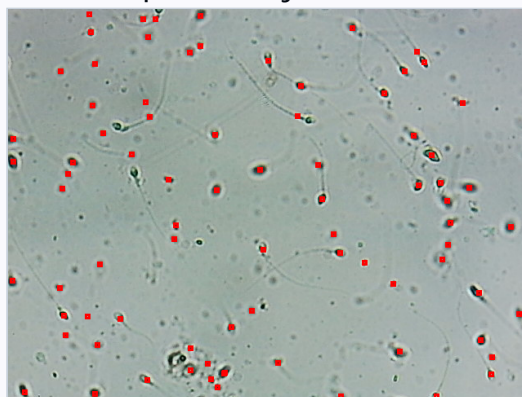
#### DARK FIELD AND SPERM COUNT IMAGES

Dark field and sperm count microscopy images.

Dark Field and Sperm Count Images



Dark Field and Sperm Count Images





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#### SEMEN ANALYSIS CHART

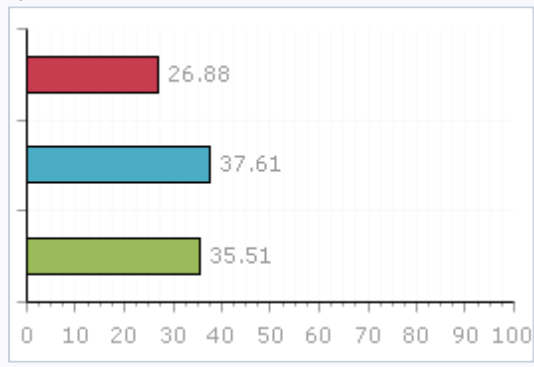
Velocity and motion metrics from the CASA analysis chart.

| PARAMETER                           | RESULT |
|-------------------------------------|--------|
| VCL : Curvilinear Velocity [um/s]   | 15.19  |
| VSL : Straight Line Velocity [um/s] | 6.11   |
| VAP : Average Path Velocity [um/s]  | 8.22   |
| LIN : Linearity ( VSL / VCL )       | 0.4    |
| WOB : Wobble ( VAP / VCL )          | 0.54   |
| STR : Straightness ( VSL / VAP )    | 0.74   |

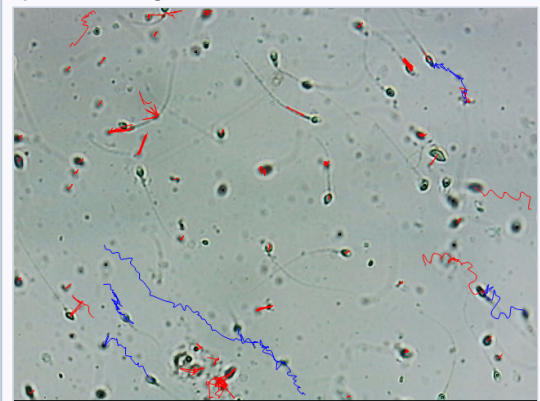
#### SPERM DISTRIBUTION CHART / TRACK IMAGE

Distribution chart and representative sperm track image captured from the reference CASA report.

Sperm Distribution Chart



Sperm Track Image



#### INTERPRETATION

Structured semen analysis impression and follow-up comments.

| PARAMETER                     | RESULT                                                                                |
|-------------------------------|---------------------------------------------------------------------------------------|
| Progressive motility (PR)     | spermatozoa moving actively, either linearly or in large circle, regardless of speed. |
| Non progressive motility (NP) | all other patterns of motility with an absence of progression.                        |
| Immotile (IM)                 | no movement                                                                           |



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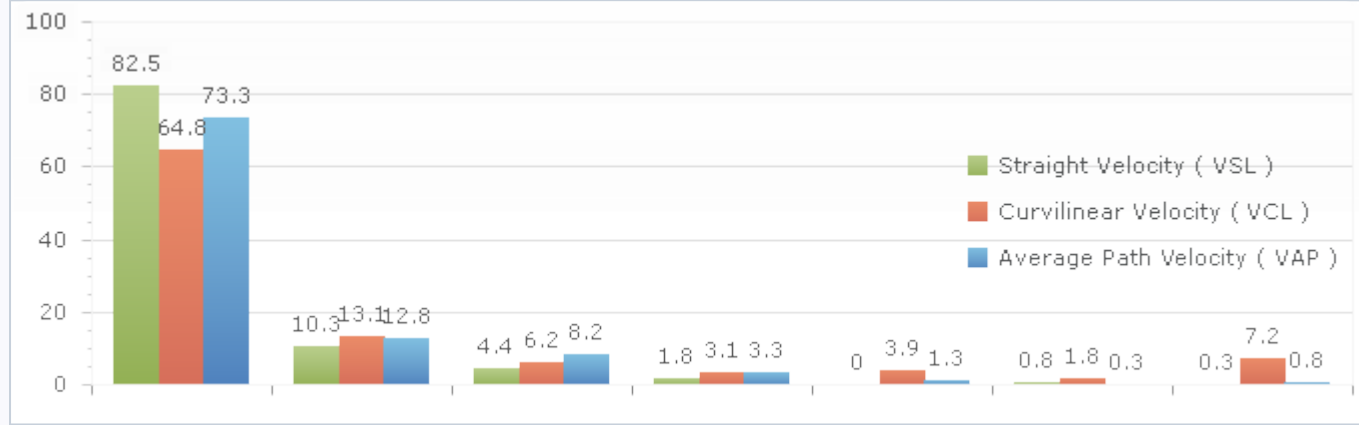
### COMPUTER ASSISTED SEMEN ANALYSIS

Reference CASA parameters, images and reference values

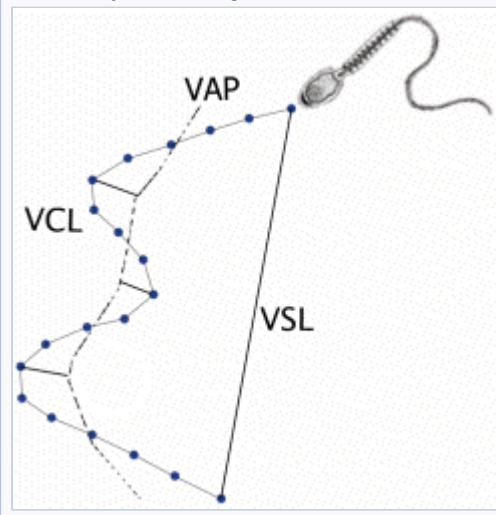
#### SEMEN ANALYSIS CHART IMAGES

Velocity and motion chart images captured from the reference report.

##### Semen Analysis Chart Images



##### Semen Analysis Chart Images





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#### SPERM MORPHOLOGY REPORT

Normal morphology index and teratozoospermia summary.

| PARAMETER                        | RESULT | STATUS | REFERENCE VALUE         |
|----------------------------------|--------|--------|-------------------------|
| Normal Sperms (Morphology Index) | 68.75  | NORMAL | >=4% Normal is accepted |
| Terato Sperms                    | 31.25  |        |                         |

#### HEAD ABNORMALITY

Detailed head-shape abnormality distribution.

| PARAMETER      | RESULT |
|----------------|--------|
| Big Head       | 3.12   |
| Pyriform Head  | 3.12   |
| Vacuolated     | 0      |
| Small Head     | 0      |
| Round Head     | 0      |
| Small Acrosome | 9.38   |
| Tapered Head   | 12.5   |
| Amorphous      | 0      |
| Double Head    | 0      |

#### NECK AND MIDPIECE ABNORMALITY

Neck and midpiece defect distribution.

| PARAMETER             | RESULT |
|-----------------------|--------|
| Thin Neck             | 0      |
| Thick Neck            | 0      |
| Bent Neck             | 0      |
| Asymmetric Connection | 0      |

#### TAIL ABNORMALITY

Tail defect distribution.

| PARAMETER      | RESULT |
|----------------|--------|
| Short Tail     | 0      |
| Multi-Tail     | 0      |
| Coiled Tail    | 6.25   |
| Bent Tail      | 0      |
| No Tail        | 0      |
| Irregular Tail | 0      |



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#### CYTOPLASMIC DROPLET

Cytoplasmic droplet finding.

| PARAMETER           | RESULT |
|---------------------|--------|
| Cytoplasmic Droplet | 0      |

#### MORPHOLOGY INDICES

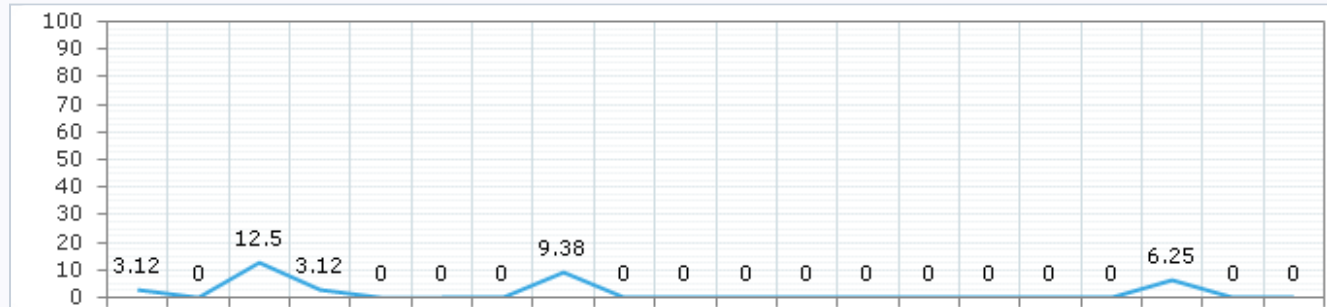
MAI, TZI and SDI index values with reference statements.

| INDEX                          | RESULT                                                            | REFERENCE VALUE    |
|--------------------------------|-------------------------------------------------------------------|--------------------|
| MAI                            | 1.1                                                               |                    |
| Multiple Anomalies Index (MAI) | The mean number of anomalies per abnormal spermatozoon.           |                    |
| TZI                            | 1                                                                 | N. Range up to 1.6 |
| Teratozoospermic Index (TZI)   | Total number of defects divided by the number of abnormal sperms. |                    |
| SDI                            | 0.34                                                              | N. Range up to 1.6 |
| Sperm Deformity Index (SDI)    | Total number of defects divided by the number of sperms tested.   |                    |

#### MORPHOLOGY DEFECT CHART

Morphology defect distribution chart.

Morphology Defect Chart





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#### MORPHOLOGY IMAGES

Morphometry measurements for representative normal and abnormal sperm images.

##### Normal Sperm



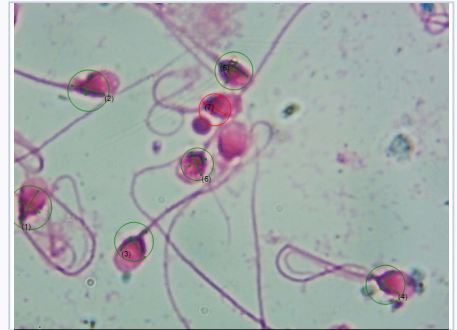
Normal Sperm - Sperm No. (1) - Length:4.72 um | Width:2.98 um |  
Acrosome:44.99 % | Area:12.1 um<sup>2</sup> | Perimeter:11.7 um | Ellipticity:1.58 |  
Elongation:0.22 | Roughness:1.06 | Regularity:0.87

##### Abnormal Sperm



Abnormal Sperm - Sperm No. (1) - Length:8.02 um | Width:2.11 um |  
Acrosome:55.83 % | Area:15.92 um<sup>2</sup> | Perimeter:16.52 um | Ellipticity:3.8 |  
Elongation:0.58 | Roughness:0.7 | Regularity:0.8

##### Abnormal Sperm



Abnormal Sperm - Sperm No. (1) - Length:7.08 um | Width:2.5 um |  
Acrosome:57.33 % | Area:15.06 um<sup>2</sup> | Perimeter:15.21 um | Ellipticity:2.83 |  
Elongation:0.48 | Roughness:0.78 | Regularity:0.88

#### REF. VALUES

Reference values supplied with the CASA report.

| PARAMETER   | RESULT                                                                                                                         |
|-------------|--------------------------------------------------------------------------------------------------------------------------------|
| Ref. Values | Length : (4-5.5)um   Width : (2.5-3.5)um   Acrosome : (40-70)%   Area : (7.85-15.1)um <sup>2</sup>   Perimeter : (10.8-14.9)um |

Results relate only to the tested samples. Clinical interpretation must be correlated with patient history and physician assessment.

\*\*\*\*End of Report\*\*\*\*

**Medical Lab Technician**

DMLT, BMLT

**Clinical Pathologist**

MD, Pathology

**Authorized Laboratory  
Signature**

MD, Pathology