Overview

Useful For
- Diagnosing male infertility
- Selecting the most cost-effective therapy for treating male-factor infertility
- Quantifying the number of germinal and WBCs per mL of semen

Method Name
KrugerCriteriaStrictMorphology

NY State Available
No

Specimen

Specimen Type
Semen

Specimen Required
Semen specimen must arrive within 24 hours of collection. Send specimen Monday through Thursday only and not the day before a holiday. If holiday falls on a Saturday, holiday will be observed on the preceding Friday. Sunday holidays are observed on the following Monday. Specimen should be collected and packaged as close to shipping time as possible. Laboratory does not perform testing on weekends.

Container/Tube: Semen Analysis Kit (T178)

Collection Instructions: Patient should have 2 to 7 days of sexual abstinence at the time of semen collection for accurate results.

Specimen Volume: Total ejaculate

Additional Information: Specimen volume is required.

Specimen Minimum Volume
A minimum count is needed. Lab will determine.

Reject Due To
No specimen should be rejected.

Specimen Stability Information

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
<th>Special Container</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semen</td>
<td>Ambient</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Clinical and Interpretive

Clinical Information

Infertility affects 1 out of 6 couples of child-bearing age. Approximately 40% of infertility has a female-factor cause and 40% a male-factor cause. The remaining 20% of infertility is due to a combination of male- and female-factor disorders or is unexplained.

Abnormalities in sperm morphology are related to: defects in sperm transport, sperm capacitation, the acrosome reaction, binding/penetration of the zona pellucida, and fusion with the oocyte vitelline membrane. All of these steps are essential to normal fertility.

Strict criteria sperm morphology testing also greatly assists with selecting the most cost-effective in vitro sperm processing and insemination treatment for the couple's IVF cycle. Sperm with severe head abnormalities are unlikely to bind to the zona pellucida. These patients may require intracytoplasmic sperm injection in association with their IVF cycle to ensure optimal levels of fertilization are achieved. This, in turn, provides the patient with the best chance of pregnancy.

Multiple semen analyses are usually conducted over the course of the spermatogenic cycle (approximately 70 days).

Reference Values

Normal forms

> or =4.0%

Germinal cells/mL

<4 x 10^6 (normal)

> or =4 x 10^6 (Elevated germinal cells in semen are of unknown clinical significance)

WBC/mL

<1 x 10^6 (normal)

> or =1 x 10^6 (Elevated white blood cells in semen are of questionable clinical significance)

Interpretation

Categorizing sperm according to strict criteria based on measurements of head and tail sizes and shapes. Sperm with abnormalities in head/tail size/shape may not be capable of completing critical steps in sperm transport and fertilization.

Cautions

Conventional semen analysis (FER / Semen Analysis) should be performed in conjunction with each strict criteria sperm morphology.

Clinical Reference

1. Kruger Morphology Conference, Boston, MA, October 9, 1993

Strict Criteria Sperm Morphology

Performance

Method Description
Sperm is categorized according to strict criteria based on measurements of head and tail sizes and shapes. Sperm with abnormalities in head/tail size/shape are not capable of completing steps in the sperm transport and fertilization process. Quantification of the germinal and white blood cell (WBC) content in semen is performed because the presence of germinal and WBCs are indicative of possible disorders in spermatogenesis and genital tract infection, respectively. (Wazzan W, Thomas A: Genital infection and male infertility. AFS Annual Meeting, Postgraduate course, 1990; Menkveld R, Oettle E, Kruger T, et al: Atlas of human sperm morphology. Williams and Wilkins, Baltimore, MD, 1991; Scoring is based on a modified method of The World Health Organization Laboratory Manual for the examination of human semen and sperm-cervical mucus interaction. Fifth Edition. Cambridge University Press, 2010)

PDF Report
No

Day(s) and Time(s) Test Performed
Monday through Friday; 6:30 a.m. to 3:30 p.m.
Send specimen Monday through Thursday only and not the day before a holiday.

Analytic Time
2 days

Maximum Laboratory Time
4 days

Specimen Retention Time
Slides are stored for at least 6 months

Performing Laboratory Location
Rochester

Fees and Codes

Fees
- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their Regional Manager. For assistance, contact Customer Service.

Test Classification
This test was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. This test has not been cleared or approved by the U.S. Food and Drug Administration.

CPT Code Information
89398

LOINC® Information
### Test Definition: MSTC

**Strict Criteria Sperm Morphology**

<table>
<thead>
<tr>
<th>Test ID</th>
<th>Test Order Name</th>
<th>Order LOINC Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSTC</td>
<td>Strict Criteria Sperm Morphology</td>
<td>48812-2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Result ID</th>
<th>Test Result Name</th>
<th>Result LOINC Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>OVAL2</td>
<td>Strict Morph NL</td>
<td>10622-9</td>
</tr>
<tr>
<td>ACRSM</td>
<td>Acrosom Defect</td>
<td>66494-6</td>
</tr>
<tr>
<td>HDSAB</td>
<td>Head Shape Abnormal</td>
<td>66495-3</td>
</tr>
<tr>
<td>HDZAB</td>
<td>Head Size Abnormal</td>
<td>66496-1</td>
</tr>
<tr>
<td>MD</td>
<td>Midpiece Defect</td>
<td>10603-9</td>
</tr>
<tr>
<td>TAILD</td>
<td>Tail Defect</td>
<td>10604-7</td>
</tr>
<tr>
<td>DBLF</td>
<td>Double Forms</td>
<td>66497-9</td>
</tr>
<tr>
<td>MULTI</td>
<td>Multiple Defects</td>
<td>66498-7</td>
</tr>
<tr>
<td>GERM3</td>
<td>Germ Cells/mL</td>
<td>10576-7</td>
</tr>
<tr>
<td>WBC6</td>
<td>WBC/mL</td>
<td>10579-1</td>
</tr>
<tr>
<td>CMT56</td>
<td>Comment</td>
<td>48767-8</td>
</tr>
</tbody>
</table>