MAYO CLINIC LABORATORIES

Test Definition: MSTC

Strict Criteria Sperm Morphology for Infertility Diagnosis and Treatment, Semen

Overview

Useful For

Diagnosing male infertility

Selecting the most cost-effective therapy for treating male-factor infertility

Quantifying the number of germinal and white blood cells per mL of semen

Method Name

Kruger Criteria Strict Morphology

NY State Available

No

Specimen

Specimen Type

Semen

Additional Testing Requirements

Conventional semen analysis, FER / Semen Analysis, Semen. should be performed in conjunction with this test.

Shipping Instructions

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**.

Necessary Information

Specimen volume is required.

Specimen Required

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

Specimen Minimum Volume

A minimum count is needed. Lab will determine.

Reject Due To

All specimens will be evaluated at Mayo Clinic Laboratories for test suitability.

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Semen	Ambient		

Clinical & 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 in vitro fertilization (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.

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.

Clinical Reference

1. Kruger Morphology Conference, Boston, MA, October 9, 1993
2. Cooper TG, Aitken J, Auger J, et al, eds. WHO laboratory manual for the examination and processing of human semen. 5th ed. WHO Press; 2010
3. Bjorndahl L, Apolikhin O, Baldi E, et al, eds: WHO laboratory manual for the examination and processing of human

semen. 6th ed. World Health Organization; 2021

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 WHO laboratory manual for the examination of human semen and sperm-cervical mucus interaction. 5th ed. Cambridge University Press; 2010)

PDF Report
No

Day(s) Performed
Monday through Friday

Report Available
2 to 4 days

Specimen Retention Time
Slides: at least 6 months

Performing Laboratory Location
Mayo Clinic Laboratories - Rochester Main Campus

Fees & 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 account representative. For assistance, contact Customer Service.

Test Classification
This test has been cleared, approved, or is exempt by the US Food and Drug Administration and is used per manufacturer's instructions. Performance characteristics were verified by Mayo Clinic in a manner consistent with CLIA requirements.

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CPT Code Information

89398

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
MSTC	Strict Criteria Sperm Morphology	48812-2

Result ID	Test Result Name	Result LOINC® Value
OVAL2	Strict Morph NL	10622-9
ACRSM	Acrosome Defect	In Process
HDSAB	Head Shape Abnormal	In Process
HDZAB	Head Size Abnormal	In Process
MD	Midpiece Defect	10603-9
TAILD	Tail Defect	10604-7
DBLF	Double Forms	In Process
MULTI	Multiple Defects	In Process
GERM3	Germ Cells/mL	10576-7
WBC6	WBC/mL	10579-1
CMT56	Comment	48767-8