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CLIA#: 22D0884531

ReproSource
Illuminating Pathways to Reproductive Health™

Comprehensive Semen Analysis 2.5

Patient:	Example, Patient	Physician:	Clinician Example
Gender: M Age: 46Y Date of Birth:	06/14/1973	Phone:	413-555-5555 Fax: 413-555-5556
Specimen:	T0001545	Address:	Example Clinic
Reported:	11/13/2019		123 Example St
Received:	11/12/2019 Time: 09:00		Example City, EX 55555
Collected:	11/11/2019 Time: 09:00 Approx		

Collection Device: Cup
Collection Difficulty: None

Abstinence Period: 3 Days

Transport Method: @HOME™ COLLECTION KIT

Selected Results Overview

Question	Testing Category	Result Type			Result Highlights
		In Range	Borderline	Out of Range	
How many sperm do I have?	COUNT	✓			11.00 million sperm per ml 12.00 million total motile sperm
Do my sperm move well?	MOTILITY	✓			72% total motility (62% progressive)
Are my sperm shaped normally?	MORPHOLOGY	✓			5% normal forms
Is there evidence of inflammation in my semen?	INFLAMMATION			✓	8.7 million/ml white blood cells

Additional comments:

none

Sperm Terms

normozoospermia	semen with sperm of normal concentration, motility, and shape (morphology)
oligozoospermia	low sperm concentration or total number of sperm
azoospermia	no sperm in semen
asthenozoospermia	low percentage of sperm which move in a forward direction
teratozoospermia	low percentage of sperm with normal shape (morphology)
oligoasthenoteratozoospermia	abnormal concentration, motility, and shape (morphology)
leukospermia (pyospermia)	semen with high levels of inflammatory cells
haemospermia (haematospermia)	presence of red blood cells (erythrocytes) in semen

References

1. World Health Organization. *WHO Laboratory Manual for the Examination and Processing of Human Semen*, 5th ed. Geneva: World Health Organization, **2010.**
2. World Health Organization. *WHO Laboratory Manual for the Examination of Human Semen and Sperm-Cervical Mucus Interaction*, 4th ed. Cambridge: Cambridge University 430 Press, **1999.**
3. Jeyendran RS. Interpretation of Semen Analysis Results: A practical guide. Cambridge, UK: Cambridge University Press; **2000**.
4. Bjorndahl L, Mortimer D. *A Practical Guide to Basic Laboratory Andrology*. Cambridge, UK: Cambridge University Press; **2010**.
5. Lipshultz LI, Howards SS, Niederberger CS, eds. *Infertility in the Male*. 4th Ed. Cambridge, UK: Cambridge University Press; **2009**.

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Results

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Results

Semen Characteristics

Liquefaction and viscosity are measures of how fluid the semen is, and are affected by correct specimen transportation, time and temperature. The appearance and/or color of semen can be affected by abnormal processes (eg blood can produce a red/brown color). Semen pH generally reflects the balance of secretions from accessory glands. *Semen analysis performed after 1 hour does not detect delayed liquefaction, and pH may be more alkaline.

Testing Category	Test	Units	Range	In Range	Borderline	Out of Range	Note
	Transport: Integrity	qualitative	accept	accept			
	Semen: Volume	ml	≥ 1.5	1.50			
	Liquefaction	qualitative	complete	complete*			
	Viscosity	qualitative	normal	normal			
	pH	units	≥ 7.2	7.5 *			
	Appearance	color	white/gray	White/Grey			
	Other	qualitative	none	none			

Sperm Analysis

COUNT, MOTILITY, MORPHOLOGY, AGGLUTINATION: Guidance on normal ranges for these measurements have evolved over time. This report generally follows the 5th and most recent edition of the World Health Organization (WHO) manual (2010). Due to the complex and subjective nature of this testing, consensus among laboratories remains challenging. Sperm attaching to other sperm (agglutination) can reduce the accuracy of results which may be due to anti-sperm antibodies.

SPERM HEALTH: Sperm may appear normal and yet be unhealthy which can be assessed in different ways. Viability (vitality) testing assesses the percentage of sperm with intact membranes.

Testing Category	Test	Units	Range	In Range	Borderline	Out of Range	Note
	Count: Concentration	million/ml	≥ 20			11.0	oligospermia
	Total/ejaculate	million	≥ 40			16.5	low
	Total Motile/ejaculate	million	N/A	12.0			
	Motility: Total (PR+NP)	%	≥ 40	72			
	Rate of Progression	units	3 - 4	3			good
	Progressive (PR)	%	≥ 32	62			
	Non-progressive (NP)	%	N/A	10			
	Immotile (IM)	%	≤ 60	28			
	Morphology: Kruger Strict	% normal	≥ 4	5			
	Agglutination: Grade	units	1 - 2	1			
	Attachment Type	qualitative	N/A	A			A=head to head
	Sperm Health: Viability	%	≥ 58	70			

Cells & Inflammation

Other cells are found in semen such as epithelial cells from the genitourinary tract and "round" cells. Round cells which express the protein CD45 are white blood cells (WBCs) involved in inflammation.

Testing Category	Test	Units	Range	In Range	Borderline	Out of Range	Note
	Other Cells: Round	million/ml	< 5.0			9.50	high
	Epithelial	million/ml	N/A	1.2			
	Clumping	%	N/A	15			
	Inflammation: WBCs	million/ml	< 1.0			8.70	high

Comments:
none

The performance characteristics of the above testing were verified and are monitored by ReproSource. Some of testing contains the use of certain materials labeled "RUO. For Research Use Only." This testing has not been cleared or approved by the US Food and Drug Administration. The FDA does not require this testing to go through premarket FDA review. This testing is used for clinical purposes. It should not be regarded as investigational or for research. ReproSource is certified under the Clinical Laboratory Improvement Amendments of 1988 (CLIA) as qualified to perform high complexity laboratory testing.

References (continued)

6. Köhn FM et al. *Human Reproduction* **1997**; Apr (12:4) 714-21.
7. Perticarari S et al. *Human Reproduction* **2007**; (22:2): 485–494
8. Chen Z et al. *Journal of Andrology* **2006**; Jan/Feb (27:10).
9. González-Amaro R et al. *Trends in Molecular Medicine* **2013**; Oct;19(10):625-32