

# Andrology

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**MEDICAL DIRECTOR:** JORGE FERRIERO, MD  
**LABORATORY DIRECTOR:** DOUGLAS CARRELL, PhD

The Andrology Laboratories provide diagnostic and laboratory assisted treatments for infertile couples. Four laboratory locations are available for sample collection. Below is a listing of these locations and the testing performed at each site.

SITE	TESTS PERFORMED
<b>Abbott Northwestern Hospital</b>	All tests as listed on the Andrology order form.
<b>Mercy Hospital</b>	Semen Analysis, Post Vasectomy Analysis
<b>United Hospital</b>	Semen Analysis, Post Vasectomy Analysis
<b>Unity Hospital</b>	Semen Analysis, Post Vasectomy Analysis.

## TESTING LOCATIONS, HOURS, AND TEST MENUS

ABBOTT NORTHWESTERN HOSPITAL		
LOCATION	HOURS	SAMPLE COLLECTION SCHEDULE
2828 Chicago Ave. S Suite 450 Minneapolis, MN 55407 <b>PHONE:</b> 612-863-4115 <b>FAX:</b> 612-863-4146  <b>CONTACT:</b> Cindy Thorp  <i>Free parking south of the building.</i>	<u>Monday-Friday:</u> 7:30 a.m. - 4:30 p.m. (last appointment taken at 3:15 p.m.)  <u>Saturday, Sunday, and Holidays:</u> 7:30 -10:30 a.m. (by appointment only)  Laboratory closed Thanksgiving Day, Christmas Day, New Years Day and Easter Sunday.	<ol style="list-style-type: none"> <li>The patient can call the laboratory at 612-863-4115 to schedule an appointment or obtain additional information.</li> <li>A physician test request form must accompany the sample.</li> <li>Samples for all tests (diagnostic and artificial insemination) are accepted from 7:30 a.m. - 3:15 p.m. Monday - Friday.</li> <li>Artificial insemination preparation samples are the only samples accepted on Saturday, Sunday and Holidays from 7:30 - 9:15 a.m.            **Diagnostic testing may be accepted with arrangements made in advance by contacting the laboratory</li> </ol>

<b>MERCY HOSPITAL</b>		
<b>LOCATION</b>	<b>HOURS</b>	<b>SAMPLE COLLECTION SCHEDULE</b>
4050 Coon Rapids Blvd Coon Rapids, MN 55433 <b>PHONE:</b> 612-863-4115 <b>FAX:</b> 612-863-4146  <b>CONTACT:</b> Cindy Thorp	<u>Monday, Wednesday</u>  7:00 -10:00 a.m.  <u>Tuesday, Thursday,</u> <u>Friday, Saturday,</u> <u>Sunday, Holidays:</u> Closed	<ol style="list-style-type: none"> <li>1. The patient can call the laboratory at 612-863-4115 to schedule an appointment or obtain additional information</li> <li>2. A physician test request form must accompany the sample.</li> <li>3. Samples for semen analysis and post vasectomy analysis are accepted from 7:00 - 10:00 a.m. Monday and Wednesday.</li> <li>4. <i>No samples are accepted on Tuesday, Thursday, Friday, Saturday, Sunday or Holidays.</i></li> </ol>

<b>UNITED HOSPITAL</b>		
<b>LOCATION</b>	<b>HOURS</b>	<b>SAMPLE COLLECTION SCHEDULE</b>
333 North Smith Avenue St. Paul, MN 55102 <b>PHONE:</b> 612-863-4115 <b>FAX:</b> 612-863-4146  <b>CONTACT:</b> Linhsa Le	<u>Friday:</u> 7:00 - 11:00 a.m.	<ol style="list-style-type: none"> <li>1. Patients can contact the laboratory at 612-863-4115 to schedule an appointment or obtain additional information.</li> <li>2. A physician test request form must accompany the sample.</li> <li>3. Samples for semen analysis and post vasectomy analysis are accepted from 7:00 - 11:00 a.m. Friday.</li> <li>4. <i>No samples are accepted on Monday, Tuesday, Wednesday, Thursday, Saturday, Sunday or Holidays.</i></li> </ol>

UNITY HOSPITAL		
LOCATION	HOURS	SAMPLE COLLECTION SCHEDULE
550 Osborne Road NE Fridley, MN 55432 <b>PHONE:</b> 612-863-4115 <b>FAX:</b> 612-863-4146  <b>CONTACT:</b> Cindy Thorp	<u>Tuesday, Thursday,</u> <u>Friday:</u> 7:00 -10:00 a.m.  <u>Monday,</u> <u>Wednesday,</u> <u>Saturday, Sunday,</u> <u>Holidays:</u> Closed	<ol style="list-style-type: none"> <li>1. Patients can contact the laboratory at 612-863-4115 to schedule an appointment or obtain additional information.</li> <li>2. A physician test request form must accompany the sample.</li> <li>3. Samples for semen analysis and post vasectomy analysis are accepted from 7:00 - 10:00 a.m. Tuesday, Thursday and Friday.</li> <li>4. <i>No samples are accepted on Monday, Wednesday, Saturday, Sunday or Holidays.</i></li> </ol>

## DIAGNOSTIC TESTING

Diagnostic testing includes semen analysis, sperm penetration assay testing (SPA), testing for the presence of anti-sperm antibodies, testing for reproductive hormones, post vasectomy checks, semen cultures, and biochemical tests.

Generally, the semen analysis is the “starting point” in the evaluation of male infertility and may indicate the possible cause of decreased fertility. The sperm penetration assay is particularly helpful in evaluating possible treatment options.

## SEMEN ANALYSIS

The most efficient and economical method of evaluating male fertility is the semen analysis because it costs less than female infertility tests and is recommended as the first step in attempting to obtain information that could lead to an accurate diagnosis. For regulatory purposes there must be a written physician’s order before obtaining a semen analysis in our laboratory.

To obtain accurate test results it will be necessary to abstain from sexual activity for two to five days before the appointment because shorter or longer periods of abstinence may adversely affect sperm quality.

The semen evaluation includes concentration, progressively motile sperm concentration, sperm morphology (shape), membrane viability, and membrane function assessment. Decreases in sperm concentration and sperm motility affect the motile sperm count, which reflects the ability to get a high enough concentration of sperm to the egg site to complete fertilization. Sperm morphology is important because it reflects the ability of the sperm to fertilize an egg. A normal semen sample may consist of 55 percent normal, correctly shaped sperm and the remaining 45 percent may be abnormally shaped or abnormal sperm. A smaller percentage of normal sperm could result in reduced fertility. The sperm viability and hypo-osmolarity tests examine the integrity and function of the sperm’s plasma membrane, which may indicate fertilization potential.

In addition, the semen is evaluated for volume, viscosity, and agglutination which may be indicative of antisperm antibodies. When amorphous cells are present, we perform a stain for neutrophils. While it is normal for the seminal fluid to have a small number of white blood cells, an increased presence of these cells may indicate an infection or prostatitis (inflammation of the prostate). If the white blood cell count necessitates a semen culture, a diagnosis and treatment for the problem may be found.

If no sperm are found in the seminal fluid, an evaluation of seminal fructose will be performed. A lack of fructose may indicate a blockage of the vas deferens, which secretes fructose and carries the sperm from the epididymis to the prostate gland.

### **POST VASECTOMY ANALYSIS**

This test serves as an indicator of the status of an individual's vas deferens patency following a vasectomy. The sample is evaluated for the presence or absence of spermatozoa. If non-motile sperm are present, it may indicate that additional ejaculations are required to fully clear the reproductive tract of sperm. At least 4-5 weeks should elapse after the vasectomy is performed before testing. Several post vasectomy analyses may be needed. The number of samples collected following a vasectomy is under the physician's direction.

### **SPERM PENETRATION ASSAY**

The use of the sperm penetration assay (SPA) as a measure of fertility is based on the theory that fertile sperm samples will penetrate most hamster ova and thereby approximate penetration in vivo. Removal of the zona pellucida on hamster oocytes will allow penetration by human sperm in vitro. For penetration to occur, the sperm must be able to undergo capacitation, the acrosome reaction, oolemma fusion, and incorporation into the ooplasm. Poor sperm motility, low sperm count and abnormal head morphology may affect sperm penetration capacity. Infertile sperm samples are expected to penetrate a lower percentage of ova.

*The sperm penetration assay is the most accurate test to predict the ability of sperm to fertilize an egg. It also aids in determining if laboratory techniques might improve the sperm's ability to fertilize.*

**SEMEN ANALYSIS, POST VASECTOMY ANALYSIS and  
SPERM PENETRATION ASSAY****SPECIMEN COLLECTION INSTRUCTIONS**

**Test Code: Semen Analysis – SA  
Post Vasectomy - PVA  
Sperm Penetration Assay - SPA**

**CPT Semen Analysis: 89320**

**CPT Post Vasectomy: 89310**

**Sperm Penetration Assay: 89329**

These instructions describe the proper collection of all semen samples. Semen samples for antisperm antibody testing may be collected in your office and frozen following the instructions given in the MALE ANTISPERM ANTIBODY TESTING section below.

1. Please have your patient(s) contact the laboratory site they wish to utilize to schedule an appointment and/or obtain instructions. Private, on-site collection rooms are available at the Abbott Northwestern Hospital location only.
2. Patients must have a test request form from their physician at the time of the visit to the laboratory stating the name and location of the referring physician, patient's name and social security number (or date of birth), the test(s) to be performed, and diagnosis.
3. The patient should abstain from any sexual activity for **2 to 5** days prior to collection of the semen sample. Ideally, it should be more than 2 days from a previous ejaculation and not more than 7 to 10 days.
4. Patients must bring their insurance card if we are to bill insurance.

**Collection of the Semen Specimen at Home:**

1. A semen sample should be collected only after you have washed your hands and penis with soap and water, being sure to rinse away all of the soap residue. Dry thoroughly before collecting the sample.
2. The sample should be collected by masturbation directly into a sterile, clean and dry container. Use one of our sterile containers since we know that they are not toxic to spermatozoa. If bringing the sample from home, you can pick up one of our containers by stopping at our laboratory.
  - A. Lubricants should not be used to aid in the collection of the sperm as they may be toxic to sperm.
  - B. Condoms should not be used for semen collection because they contain agents that kill sperm. If you need to collect a sample with intercourse, you can purchase non-toxic condoms from our laboratory and use these for sample collection. If you collect a sample in this type of condom, drop the whole condom into one of our sterile containers and bring this into the laboratory.

- C Interrupted intercourse should not be performed for specimen collection as this may result in the loss of the most critical portion of the ejaculate (first portion) and the specimen may be contaminated with cells or bacteria from the vagina.
  - D. If a pubic hair or thread of clothing accidentally falls into the container, do not attempt to remove it. The lab will remove it using sterile techniques.
  - E. If a portion of the sample was lost during collection, please indicate this to the individual that takes your sample.
3. Label the container with your full legal name, date of collection, time of collection, and either a social security number or date of birth. ***Please bring a photo ID with you to the laboratory if you are collecting for sperm cryopreservation or artificial insemination.***
  4. Wrap the container in a dry half towel and place it into a paper sack and bring the sack into the laboratory within one hour of collection. Avoid exposing the specimen to extremes of temperatures. The sample should be brought into the laboratory at your scheduled time.

#### **Collection of the Specimen at the Laboratory:**

1. The Laboratory Receptionist will provide the container and the instructions for collection.
2. ***Please bring a photo ID with you to the laboratory if you are collecting for sperm cryopreservation or artificial insemination.***

#### **ANTI-SPERM ANTIBODY TEST**

In males, barriers exist to “hide” sperm from the body’s immune system. This is to keep the body from identifying the sperm as foreign, classifying it as dangerous and producing a defense against it. When these barriers break down the body produces anti-sperm antibodies. If these antibodies attach themselves to sperm they cause severely diminished motility and/or agglutination. The presence of antibodies is evaluated by testing seminal fluid, semen, and serum. There should be an anti-sperm antibody evaluation performed prior to a vasectomy reversal, in cases where sperm motility is diminished, samples with an increase of agglutination, or if sperm viability is in question. Females may also produce anti-sperm antibodies. Females should be evaluated if the physician determines that is necessary.

#### **FEMALE ANTISPERM ANTIBODY TESTING (Serum)**

#### **ANDROLOGY ANTIBODY PANEL (FEMALE)**

**Test Code: ABF**

**CPT: 89325**

1. Patients may come to the Andrology laboratory during operating hours for a blood collection. A physician requisition is required at the time of the visit.
2. Blood may be obtained outside the laboratory as follows:
  - a. Draw 1 *serum separator* or *plain red* tube of blood.
  - b. Pour off serum into a small tube (minimum volume is 0.5 ml).
  - c. Freeze serum until it can be transported to the Andrology laboratory along with a test requisition. **\*\*Do not allow serum to thaw once it has been frozen.**

**MALE ANTISPERM ANTIBODY TESTING (Serum and Semen)****ANDROLOGY ANTIBODY PANEL (MALE)****Test Code: ABM****CPT: 89325**

1. Patients may schedule an appointment for this test during operating hours.
2. Samples may be collected outside the laboratory as follows:

**BLOOD**

- a. Draw 1 *serum separator* or *plain red* tube of blood.
- b. Pour off serum into a small tube (minimum volume is 0.5 ml).
- c. Freeze serum until it can be transported to the Andrology laboratory along with a test requisition. **\*\*Do not allow serum to thaw once it has been frozen.**

**SEMEN**

- a. Collect semen sample into a sterile plastic container following the collection instructions given in the SEMEN SAMPLE COLLECTION INSTRUCTIONS section above.
- b. Place semen sample in a small tube (minimum volume is 0.5 ml).
- c. Freeze semen until it can be transported to the Andrology laboratory along with a test requisition. **\*\*Do not allow semen to thaw once it has been frozen.**

**NOTE:** A frozen semen specimen will allow an indirect antisperm antibody test to be performed. A direct antibody test requires a fresh (non-frozen) semen sample as described in SEMEN SAMPLE COLLECTION INSTRUCTIONS section above. ***The patient must utilize Abbott Northwestern if a Direct Antibody test is requested.***

**TRANSPORTING FROZEN SAMPLES**

1. Please complete a test requisition with the patient's complete first and last name, diagnosis, social security number, name and location of physician ordering test, location, date and time of sample collection. For semen specimens, the collection container used (i.e. sterile urine container, non-spermicidal condom) and days of abstinence prior to collection must also be identified. Send this requisition along with the specimen(s).
2. Please indicate whether the clinic or the patient should be billed for the testing. If the patient is to be billed, please complete the entire upper portion of the laboratory order form including the address and insurance sections.
3. Samples can be sent to the Reference Laboratory at Abbott Northwestern Hospital. For assistance in obtaining courier transport, please call 612-863-4678.

**OBTAINING RESULTS FROM THE LABORATORY**

Results are sent along with a dictated report from the laboratory director or designee.  
Expected turn around times for results is as follows:

Sperm Penetration Assay	14 days
Antisperm Antibody Testing	14 days
All Other Testing	7 days

Preliminary results can be faxed to the physician if desired