

## **INFERTILITY WORK-UP:**

Infertility is a condition where a couple does not get pregnant after 1 year of trying to conceive. An infertility evaluation is usually initiated after 1 year of trying in a women age <35 and 6 months in women >35 or when there are symptoms that be associated with infertility such as irregular periods.

Fortunately, 85% of couples get pregnant in the first year of trying to conceive and 93-95% get pregnant in the first 2 years. Many couples may have multiple factors affecting fertility therefore a complete evaluation is recommended for all couples. The main causes are associated with ovulation problems, anatomical problems such as damaged tubes and abnormal sperm. Ovulation problems contribute up to 50% of the time, abnormal sperm up to 50% of the time, about 10% of the time infertility is unexplained. The following tests are often considered in the evaluation of infertility. Not all of these tests are done on all couples.

### **LAB WORK**

- **TSH** – evaluates your thyroid, abnormalities in the level of your thyroid hormone can affect ovulation.
- **Prolactin** – hormone that increases when you produce milk while nursing. Elevations of this hormone may affect ovulation even if the levels are not high enough to cause milk production.
- **Day 21 progesterone** – a progesterone level is drawn around day 21 of your cycle to evaluate the presence or absence of ovulation. (Day 1 of your cycle=first day of your period.)
- **Ovulation predictor kits:** detect LH surge before ovulation
- **Polycystic ovarian syndrome (PCOS)** – PCOS is a combination of irregular periods and too much testosterone such as facial hair or acne (or elevated on a blood test) and can be related to diabetes or pre-diabetes. Lab work includes:
  - Diabetes/pre-diabetes: **A1C, fasting blood sugar, fasting insulin, Hgb A1C or 2 hour diabetes screen**
  - **testosterone**
- **Ovarian reserve.**
  - **Day 3 FSH (with estradiol)** – FSH is drawn on day 2 or 3 of your cycle, if FSH is > 10 and estradiol <80 then your ovarian reserve is low, means that medications to increase your chance of pregnancy have a lower chance of being successful. BUT this does not mean you cannot get pregnant. This is usually drawn on women >35 or women who are younger and aren't pregnant after 2 years of trying, smokers age >30, previous ovarian surgery or family history of early menopause.
  - **AMH (antimullerian hormone)** – drawn anytime during your cycle, decreased ovarian reserve <0.8
  - Follicle count by ultrasound on day 3 of your cycle.
- Additional nutrients that may be beneficial: **vitamin D, iron**
- Evaluate for Celiac if symptoms.

### □ **PELVIC ULTRASOUND:**

An ultrasound evaluates ovaries, uterine muscle and the lining of your uterus, tubes typically aren't seen unless they are abnormal.

### **EVALUATION TUBES AND CAVITY OF THE UTERUS:**

There are several tests that evaluate the cavity of the uterus and the Fallopian tubes. Tests: FEMVUE and HSG. The uterine cavity and tubes can also be evaluated with surgery: laparoscopy and hysteroscopy. We will discuss which test is best for you.

The FEMVUE and HSG tests are performed on cycle days 7-11 in a 28 day cycle. The testing is done after you stop bleeding from your period and before you ovulate. *In order to correctly schedule your test, call us at the beginning of your period.*

No diet limitations before either procedure. Mild to moderate cramping may occur with either test, so I recommend 600 mg of ibuprofen 30 minutes before the HSG, if you have a FEMVUE, you will be given an injection of toradol before the procedure. You may resume normal activities immediately after these tests.

- **FEMVUE:** The test is performed in our office with ultrasound. A thin tube is passed into the cervix, saline with air bubbles is gently pushed into the uterus. The ultrasound is used to look at the cavity of the uterus and bubbles in the saline are seen going out through the tubes if the tubes are open. This test takes about 10 minutes.

Since this test is performed in the office by your doctor, you will get the results immediately.

- **HYSTEROSALPINGOGRAM (HSG)** The procedure is performed by passing a thin tube into the cervix and then injecting dye into the uterus. You will lie on an exam table, a speculum is used. As the dye enters the uterus and fallopian tubes, x-rays of your pelvis will be taken by the radiologist. The test usually takes about 10-20 minutes. This test uses iodine dye so you cannot have this test if you are allergic to iodine or shellfish.

In women with a history of gonorrhea or chlamydia or PID, HSG may be associated with a higher rate of infection so we may recommend that you take an antibiotic starting the day of the HSG because of the small risk of infection. If antibiotics are recommended, you will get a prescription for doxycycline 100 mg 2x/day for 3 days, take first dose before the procedure.

It takes 2-3 days to get the results of the HSG, we will call you with the results. If you do not hear from us within 2-3 days after having the test please call.

### □ **SEMEN ANALYSIS (SA):**

When a couple is unable to conceive, up to 50% of the time it is associated with a male factor. We only use one lab in town since most labs are not trained to look at SA for infertility. We will give you the appropriate paperwork and instructions. Avoid intercourse for 2-4 days before collecting the specimen. Collection needs to occur by masturbation and not involve intercourse.

After ALL the test results are available, we will meet to create a plan.

## What can you do to improve your infertility?

Often a couple's general health and lifestyle may contribute to infertility. Consider making the following changes to improve overall health, and the "side effect" is improved fertility AND reduced miscarriages AND reduce complications in pregnancy such as high blood pressure, diabetes and csections.

### ● Optimal fertility window:

- The highest chance of conception occurs when intercourse occurs 1-2 days before ovulation and the day of ovulation.
- The highest pregnancy rates occur in couples who have intercourse every 1-2 days, but regular intercourse 2-3x/wk beginning right after menses increases the likelihood that intercourse falls within the fertile period and semen quality is optimal.
- Optimal semen quality, measured in terms of motility, morphology, and total sperm count, occurs when there are 2-3 days of no ejaculation; longer intervals are associated with lower pregnancy rates.
- Detecting ovulation: ovulation predictor kits, cervical mucus change, pain with ovulation. I rarely recommend BBT charts because they are hard to do and your temperature goes up AFTER you ovulate.
- Lubricants: many lubricants inhibit sperm, consider using PreSeed of Sustain lubricant if needed

- **Weight loss:** Having a BMI > 27 increases infertility and miscarriage. Calculate BMI go to <http://www.nhlbisupport.com/bmi/>

#### BMI Categories:

- Underweight = <18.5
- Normal weight = 18.5-24.9
- Overweight = 25-29.9
- Obesity = BMI of 30 or greater

If you have a BMI >27, studies show that a 10% weight loss significantly improves fertility and reduces risk of miscarriage, ex 10% weight loss for a woman who weighs 230lb is 23lb. Even medications that induce ovulation work better when there is a 10% weight loss. Childhood obesity is a risk factor for infertility, EVEN IF you have a normal BMI as an adult. Additional benefits of weight loss include: fewer complications during pregnancy such as diabetes and high blood pressure.

Being underweight can decrease fertility as well. If your BMI < 19, recommend 5-10 lb weight gain.

### ● Best nutrition for optimal fertility:

- Best diet is a Mediterranean style diet that is plant based, avoid simple carbs and processed foods, increase quality protein and healthy fats
- Eat 5-10 servings of veggies and fruit daily
- Protein - high intake of vegetable protein such as legumes, lean meat (chicken and fish), eggs, goal ~80 gm/d, reducing intake of animal protein and increasing plant based protein may improve fertility
- Low glycemic carbs (<http://www.glycemicindex.com/>) because high glycemic foods (cold breakfast cereals, white rice and potatoes) were associated with a greater risk of infertility while low glycemic foods (brown rice, pasta and dark bread) were associated with a reduced risk; the association between cold breakfast cereal intake and ovulatory infertility is significant in some studies.
- Avoid very low carb diets because they are associated with increase in infertility

- Avoid processed foods such as fast food
- Avoid sugary drinks such as sodas AND avoid diet drinks and artificial sweeteners
- Avoid trans fat
- Careful with fish intake due to mercury in fish, avoid shark, swordfish, king mackerel, tilefish (most up to date information: FDA website) and avoid locally caught fish. Other fish to eat include salmon, shrimp, canned light tuna (not albacore) up to 2 meals/week (6 oz per meal)
- Avoid environmental toxins: endocrine disrupting chemicals - try to eat more organic especially meat and dairy, avoid foods wrapped in plastic or remove plastic ASAP, don't heat food in plastic, food storage - avoid plastic, avoid BPA (QUESTIONNAIRE for exposure)
- Reduce caffeine intake to <200 mg/day, 16 oz of Starbucks Pike Place coffee is 310 mg.
- Alcohol: < 4 drinks/week

### ● Vitamins/Supplements:

- Prenatal vitamin, start at least 3 months before pregnancy
- Vitamin D3 1000-2000/d
- Folic acid (methyl-folate may be better absorbed) 1 mg/d
- Fish oil with at least 300 mg of DHA/d
- Probiotics - especially if you have any GI issues, I rec Klaire Therbiotic Complete

### ● Exercise:

- Women who engage in moderate exercise for 30 minutes daily have a lower risk of ovulatory problems. Exercise goal: 150 minutes/week in at least 3 different sessions.
- Overexercise can decrease your fertility, studies show that the best goal is < 5 hours of vigorous exercise/week

### ● Other recommendations:

- Quit all tobacco products (affect sperm and ovulation), street drugs including marijuana, marijuana concentrates in the brain of your fetus
- Make sure you aren't taking any meds or supplements that cause problems in pregnancy or affect ovulation
- Some health issues increase risks of infertility or affect ovulation such as celiac disease, thyroid disorder, lupus diabetes, make sure they are well controlled before pregnancy
- Avoid anti-inflammatories such as ibuprofen because they negatively affect ovulation.
- Some women may benefit from acupuncture.
- Stress may affect fertility and dealing with infertility is often stressful for couples; contributing to anger, depression and strain on their relationship. Let us know if you are dealing with this so we can help.
- Circadian rhythm disruption - women who work nights or women who go to bed much later than 10pm and don't get 7-8 hours of sleep at night can impact ovulation

### ● Botanicals:

- Vitex - ovulation, elevated prolactin, consider 3-6 mo, dose 360 mg/d

### WEBSITES:

[www.resolve.org](http://www.resolve.org),  
[www.asrm.org](http://www.asrm.org),  
[www.fertilitylifelines.com/fertilityhealth/biology/female.jsp](http://www.fertilitylifelines.com/fertilityhealth/biology/female.jsp)  
[www.fertilityplus.org](http://www.fertilityplus.org)