

## Contemporary Infertility Overview

By Peter Horvath R.E., M.D.

Infertility is an extremely common problem, affecting roughly 1 in 6 couples. Often, couples who have conceived successfully in the past don't have a reason to reflect on the problem, because it has not impacted them personally. Yet, even if we haven't suffered infertility ourselves, it is probable that a close friend or relative is or has dealt with the struggle. Further, it is also possible that while infertility didn't strike the first time around, that difficulties might be around the corner during future attempts at pregnancy.

It is the purpose of this article to give a brief overview of fertility problems and therapies, to discuss an important and relatively poorly understood concept known as diminished ovarian reserve (DOR), and to offer some general tips for couples trying to conceive. Infertility is defined as inability to conceive after a year of trying. It is emotionally devastating for individuals and couples. Self-esteem is battered and feelings of inadequacy are common. Feelings of guilt and blame sometimes surface, and communication is often difficult because we are not generally equipped to verbalize the deep emotional issues involved.

Nevertheless, it is important to remember that infertility is a couple problem, not an individual one. Infertility causes us to be out of control of our lives and that is tremendously challenging. Our typical mindset is to expect that modern medicine will provide answers to our health problems if enough testing is done.

While it is not the purpose of this article to detail the area of fertility testing, suffice it to say that reproductive testing often gives "gray" answers and rarely gives us the control that we are seeking. Testing may give patients and practitioners clues about contributing factors, but not usually causative factors. Male and female factors may contribute to the problem, often in equal proportions. Male testing is limited in scope; the mainstay of testing is the semen analysis (SA). This tests for numbers, motility and shape of sperm. Unfortunately, most commercial laboratories do not provide an accurate test. Testing should be performed in specialized andrology laboratories. These are labs that work with fertility specialists known as reproductive endocrinologists (subspecialized OB-GYN physicians). SA testing should be amongst the first tests done in the workup, even if there has been

proven fertility in the past. Female testing is complex and time-consuming. The workup typically involves testing baseline hormonal levels, assessing ovulatory function, checking the fallopian tubes, and checking the pelvis for diseases such as endometriosis or pelvic adhesions. Since testing often doesn't give absolute reasons for infertility, and because many of the tests are not as accurate as we would like, treatment is often empiric. Generally, interventions can be broken down into three areas:

1. Ovulation enhancement using fertility medications. This is commonly combined with intrauterine insemination, which is a procedure whereby sperm are "washed", concentrated and hyperactivated, and then placed high in the uterine cavity on the day of ovulation.
2. Surgical evaluation and treatment of the pelvis by laparoscopy. This is a procedure which typically involves general anesthesia and consists of placing a telescope through the navel in order to visualize the pelvis, uterus and fallopian tubes.
3. Assisted reproduction such as in vitro fertilization. The exact type and order of testing and intervention is individually determined in a joint decision between practitioner and patient. If infertility was not a concern "the first time around", it is not uncommon to think that it won't be a problem for a subsequent child. This thinking is probably valid if the woman is still young—under 35—when she is trying to conceive again. The decade of the 30s is devastating to female fertility. Of couples attending a reproductive endocrinology practice, roughly 45% conceive successfully. If this is broken down by age, successes are close to 70% for women under 30 and only about 10% for women over 40! Furthermore, these statistics are true only for women with normal baseline hormonal testing.

The main test that is performed to assess "reproductive age" is a blood test for follicle stimulating hormone (FSH) levels. FSH is the hormone that drives the ovary to produce mature eggs. Normally the level should be low, and is consistently so in young women. Menopausal women have consistently extremely high levels of this hormone circulating in their blood. As a woman ages, the FSH level fluctuates more broadly month-by-month. A single normal assessment is reassuring, but does not predict that the level will be

normal even a few short months later. If the level is already rising to high-normal levels in a younger woman, this is a potentially ominous sign. Intervention should be rapid in these cases. A borderline high elevation of FSH can give a woman the diagnosis of diminished ovarian reserve (DOR). Fertility potential is already very diminished in these women, such that success rates with ovulation management may only be in the 5-7% range, and this is usually only in women under 40. Women over the age of 40 (who have success rates of about 10% with normal ovarian function) with DOR are rarely successful unless they utilized borrowed (donated) eggs.

As with the SA, commercial laboratories are often not helpful in assessing women for DOR, because they do not have normative data for this group of women (that is, they have cutoff values for “normal” and for menopause, but they do not have data on diminished fertility potential, or DOR). As such, this testing and interpretation should generally be done through a reproductive endocrinologist or practitioner who has outcome data for his/her practice. The take-home point is, if you are over the age of 34, it is useful to have an idea of where you stand as far as ovarian function is concerned. Normal or low FSH levels would be reassuring, and would support a more laissez-faire attitude; higher FSH levels would support early intervention—even if you have not been trying to conceive for the prescribed “year”.

Finally, I would like to provide some general fertility-related information that may be useful.

1. Non-steroidal anti-inflammatory medications such as ibuprofen are commonplace today. Aspirin is the parent compound of these drugs. While these medications are extremely useful in gynecology—especially for treating menstrual cramps, they should be avoided during midcycle, as they interfere with release of the egg from the ovarian follicle. Use acetaminophen for headaches or pains during the midcycle.
2. Cigarette smoking affects every body-system negatively. If we all stopped smoking, the “healthcare crisis” in America would be solved in one step. Cigarette smoking significantly diminishes both female and male fertility, but especially in the woman. Women who smoke are at significantly higher risk of developing DOR at a younger age. Quit now. Use nicotine substitutes or other adjuvant medications. Take a

smoking cessation class. Talk to your primary care provider. But make the decision, and do it today.

3. Recent studies suggest that alcohol and caffeine are also detrimental to fertility, even in modest amounts. As little as one alcoholic beverage per week diminished monthly chances of conception in healthy fertile women from about 24% to 17% per month. Higher consumption (1 per day) gave rates as low as 8%! Caffeine consumption equal to or less than one cup of tea per day was not detrimental, but higher amounts caused diminished fertility.
4. Vitamin supplementation is crucial. Reproductive aged women should all take a vitamin supplement containing calcium and iron. Women trying to conceive should take at least 400 mcg (0.4 mg) of folate (folic acid) per day.

Peter Horvath R.E., M.D.  
Director, Albany IVF, Infertility and Gynecology

[Return To TOC](#)