Counseling and Diagnostic Evaluation for the Infertile Couple

Paul B. Marshburn, MD

KEYWORDS

- Infertility counseling • Optimizing natural fertility • Ovarian reserve testing
- Ovulatory dysfunction • Obstructive and nonobstructive male factor infertility
- Genetic causes of male factor infertility

KEY POINTS

- Proper counseling about the natural means to improve fertility should include a discussion about appropriate timing to initiate a diagnostic evaluation for infertility.
- Diagnostic evaluation of the infertile couple is best outlined by discussing the steps necessary for conception.
- Both male and female infertility factors should be investigated simultaneously to optimize all abnormalities for the best pregnancy outcomes.
- Coordination between gynecologists, reproductive endocrinologists, male reproductive urologists, and genetic counselors can be critical for conducting comprehensive diagnostic testing and determine safe and effective treatment options.

INTRODUCTION

Infertility is defined as a lack of pregnancy after 12 months of unprotected sexual intercourse with the same partner. The National Survey of Family Growth (NSFG) conducted by the Centers for Disease Control and Prevention indicates that, in the United States, the proportion of women aged 15 to 44 years who had ever accessed infertility care increased from 9% to 15% between 1982 and 1995, and then stabilized at 12% through 2010.[1,2] The upward trend in the rate for seeking infertility care most likely involves the decline in natural fertility with female age, an increased incidence of sexually transmitted infections, higher exposure to environmental toxins, and lifestyle factors such as smoking and obesity.

An estimated 75% of infertile couples will achieve conception after evaluation and treatment for infertility.[3] The success of therapeutic interventions depends on proper counseling and diagnostic evaluation of the infertile couple.

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Department of Obstetrics and Gynecology, Carolinas Medical Center, Carolinas Healthcare System, P.O. Box 32861, Charlotte, NC 28232-2861, USA
E-mail address: Paul.Marshburn@carolinashelathcare.org

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COUNSELING THE INFERTILE COUPLE

Initial counseling of infertile couples can naturally enhance their chance for conception and will dispel myths about unproven practices. Approximately 85% of couples should expect to become pregnant within 12 months of unprotected intercourse. Although the chance for pregnancy will be highest in the first 3 months, approximately 80% of couples destined to become pregnant within 1 year will achieve this goal by 6 months.[4] Women who are 35 to 40 years of age will have approximately one-half the cycle fecundity of women between 20 and 30 years of age.[5,6] Thus, earlier infertility evaluation is warranted after 6 months of unsuccessful efforts to conceive in women aged 35 years and older.[7] An infertility diagnostic evaluation does not need to be delayed in the presence of obvious menstrual irregularity, persistent sexual dysfunction, history of pelvic inflammatory disease, previous cancer chemotherapy, or male factor issues, including prior use of anabolic steroids or genital surgery.

NATURAL MEANS FOR ENHANCING CONCEPTION

The optimal frequency of intercourse during the fertile window is every 3 days or less and may begin 5 days before ovulation.[8] The male partner does not need to have ejaculatory abstinence for greater than 2 days in the periovulatory period, and in fact abstinence for greater than 5 days may adversely affect sperm quality.[9] In men with low sperm densities, daily ejaculation can actually increase sperm count.[10]

No evidence shows that the use of methods to predict ovulation increases the chance for conception in couples able to have regular intercourse. Ovulation predictor methods may produce false-positive and false-negative readings.[11] Of all the methods for ovulation detection, peak cervical mucus production predicts the fertile window more accurately than basal body temperature graphing, urinary luteinizing hormone (LH) monitoring, and use of a menstrual calendar.[12] If these methods are improperly performed or applied, they could actually impair fertility by causing couples to miss the timing for their fertile window.

Coital method or positioning for intercourse also has no apparent effect on conception rates. Women may remain supine or elevate their hips after intercourse to prevent the loss of semen from the vagina, but these practices have no benefit. Sperm can be found in the fallopian tubes within 15 minutes after intercourse around the time of ovulation.[13] Personal lubricants such as mineral oil, canola oil, or hydroxyethylcellulose-based lubricants have no known detrimental effect on sperm viability, whereas water-based lubricants such as K-Y or Astroglide have been shown to inhibit sperm motility in vitro.[14]

LIFESTYLE CONSIDERATIONS

Obesity is associated with ovulatory dysfunction, insulin resistance, and lower pregnancy rates after in vitro fertilization (IVF). Weight reduction of 10% to 15% of total body weight can improve ovulation rates and reduce the incidence of comorbid associations, such as hypertension and adult-onset diabetes mellitus, which as both risk factors for pregnancy complications. Women should be adequately supplementing their diet with 400 mcg of folate.[15] No specific dietary supplement for men or women has been proven to enhance fertility, but research remains active in this area.

Tobacco smoking has a detrimental impact on fertility and increases the risk of miscarriage.[16,17] Heavy use of alcohol should be avoided when attempting pregnancy, but an adverse effect of modest alcohol consumption (1 drink per day) on conception