

Male Infertility



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KEYWORDS

- Male • Infertility • Semen analysis • Azoospermia • Oligospermia • Hypogonadism
- Testosterone • Klinefelter syndrome

KEY POINTS

- A male factor contribution to infertility is common. Ten percent to 15% of all couples attempting to conceive are infertile and half of these infertile couples have a male factor contribution.
- The proper initial workup for male factor infertility requires a thorough medical history, including medication use, and complete physical examination, including genitalia, serum laboratory testing, and at least 2 complete semen analyses.
- Exogenous testosterone usage is a common modern cause or contributor to male infertility and can have a lasting impact on a man's fertility potential.

INTRODUCTION

Infertility is defined as the inability to achieve pregnancy after 1 year of regular, unprotected intercourse. Infertility is a disease, in that it is a deviation from the normal function of a body part, organ, or system, in this case, the reproductive system.¹ Ten percent to 15% of all couples suffer from infertility, regardless of race, culture, or ethnicity.² In the absence of testing, infertility is a disease of couples. With testing, approximately 20% of couples are found to have both male and female factors that contribute to their infertility. In an additional 30% of couples, a significant male factor is the lone cause. Therefore, 50% of all infertile couples have a male factor contribution to problem.³ Infertility is a significant stressor in the lives of both the male and female partners that can strain relationships and lead to separation and divorce.⁴ The financial burden for infertility treatments, such as cycles of in vitro fertilization with intracytoplasmic sperm injection (IVF/ICSI), which are often not covered by insurance, can easily reach into the tens of thousands of dollars. This out-of-pocket expense can be a significant financial stressor to some and prohibitively expensive for others. The workup and treatment of male factor infertility can offer, in many cases, a cost-effective means to achieve healthy pregnancies without the need for IVF/ICSI.⁵

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Furthermore, male factor infertility can be a sign of a different, potentially life-threatening disease, such as testis cancer, that would be discovered only on physical examination, which is part of a standard infertility workup.⁶ Because of this, male factor infertility always deserves, at the very least, a complete initial workup, which is described in detail as follows.

EVALUATION OF THE MALE

Any couple with a female partner younger than 35 years that meets the definition of infertility (12 months of regular, unprotected intercourse without pregnancy) warrants further study. Couples in which the female partner is 35 or older, should consider evaluation after 6 months without pregnancy due to diminished fecundity of the woman beyond the age of 35. Additionally, if a couple presents with any known male or female risk factors or concerns, they can undergo evaluation without a requisite infertile timeframe or even before attempting conception. Couples seeking a fertility workup always should be offered simultaneous evaluation of the man and woman, the man being the focus of this article.¹ The basic evaluation of the infertile man includes a medical history, physical examination, 2 complete semen analyses, and hormonal serum laboratory testing, all of which are covered within this text.

HISTORY

A thorough medical history is important to identify possible risk factors for infertility in men, and always should begin with a reproductive history. The duration of time without conception is a defining factor of infertility and necessary to determine if the diagnosis is applicable. Infertility is further subdivided into primary and secondary infertility. If the patient has never achieved pregnancy with any partner at any time, this is referred to as primary infertility, whereas patients who have had prior conceptions or children with either the current or a previous partner and are currently infertile are suffering from secondary infertility. Determining if a man has secondary infertility can help narrow the differential diagnosis if he successfully fathered children in the past.⁷

Timing of intercourse is also an important historical component. Ideally, couples should have intercourse either daily or every other day around the time of ovulation. For a woman with regular periods, ovulation occurs approximately 14 days before the onset of menses.⁸ Couples can target the time of ovulation by marking a calendar or by using various modern apps that help track female cycles. Ovulation can be more precisely targeted by basal body temperature monitoring, transvaginal ultrasounds, serum hormone testing, or, most commonly, ovulation prediction kits. Ovulation prediction kits are widely available at drug stores and simply require urinating onto the testing device, much like a home pregnancy test. For couples that have not been timing intercourse around ovulation, it is important to determine the frequency of sex. Couples that have sex 3 to 4 times a week will definitely have sperm present during ovulation. However, couples that have sex once or twice a month could easily miss multiple ovulations over time.

A complete sexual history should always include erectile function, ejaculatory and orgasmic function, and history of lubricant usage. Erections satisfactory for penetrative intercourse and antegrade ejaculation are necessary for successful reproduction. On the other hand, dysfunction of erections or ejaculation can be indicative of additional pathology, hormonal or otherwise. Curvature of the erect penis, either due to Peyronie disease or congenital curvature, can interfere with successful intercourse and the deposition of sperm in the vaginal vault. Although lubricants can help facilitate sex for many couples, most commercial sexual lubricants adversely affect sperm mobility,

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