

Weight and Fertility

How to best counsel your patients with a high BMI about their fertility

Peak fertility and a healthy pregnancy most frequently occur when the female partner is in the normal BMI range, between 19 and 25. Underweight women face a higher risk for ovulatory disorders and secondary amenorrhea, which can sometimes be corrected with weight gain.

Overweight Women May Face Infertility Challenges

Being overweight can negatively affect a woman's fertility in several ways:

- Increase in ovulatory dysfunction, presenting as oligomenorrhea or secondary amenorrhea¹
- Lower chance of conception within 1 year of stopping contraception¹
- Exacerbation of conditions such as polycystic ovary syndrome (PCOS)¹
- Decreased response to clomiphene citrate and in vitro fertilization (IVF) stimulation medications, requiring more medication for a longer duration of time¹
- Higher risk of IVF cycle cancellation and fewer eggs retrieved¹
- Decrease in IVF pregnancy rates and success by as much as 10 percent in some studies¹
- Lower live-birth rate per embryo transfer²
- Increased risk of miscarriage¹

While the exact reason a higher rate of miscarriage is seen in this group of patients is still unknown, a recent study that Shady Grove Fertility presented at the 2016 ASRM Scientific Congress & Expo showed that the higher chance for miscarriage appears to be unrelated to chromosomal aneuploidy in the embryo, a common cause of miscarriage.³

Overweight Men Experience Higher Rates of Infertility

The BMI of the male partner can also impact the couple's overall ability to conceive.⁴ Obese men are found to have lower sex-hormone binding globulin (SHBG) and therefore lower levels of total testosterone, free testosterone, and/or gonadotropin concentrations. In addition, obese men have higher levels of estrogen from the aromatization in excess adipose tissue. These hormonal changes can cause lower sperm volume, concentration, and motility, which can ultimately result in male infertility. While not all

obese men will have infertility, we still recommend weight loss due to the adverse effects on other reproductive hormones.

Recommendations for Overweight and Obese Patients Trying to Conceive

Acknowledging the multitude of risks associated with obesity and pregnancy and the overall decreased rate of success with treatment, when possible, we encourage our patients to achieve and maintain a healthy BMI prior to initiating any form of intervention.

For women needing anesthesia for a procedure, such as an egg retrieval, we require a BMI cutoff of 40 to comply with the anesthesia guidelines of our accredited ambulatory surgical center. When surgery is not a part of the protocol, as in the case with intrauterine insemination (IUI), a BMI cutoff is in place in order to mitigate the increased risks associated with morbid obesity.

TREATMENT	BMI CUTOFF
Intrauterine Insemination	44
In Vitro Fertilization	40

For those patients for whom we recommend weight loss, whether it be to become eligible for treatment, or to improve their overall health and chance of success, we offer a variety of resources for multidisciplinary support. Patients may be referred to our new in-house Wellness Center to consult with a nutritionist, or to local bariatric specialists and weight loss programs.

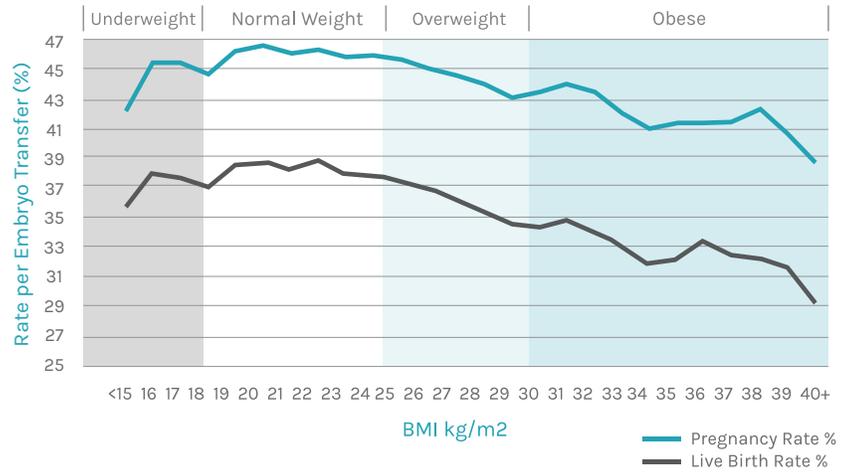
The decision to postpone treatment due to obesity is often a difficult conversation. As part of our preconception evaluation, our goal is to optimize medical conditions that pose a hazard to the health of mother and baby. Ultimately, we want our patients to have the healthiest pregnancy and healthiest baby possible.

1. Obesity and reproduction: a committee opinion. Practice Committee of the American Society for Reproductive Medicine. Fertil Steril. 2015 Nov;104(5):1116-26.
 2. Extremities of body mass index and their association with pregnancy outcomes in women undergoing in vitro fertilization in the United States. Kawwass JF, Kulkarni AD, Hipp HS, Crawford S, Kissin DM, Jamieson DJ. Fertil Steril. 2016 Dec;106(7):1742-1750.
 3. BMI is not associated with aneuploidy in patients undergoing preimplantation genetic screening (PGS). Fertility & Sterility Vol. 106 No. 3 Supplement Sept. 2016
 4. Weight and Fertility. ReproductiveFacts.org. ASRM Fact Sheet. 2015.
 5. ACOG Practice Bulletin No 156: Obesity in Pregnancy. Obstet Gynecol. 2015 Dec;126(6):e112-26.

How to Explain the Impact of BMI on Fertility

Evidence continues to show a correlation between a person's weight and his/her fertility. In women, we know that either too little or too much weight can alter what might otherwise be optimal reproductive health. Similar studies have also shown that overweight men experience diminished fertility, likely due to altered sexual function and abnormal semen parameters, which may be attributed to obesity.

IVF Cycle Outcomes based on Female BMI



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