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WEIGHT LOSS & PROPER CONDITIONING MAY IMPROVE FEMALE FERTILITY

The adverse effects of obesity on fertility and pregnancy outcomes are overwhelming and indisputable. Even with fertility drugs or in Vitro Fertilization (IVF) treatments, pregnancy rates are adversely affected by obesity. Body mass index (BMI) in kg/m^2 is calculated from maternal height and weight data. Morbid obesity is defined as BMI of 40 or greater; obesity is defined as BMI over 30. In obese women with excessive adipose tissue, abnormal hypothalamic and pituitary hormone secretions, as well as abnormal insulin hormone secretions are common, leading to anovulation (lack of ovulation). Obesity is seen in the majority of polycystic ovarian syndrome (PCOS) patients.

Insulin resistance

Most women with PCOS and/or obesity have an endocrine imbalance known as “*insulin resistance*” in which the body doesn’t handle insulin normally. Women with insulin resistance may have normal blood glucose levels, but because the cells of their bodies are resistant to insulin, the body over compensates by producing even higher levels of insulin to keep their blood glucose levels normal. The resulting higher insulin levels lead to more fat storage (obesity) and also disrupt proper ovarian hormone production, resulting in increased male hormones (Androgens), thus preventing proper ovulation. The increased ovarian Androgen levels adversely affect egg quality. Insulin resistance ultimately can produce all the symptoms of PCOS...anovulation, infertility, obesity, and hirsutism.

Obesity and anesthesia risks

Obese patients with significant ovulatory dysfunction often need to resort to IVF. Today almost all IVF centers are freestanding, outside of hospitals. IVF egg retrievals are performed under conscious sedation (moderate sedation/analgesia). The most critical part of patient care is providing for patient safety during the time the patient is sedated. Obese patients are at increased risk for complications such as over-sedation, under-sedation, respiratory insufficiency, hypoxemia (decreased oxygen in the blood), airway obstruction, and aspiration of stomach contents. Aspiration, although rare, is the most common cause of death secondary to conscious sedation. Proper patient selection involves recognition of risk factors that may place the patient at increased risk for complications and is critical to safe patient care. For this reason, many IVF centers have imposed restriction guidelines for BMI and IVF egg retrievals under conscious sedation. Women with a BMI over 40 (morbid obesity) need anesthesia medical clearance and Perinatal (High Risk OB) clearance; those with a BMI over 50 may not be allowed to proceed to egg retrieval and conscious sedation. Obese women with a BMI 35-39 must get medical clearance from their primary care physician before proceeding to IVF.

Increased pregnancy complications

In addition, many studies confirm that morbidly obese women who do conceive have a significantly increased risk of pregnancy complications and adverse perinatal outcomes. These complications include pre-eclampsia, antepartum stillbirth, caesarean section, shoulder dystocia, meconium aspiration, early neonatal death, diabetes mellitus, and birth defects involving the brain, heart and neural tube defects.

Weight loss of only 5-10% improves pregnancy rates

When women with PCOS are able to correct the insulin resistance with proper diet, exercise, and/or insulin-sensitizing drugs, such as metformin (Glucophage), normal ovarian function (ovulation and normal female hormone production) often returns. Use of metformin, regular exercise and/or weight loss of 5-10% of body weight can each *independently* lead to spontaneous pregnancies as well as dramatically improve pregnancy rates with all fertility treatments, such as Ovulation Induction (OI) and IVF.

Motivation & counseling

The take home message from these studies is that women need to be informed that obesity seriously hampers fertility; they need to be counseled about the serious dangers associated with obesity and pregnancy complications. Obesity is a chronic but treatable condition. Simply telling a patient to lose weight does not work. The problem of obesity can be solved, but requires motivation, counseling, and behavior modification.

Conclusions

Remember, as little as a 5-10% weight loss can dramatically improve fertility treatment pregnancy rates. For women who actively manage their obesity or PCOS via good nutrition, proper exercise, and help from a Reproductive Endocrinologist with expertise in the latest treatments, the chances of conceiving are extremely good.