

# The Impact of Nutrition on Fertility and the Central Role It Ought to Play in Fertility Care

Victoria Peck-Gray, RD

Proper nutrition is a critical factor for both men and women in optimizing fertility, but it is often underappreciated, or sometimes wholly overlooked, within the conventional fertility care model. In this model, the underappreciation for nutrition can go so far as being reduced to a simple question in an appointment: “Are you taking a prenatal multivitamin?” Couples struggling to conceive frequently receive this advice from their doctor: “Try for twelve months, and if you’re not pregnant, we will discuss your options”—“options” typically being to jump straight to assisted reproductive technologies (ART) such as in vitro fertilization (IVF). Not much guidance, however, is generally given for what the couple could do to increase their chances of natural conception, particularly how they could harness the power of food and nutrition.

Most couples want guidance on how to support their fertility with natural solutions such as nutrition and lifestyle changes. Since these solutions do not play a prominent role in the conventional fertility care model, many couples are seeking out providers like me who practice restorative reproductive medicine (RRM), a model of fertility care that aims to identify and correct root causes impacting fertility, often using targeted nutrition support as part of the care. I propose that nutrition optimization ought to be part of any fertility care plan prior to escalating to options

like ART. In fact, the impact of nutrition and lifestyle changes could potentially prevent the need for ART, saving couples money, time, and effort as well as dramatically reducing their health-care costs.

Below I describe the three major ways nutrition impacts fertility and explain how the RRM model of care embraces nutrition and why the standard model of fertility care ought to do the same.

## The Link Between Nutrition and Fertility

The food we eat literally becomes our body, powering every single process and chemical reaction that occurs each moment we are alive. When it comes to fertility, food and nutrients influence the health of eggs and sperm, support the hormonal cycles that drive conception, and even lay the foundation for a healthy pregnancy. Nutrition literally powers the creation of life and its sustenance.

Nutritional support can play many roles in optimizing and restoring fertility, including the following:

1. Correcting metabolic dysfunction, which is especially important in the condition polycystic ovarian syndrome (PCOS)<sup>1</sup>

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1 Onchee Yu et al., “Incidence, Prevalence, and Trends in Polycystic Ovary Syndrome Diagnosis: A United States Population-Based Study from 2006 to 2019,” *American*

2. Restoring nutrient deficiencies, which can impact numerous facets of fertility
3. Reducing inflammation, which has a role in endometriosis

## Metabolic Health and Fertility

In the United States and most Westernized countries, metabolic dysfunction is widespread. An estimated 93 percent of American adults have at least one biomarker indicating metabolic dysfunction, which is an impairment in the body's ability to efficiently convert food into energy.<sup>2</sup> Two of the most common conditions of metabolic dysfunction include insulin resistance and excess weight. These conditions are also known risk factors for infertility.

For example, at least 75 percent of women with PCOS, a metabolic condition affecting about one in twenty women that often creates challenges with conceiving, have insulin resistance (a form of blood sugar dysregulation).<sup>3</sup> High levels of insulin in women can disrupt the delicate balance of hormones needed for strong ovulation and successful conception.

Insulin resistance does not affect just women. Male factor infertility accounts for up to a shocking 50 percent of infertility cases, and insulin resistance is more prevalent in men with poor sperm quality and reduced sperm count.<sup>4</sup>

Blood sugar dysregulation can show up in a multitude of symptoms day to day, including fluctuating energy levels, sleep disturbances,

weight gain, and excessive cravings. These kinds of symptoms are so common among Americans that it almost seems a part of the modern cultural experience to be “tired and hangry.” But these symptoms often are red flags of burgeoning metabolic dysfunction.

If left unresolved, the underlying metabolic dysfunction of insulin resistance can advance from just an annoying extra few pounds of weight to reproductive dysfunction and inability to conceive. In my women's health and fertility nutrition practice, I coach my clients in supporting blood sugar balance and reducing insulin resistance through nutrition and lifestyle adjustments. The process of restoring blood sugar regulation can be fairly simple and has proven successful as a means of improving energy, overcoming resistant weight loss, and even getting pregnant.

Given the prevalence of metabolic dysfunction like insulin resistance and its known impact on fertility, and given how relatively simple and affordable it is to correct this dysfunction through nutrition and lifestyle changes, it only makes sense to feature nutrition support as part of the fertility care model.

## The Impact of Nutritional Deficiencies on Fertility

In addition to blood sugar and overall metabolic health, nutrient status plays an influential role in fertility. Essential nutrients include amino acids (from proteins) and essential fatty acids (omega-3 and omega-6), along with a multitude of vitamins and minerals. Deficiencies in any of these nutrients can impact reproductive health by impairing the development and quality of eggs and sperm as well as disrupting hormone signaling that conducts the whole reproductive process.

Here are just a few examples:

- Magnesium is a mineral used in over three hundred processes in the body, including energy production inside eggs and sperm, hormone signaling, and blood sugar regulation, to name a few that directly impact fertility. But research shows that close to 50 percent

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*Journal of Obstetrics and Gynecology* 229, no. 1 (2023): 39.e1–39.e12, <https://pubmed.ncbi.nlm.nih.gov/37061077/>.

2 Meghan O'Hearn, Brianna N. Lauren, John B. Wong, David D. Kim, and Dariush Mozaffarian, “Trends and Disparities in Cardiometabolic Health Among U.S. Adults, 1999-2018,” *Journal of the American College of Cardiology* 80, no. 2 (2022): 138–51, <https://pubmed.ncbi.nlm.nih.gov/35798448/>.

3 Yu et al., “Incidence, Prevalence, and Trends.”

4 Adrianna Zańko, Katarzyna Siewko, Adam Jacek Krętownski, and Robert Milewski, “Lifestyle, Insulin Resistance and Semen Quality as Co-Dependent Factors of Male Infertility,” *International Journal of Environmental Research and Public Health* 20, no. 1 (2022): 732, <https://pmc.ncbi.nlm.nih.gov/articles/PMC9819053/>.

of the U.S. population is not meeting the minimum daily requirements for magnesium.<sup>5</sup>

- Zinc is a mineral that supports the maturation of eggs, assists in hormone production, and enhances sperm quality. Low zinc levels have been associated with reduced fertility in both men and women.
- Omega-3 fats play a key role in reducing inflammation and promoting healthy blood flow to the reproductive organs, improving the chances of implantation. But according to NHANES data, around 89 percent of adults have low blood concentrations of these essential fats, which puts them at risk for cardiovascular issues and fertility challenges.<sup>6</sup>

Nutrient deficiencies can occur due to factors such as poor dietary intake and depletion from chronic stress, which can often leave people with low levels of essential nutrients well beyond the duration of the stressor if nutrients are not intentionally replenished. Therefore, identifying personal nutrient deficiencies and providing nutrition support to replenish nutrient levels can have a profound impact on fertility care.

## Nutrition's Role in Endometriosis Care

Alongside PCOS, another common condition that can negatively impact fertility is endometriosis, which

is a factor in about 50 percent of infertility cases. Most medications prescribed for endometriosis do not address the root cause of the disease. The RRM model of care, which includes fertility awareness-based methods and laparoscopic excision of endometriosis, on the other hand, can identify and treat endometriosis earlier.

The RRM approach to endometriosis often embraces nutrition support as a complement to this care process. Nutrition guidance, often including an anti-inflammatory diet and targeted supplementation, can help to further alleviate pain and inflammation, along with balancing hormones in order to enhance recovery and prevent progression of the condition.

## A Call to Action: Elevating the Role of Nutrition in Fertility Care

Optimizing nutrition can play a profound role in fertility care, including reversing metabolic dysfunction to promote a fertile environment in the body, supplying the nutrients needed for the development of healthy eggs and sperm, and helping patients to recover from conditions such as PCOS and endometriosis that pose challenges to fertility. Targeted nutrition and lifestyle changes can provide natural solutions in fertility care that address root causes, promote overall thriving health, and come at a fraction of often cost-prohibitive ART.

Despite these facts, the standard model of fertility treatment regularly bypasses these foundational, natural options for restoring reproductive health and instead typically leans on costly ART that do not address root causes. The RRM model recognizes and embraces nutrition support as a foundational component of fertility care along with other natural options that can be used before sending couples to ART.

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5 James J. DiNicolantonio, James H. O'Keefe, and William Wilson, "Subclinical Magnesium Deficiency: A Principal Driver of Cardiovascular Disease and a Public Health Crisis," *Open Heart* 5 (2018): 1–16, e000668, <https://pmc.ncbi.nlm.nih.gov/articles/PMC5786912/>.

6 Rachel A. Murphy, Prasad P. Devarshi, Shauna Ekimura, Keri Marshall, and Susan Hazels Mitmesser, "Long-Chain Omega-3 Fatty Acid Serum Concentrations Across Life Stages in the USA: An Analysis of NHANES 2011–2012," *BMJ Open* 11, no. 5 (2021): 1–8, e043301, <https://pmc.ncbi.nlm.nih.gov/articles/PMC8112395/>.

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**Victoria Peck-Gray, RD** is a registered nurse, functional medicine dietician, and the founder of *Wonderfully Made Nutrition*.