

Dietary influence on reproduction and nutritional implications for public health.

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Accepted on November 17th, 2021

Introduction

Despite mounting evidence that nutrition has an influence on human fertility, few researches have looked into the health consequences. This narrative review reviews current scientific information on food consumption and fertility, examines obstacles in the public health environment around infertility, and offers evidence-based suggestions to address these concerns. Unsaturated fats, whole grains, vegetables, and fish have all been linked to increased fertility in both men and women. While the data on the effects of dairy, alcohol, and caffeine is mixed, saturated fats and sugar have been linked to lower fertility in both males and females. Obese women and men are also more likely to have infertility. Because diet and BMI have an impact on results during clinical infertility therapy, it may be appropriate to incorporate nutrition counseling into both clinical infertility recommendations and national dietary guidelines for people of reproductive age. More research into food and reproductive health might help us improve current fertility programs and provide targeted treatment to women and men in at-risk populations. Infertility can have a major physical, emotional, and financial impact on couples. The goal of this paper is to review the literature on dietary variables in infertility and examine the public health implications of this body of knowledge [1].

Evidence on Diet and Fertility

Research on the links between individual nutrients and foods and fertility might provide valuable insight into the processes that link nutrition and reproductive health. Low levels of foliate have been related to a reduced prevalence of spontaneous anovulation, in addition to neural tube abnormalities in babies. Polyunsaturated fats, on the other hand, have been demonstrated to help both males and females reproduce. A men's cross-sectional study found that increased omega-3 fatty acid consumption was linked to considerably better sperm morphology. Inconclusive data has also been found in studies on the effects of alcohol and caffeine on fertility. In the NHS, neither alcohol nor coffee seemed to impede ovulation to the extent of lowering fertility [2].

Body Mass Index

According to current studies, BMI and fertility have a roughly "J"-shaped connection, with the risk of infertility being highest at the lowest and highest ends of the BMI spectrum. After controlling for diet, age, smoking, and oral contraceptive use, women classified as underweight (BMI 20 kg/m²; RR: 1.38; 95 percent CI, 1.03, 1.85) and obese (BMI 30 kg/m²; RR: 2.35; 95 percent CI, 1.78, 3.11) had a higher risk of ovulatory disorder

infertility than women classified as recommended weight (BMI 20–25 kg/m²). Furthermore, according to a review of the research on male obesity and fertility, male obesity is linked to an increased risk of infertility, possibly due to endocrine deregulation processes (22). Obesity has also been connected to the efficacy of ART therapy. Although the absolute risk of ovulatory disease infertility was higher in those with a BMI over 25 kg/m² comparison to those with an advised BMI, the extent to which dietary adjustments inactivated that risk was similar in the two groups, the connection between an ideal diet plan and risk of fertility problems was not altered by BMI. A recent systematic analysis looked at the influence of weight reduction programs on fertility-related outcomes in people who were overweight or obese [3].

Diet-Fertility Connection Implications for Public Health

Various components of diet may minimize the incidence of fertility difficulties in the general reproductive-aged community and may also be an effective therapy for men and women who are currently infertile. Nourishment and/or obesity counseling is likely to be essential in fertility treatment. Given the effectiveness of weight reduction therapies on reproductive outcomes, this line of action appears to be promising. However, regardless of BMI status, data shows that eating a nutritious diet has a same effect on fertility. As a result, it could be advisable to explore extending weight-loss or nutritional counseling to all infertility patients, while still prioritizing those who are below or over particular BMI cutoffs. Nutritional counseling might be included in national clinical recommendations for fertility as one approach to help with this [4].

Nutritional Recommendations for Fertility Development

Foods and nutrients with significant evidence for enhanced fertility at the population level may be limited as a result of this exclusion. Furthermore, while fish high in omega-3 fatty acids are typically advised as part of a healthy diet, some types of fish have the potential to pollute the environment with mercury and other contaminants. Despite the fact that most studies have found no link between mercury consumption and fertility or reproductive outcomes (33–36), pregnant women and women of childbearing age are advised to consume seafood (37). Nonetheless, these individuals should consume omega-3 fatty acids as part of a balanced fertility diet (38). It may be possible to enhance national nutrition standards by recognizing the types and amounts of foods that contribute to reproductive health [5].

Conclusion

The research on the association between fertility and diet is summarized. While there is a well-established link between high

folic acid intake, polyunsaturated fat intake, and plant-based diets and reproductive outcomes, additional study is needed to fully comprehend the functions of other foods. Future study should also take into account the requirement for randomized controlled trials and studies that look at the combined impact of females and males partners' diets on fertility. Furthermore, in order to ameliorate current gaps in fertility and overall health outcomes, there is an urgent need to develop focused messaging and treatments for those with extreme BMI categories, racial/ethnic minorities, and low-income and low-education groups. More evidence-based suggestions and treatments will be driven and implemented as a result of future research and collaboration among stakeholders in research institutions, clinical practice, and the society.

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