THE ROLE OF NUTRITION IN INFERTILITY: EVALUATING THE RESEARCH

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DISCLOSURES
Owner of ShawSimpleSwaps.com, Nutrition Communications Consulting Company & BumpstoBaby.com, Infertility Support Community
Co-Author: Fertility Foods Cookbook: 100+ Recipes to Nourish Your Body
Current Clients:
California Avocado Commission, Alliance for Food & Farming, Halo Top Creamery

OBJECTIVES
- Define infertility and its prevalence.
- Evaluate the latest research surrounding nutrition and infertility.
- Discuss specific conditions that may lead to infertility.
- Identify the basic tenants of a diet conducive to conception, highlighting differences amongst genders and specific disease state recommendations.
- Summarize the RDN role in helping clients struggling with infertility.
- List resources for further education surrounding nutrition and fertility.
WHAT IS “INFERTILITY”? (1-3)

Is It Really That Common? (1-5)

WHAT ARE SOME CAUSES OF INFERTILITY?

- Unexplained Infertility
- Endocrine Disorders
- PCOS (Polycystic Ovary Syndrome)
- Anatomical Abnormalities & Anomalies
  - Endometriosis
  - Uterine Irregularities (Unicornuate, Bicornuate, Septate)
  - Fibroids & Polyps
- Male Factor Infertility
UNEXPLAINED INFERTILITY

Reason of infertility is unknown

>1 year trying to conceive, or 6 months if >35 years old

Consider recommending testing for Celiac Disease

Monitor and assess low body weight for concerns related to malnutrition from an eating disorder or disordered eating tendencies/hyperactivity (female athlete triad)

ENDOCRINE: PCOS (6, 7)

Endocrine disorder that causes an alteration of sex hormones in the female body

Affects 5-10% of reproductive age women

Primary cause of ovulatory infertility related to elevated insulin levels and over production of testosterone

ANATOMICAL ABNORMALITIES: ENDOMETRIOSIS (8,9)

Condition when uterine tissue grows outside of the uterus

Affects 10% of reproductive age women

Many women with endometriosis often struggle with conception, but not all
ANATOMICAL ABNORMALITIES & ANOMALIES (10,11)

Uterine Irregularities

- Unicornuate
- Unicorn shaped uterus
- Bicornuate
- Heart shaped uterus
- Septate
- A tissue wall that lines and separates the uterus into two cavities

Fibroids and polyps

MALE FACTOR INFERTILITY

Infertility related to sperm production, morphology, and delivery

7% of men of couples who struggle with infertility experience male factor infertility (7)

CAN NUTRITION PLAY A ROLE IN CLIENTS WHO ARE STRUGGLING WITH INFERTILITY?
A LOOK AT THE RESEARCH

FEMALE INFERTILITY: NURSES HEALTH STUDY (12,13)

116,000 women between the ages of 25-42
Evaluated lifestyle patterns & corresponding risk of chronic disease
Data taken and researched more closely by several scientists to explore reproductive health

WHAT IS A “DIET CONDUCIVE TO CONCEPTION”? (8)
#1: THE PRODUCE PATCH

Increased consumption of fruits and vegetables:

Males: (15)
- Sperm negatively affected by a diet low in fresh fruits, vegetables, and antioxidants

Females: (13)
- Slower digesting carbohydrates, including whole fruits, vegetables, was thought to result in an improvement in ovulation cycles

THE CASE FOR CONVENTIONAL

Journal of Toxicology (16)
- 23% of organic food samples tested positive for pesticides

International Journal of Food Contamination (17)
- Dietary exposure to pesticides far below public health concern
- 77 specific pesticides tested, of which 3 showed exposure levels >1% when compared to the Chronic Reference Dose Levels; majority were under .1%

THE CASE FOR ORGANIC

Human Reproduction (18) - Male Fertility
- Higher intakes of pesticide containing produce resulted in decreased sperm quality
- Higher intakes of low to moderate containing pesticide produce produced an increase in morphologically "normal" sperm compared to little to no produce

JAMA Intern Med (19) - Female Fertility with ART (Assisted Reproductive Technology)
- Higher intakes of F/V with greater pesticide exposure resulted in fewer pregnancies and live births
PCOS/ENDOMETRIOSIS RECOMMENDATIONS

PCOS Nutrition Recommendations

- Go organic, if possible (7,20)
  - Due to the imbalance in sex hormones, lean towards organic produce to reduce exposure to environmental contaminants that may further disrupt ovulation.

Endometriosis (21)

- Increase green vegetable and fresh fruit consumption

BOTTOM LINE: PRODUCE

More produce, not no produce, is the best option!

Work with clients to identify what their diagnosis and budget warrant.

#2: WHOLE GRAINS

Encourage consumption of whole grains

- Stabilize blood sugar to prevent hormonal fluctuations that can disrupt fertility
- For clients with Celiac or gluten-sensitivity, utilize gluten free whole grains
GENDER SPECIFIC RESEARCH

Female Fertility (12)

- Higher intakes of whole grains = higher rates of conception and live births (10)
- Warranted for IVF success, too (22)
- BioCycle Study, the type of dietary fiber may pose a greater risk for an anovulatory cycle (23)

Male Fertility (24)

- Higher sperm quality seen in men who follow a diet high in whole grains, as well as produce and lean proteins (like chicken and fish)

PCOS & GF RECOMMENDATIONS

PCOS Nutrition (25)

- Low GI (glycemic index) foods
  - Helps to lower circulating insulin levels that usually result with intake of higher GI foods

Celiac Disease, Gluten-Sensitive Nutrition (26)

- Tailored plans to include GF whole grains

BOTTOM LINE: WHOLE GRAINS

Both families and females, make your grains whole!
#3: PROTEIN

Focus on plant forward and choline rich sources (27)

- Such as beans, lentils, soy, nuts, seeds, quinoa

- Eggs

Encourage 2-3 servings of omega-3 rich fish per week (28,29)

- Follow mercury recommendations as per pregnancy

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RESEARCH ON SOY

Female Fertility

- BioCycle Study: isoflavones from soy based foods do not negatively affect ovulation (30)

- Soy consumption benefits women undergoing ART (31)

Male Fertility

- Fertility and Sterility, Beaton

- 32 healthy male adults, semen volume, sperm concentration, count, motility, and morphology were not significantly affected by consumption of soy protein isolates (32)
BOTTOM LINE: PROTEIN

Move towards a plant forward eating style.
Soy foods, in moderation, are a great addition for males and females!

#4: DAIRY

Females
- 2 servings whole milk dairy per day (12,13)
- IVF patients greater success in those >35 years of age (33)

Males
- Low fat dairy to increase sperm concentration and progressive motility (34)

PCOS/ENDOMETRIOSIS RECOMMENDATIONS

PCOS Nutrition (35,36)
- 2 servings of whole milk dairy a day
- Lower GI sources, like cheese
- Lifestyle interventions, including exercise

Endometriosis Nutrition (37)
- Higher intakes of dairy foods and plasma 25(OH)D levels associated with decreased risk of endometriosis
BOTTON LINE: DAIRY

Work with clients on how they can successfully incorporate dairy into their eating patterns, especially if dual factor infertility is a concern.

#5: HEALTHY FATS

Trans-fat negatively affects fertility (38,39)

Focus on unsaturated fats

- Such as avocados, olive oil, nuts, seeds and fatty fish
- Consume omega-3 rich fish 2 times per week (28)

GENDER SPECIFIC RESEARCH

Female Fertility

- Optimal ratio of omega 6:omega 3 varies
  - 2013 study revealed higher intakes of omega 6 increased success in IVF cases (40)
  - Caveat, more infertility than in the past with current ratio 10:1 concerning omega 6:3 versus 1:1 in the past (41)

Male Fertility

- 75 grams walnuts can improve sperm vitality, motility and morphology (42)
PCOS RECOMMENDATIONS

PCOS Nutrition (43)
- Omega 3 supplementation may:
  - Reduce serum concentrations of testosterone
  - Regulate menstrual cycle

BOTTON LINE: FATS
Educate on including the right type of fat in the diet!

SUPPLEMENT CONSIDERATIONS

Vitamin D (44)
Female Specific:
- Choline (45)

PCOS (46, 47)
- Myo-inositol (MI), D-chiro-inositol (DCI)
Male Specific (48)
- Zinc (49)
- L-carnitine (50)
THE ROLE OF THE RDN

Individualized approach
Small, manageable changes
Tailored nutrition intervention to increase Mediterranean Diet patterns (51, 52)

- Produce
- Whole grains
- Plant-forward protein
- Dairy
- Healthy fats

OTHER CONSIDERATIONS

Address lifestyle factors

- Smoking
- Physical activity
- Stress

Emotional support
Utilize the multi-disciplinary team

RESOURCES - NUTRITION

ASRM: American Society of Reproductive Medicine
Women's Health Dietetic Practice Group
The Fertility Diet, Chavarro, Willett
Fertility Foods Cookbook: 100+ Recipes to Nourish Your Body, Co-Author: Elizabeth Shaw, Sara Haas
PCOS Nutrition Center, Angela Grassi
Expect the Best: Before, During & After Pregnancy, Elizabeth Ward
The PCOS Diet Plan, Hillary Wright
RESOURCES - EMOTIONAL

Resolve, Non-Profit Organization
Shine Infertility, Mid-West Support Organization
BumpstoBaby.com, Infertility Support Community
Sunshine After the Storm, Book
Beat Infertility, Podcast
pregnantish.com, Support Website

THE ULTIMATE GOAL IS TO IMPROVE NUTRITION, REDUCE STRESS AND HELP OUR CLIENTS NOURISH THEIR BODIES!

THANKS FOR JOINING US TODAY.

Any questions?
A SPECIAL THANKS

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