

Exclusive Webinar Presentation

**The Role of
Nutrition in Infertility:
Evaluating the Research**



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CPEU

Presented by Elizabeth Ann Shaw, MS, RDN, CLT, CPT
on Tuesday, April 24, from 2-3pm ET

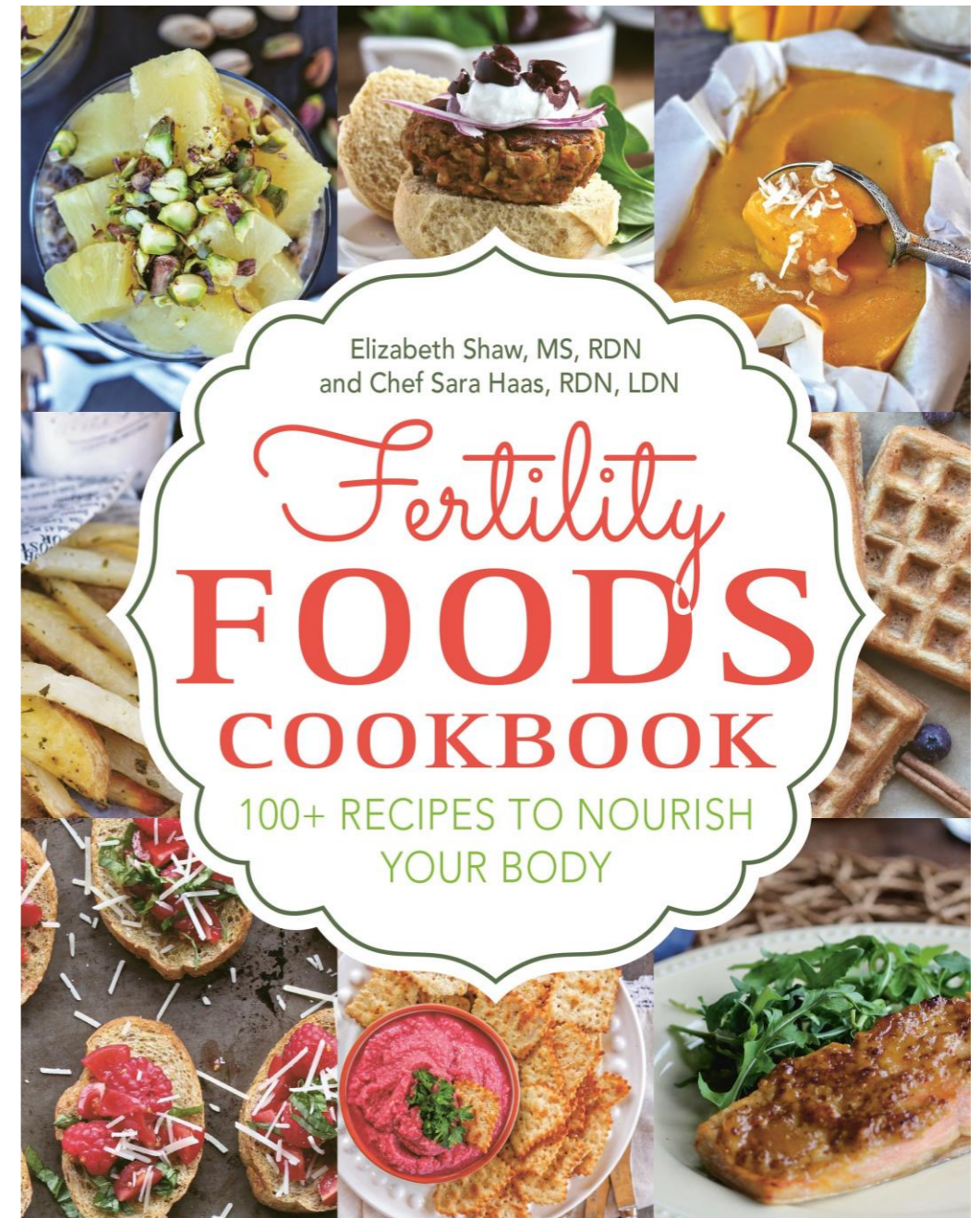
DISCLOSURES

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)



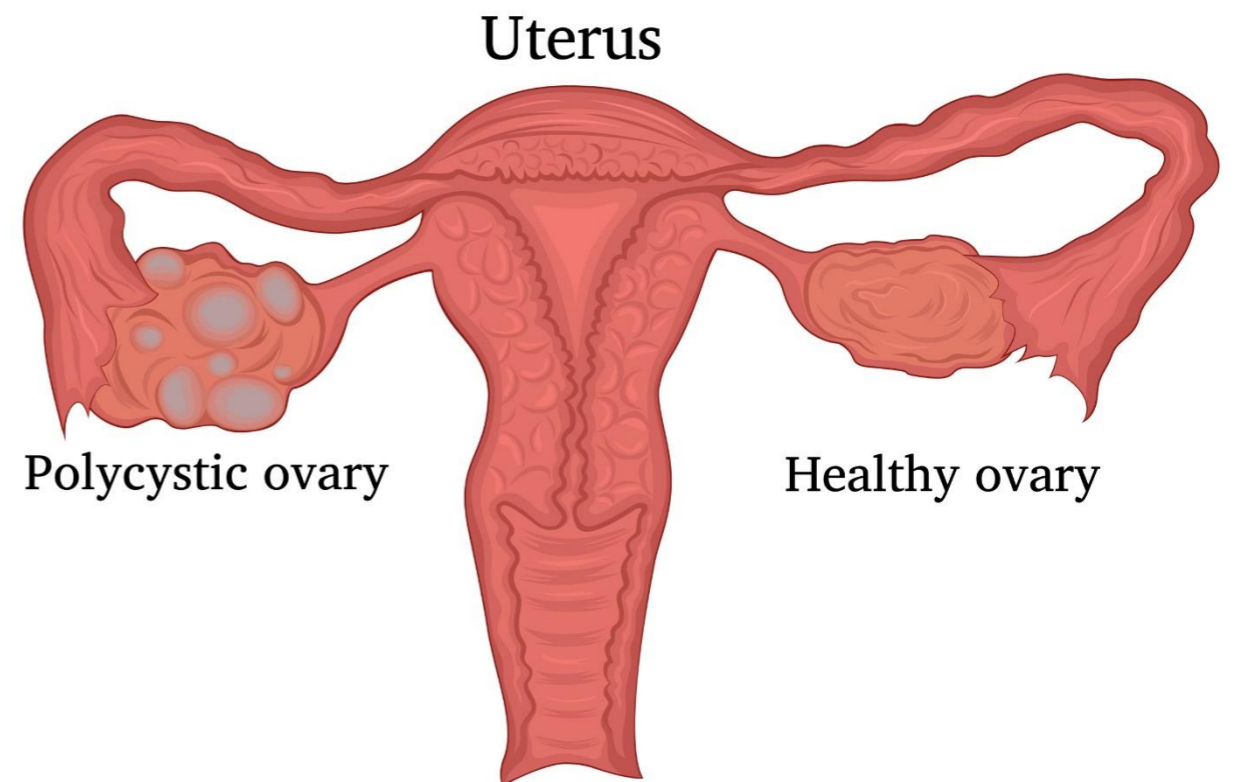
ENDOCRINE: PCOS (6, 7)

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

Polycystic ovary



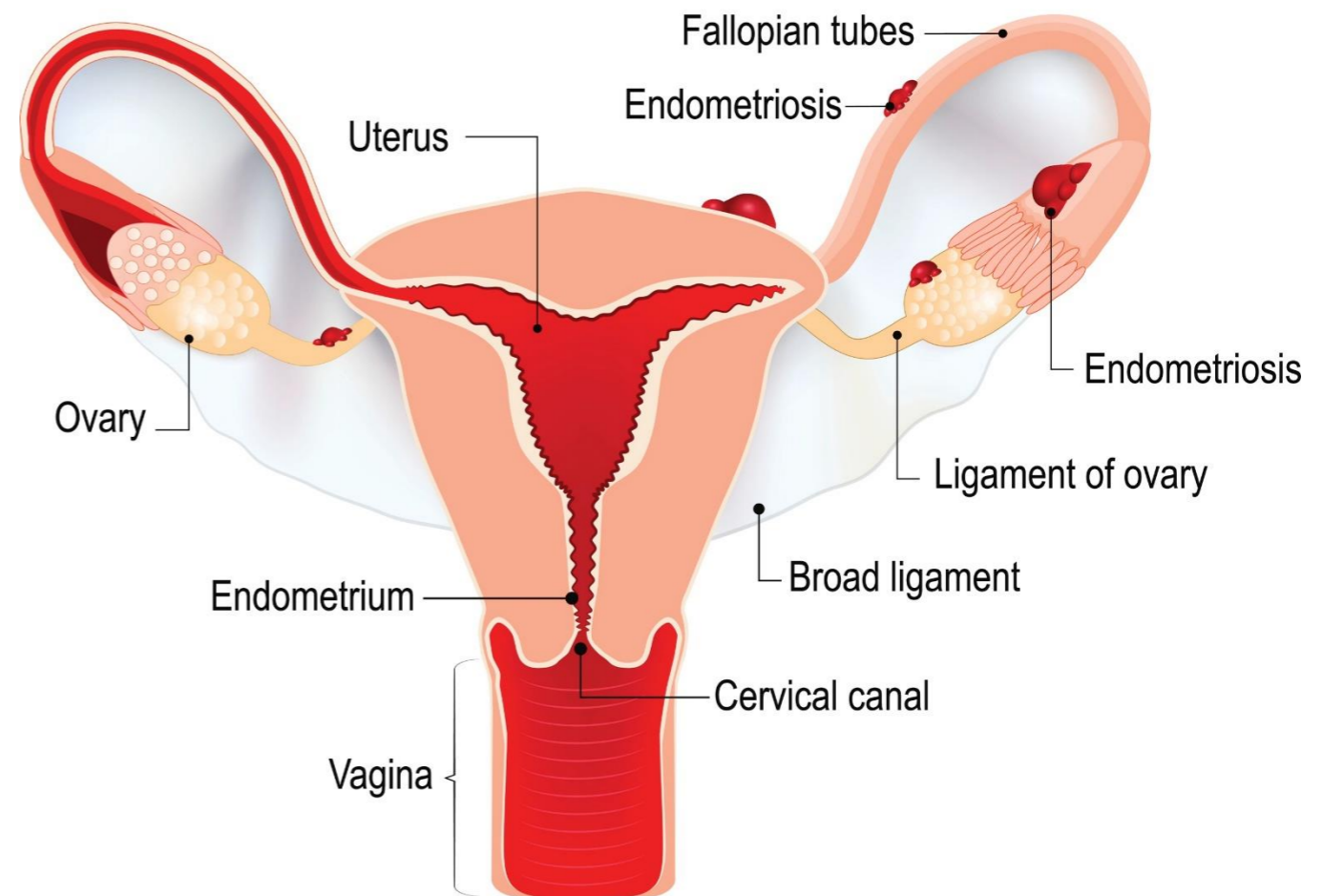
ANATOMICAL ABNORMALITIES: ENDOMETRIOSIS (8,9)

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

ENDOMETRIOSIS



ANATOMICAL ABNORMALITIES & ANOMALIES (10,11)

Uterine Irregularities

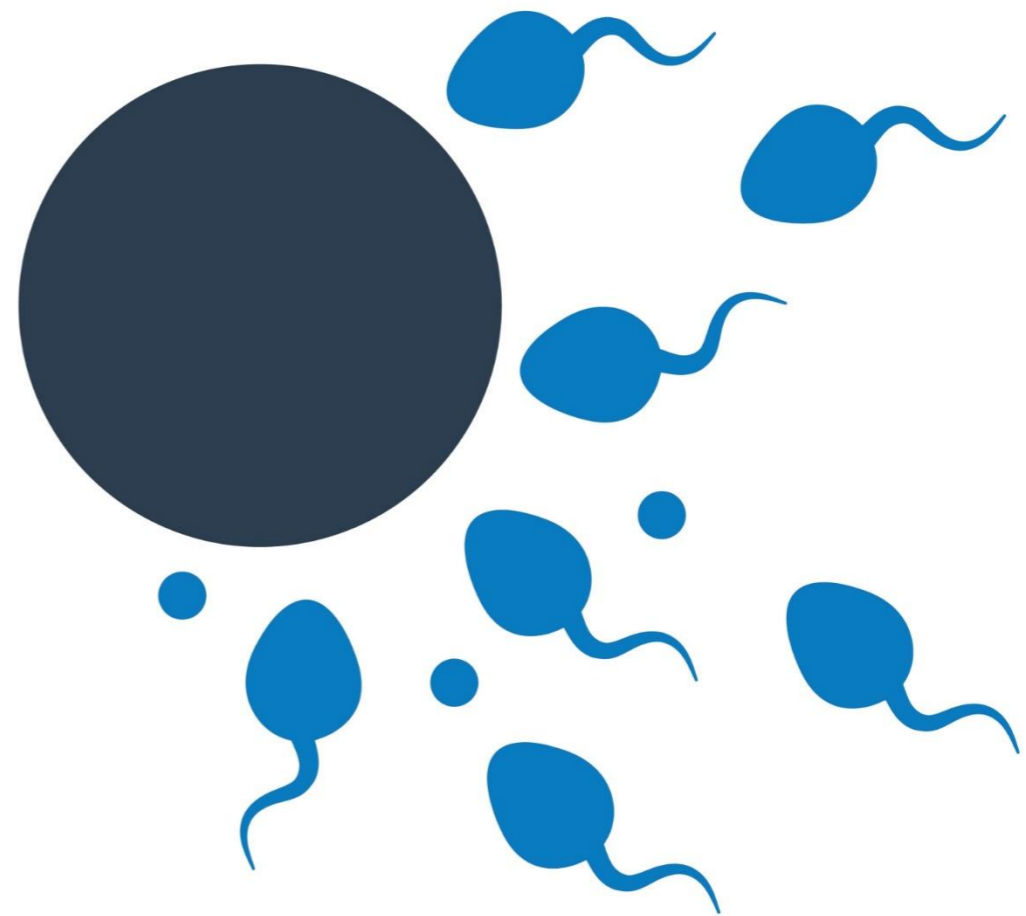
- Unicornuate
 - Unicorn shaped uterus
- Bicornuate
 - Heart shaped uterus
- Septate
 - A tissue wall that lines and separates the uterus into two cavities

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 (2)



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 CONDUCTIVE 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

BOTTON 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 intakes of higher GI foods

Celiac Disease, Gluten-Sensitive Nutrition (26)

- Tailored plan to include GF whole grains

BOTTON 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



Advice About Eating Fish

What Pregnant Women & Parents Should Know

Fish and other protein-rich foods have nutrients that can help your child's growth and development.

For women of childbearing age (about 16-49 years old), especially pregnant and breastfeeding women, and for parents and caregivers of young children.

- Eat 2 to 3 servings of fish a week from the "Best Choices" list OR 1 serving from the "Good Choices" list.
- Eat a variety of fish.
- Serve 1 to 2 servings of fish a week to children, starting at age 2.
- If you eat fish caught by family or friends, check for fish advisories. If there is no advisory, eat only one serving and no other fish that week.*

Use this chart!

You can use this chart to help you choose which fish to eat, and how often to eat them, based on their mercury levels. The "Best Choices" have the lowest levels of mercury.

What is a serving?



For an adult
4 ounces



For children,
ages 4 to 7
2 ounces

To find out, use the palm of your hand!

Best Choices <small>EAT 2 TO 3 SERVINGS A WEEK</small>			OR	Good Choices <small>EAT 1 SERVING A WEEK</small>		
Anchovy	Herring	Scallop		Bluefish	Monkfish	Tilefish (Atlantic Ocean)
Atlantic croaker	Lobster, American and spiny	Shad		Buffalofish	Rockfish	Tuna, albacore/white tuna, canned and fresh/frozen
Atlantic mackerel	Mullet	Shrimp		Carp	Sablefish	Tuna, yellowfin
Black sea bass	Oyster	Skate		Chilean sea bass/Patagonian toothfish	Sheepshead	Weakfish/seatrout
Butterfish	Pacific chub mackerel	Smelt		Grouper	Snapper	White croaker/Pacific croaker
Catfish	Perch, freshwater and ocean	Sole		Halibut	Spanish mackerel	
Clam	Pickering	Squid		Mahi mahi/dolphinfish	Striped bass (ocean)	
Cod	Plaice	Tilapia		Choices to Avoid <small>HIGHEST MERCURY LEVELS</small>		
Crab	Pollock	Trout, freshwater		King mackerel	Shark	Tilefish (Gulf of Mexico)
Crawfish	Salmon	Tuna, canned light (includes skipjack)		Marlin	Swordfish	Tuna, bigeye
Flounder	Sardine	Whitefish		Orange roughy		
Haddock		Whiting				
Hake						

*Some fish caught by family and friends, such as larger carp, catfish, trout and perch, are more likely to have fish advisories due to mercury or other contaminants. State advisories will tell you how often you can safely eat those fish.

www.FDA.gov/fishadvice

www.EPA.gov/fishadvice



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)

BOTTON 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, Hilary Wright

RESOURCES - EMOTIONAL

Resolve, Non-Profit Organization

Shine Infertility, Mid-West Support Organization

[BumpstoBaby.com](https://www.bumpstobaby.com), Infertility Support Community

Sunshine After the Storm, Book

Beat Infertility, Podcast

[pregnantish.com](https://www.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

Content Reviewed by

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