Functional Approach to Fertility Optimization

Taylor Dukes, FNP
CEO of Taylor Dukes Wellness and co-founder of Restore & Revive
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Technical Issues & Clinical Questions

Please type any technical issue or clinical question into either the “Chat” or “Questions” boxes, making sure to send them to “Organizer” at any time during the webinar.

We will be compiling your clinical questions and answering as many as we can the final 15 minutes of the webinar.

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Functional Approach to Fertility Optimization

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Overview of this Presentation

- Understand how to optimize body prior to conception

- Review of macro and micronutrients to support conception and pregnancy

- Using the NutrEval and Metabolomix+ profiles, discuss common nutrient deficiencies important for conception
Prepare a healthy seed and healthy soil

• Infertility is increasing, along with the use of reproductive technology
• One of the most overlooked and undervalued approaches to fertility is screening the couple’s preconception health and evaluating nutrition

Image: https://thecycleoflifeblog.wordpress.com/2016/07/20/nourish-the-soil-before-you-plant-the-seed/
Optimize Fertility With Nutrition

- Macros and micros to prioritize
- How to optimize the body *prior* to conception
- How soon to get on a prenatal
- Detox protocols prior to conception

The importance of nutrition is often overlooked or just skimmed by their doctors when patients are planning to grow their families!
Why is Mother’s Health so Important?

- Women are born with all the eggs she’ll ever have
- Age and stressors significantly impact the quality of available eggs

- Enough and the right nutrients for baby
- Want enough nutrients left over for the Mother
- Mother’s gut health influences baby’s gut health
Macros and Micros to Prioritize

- Stock your home with pasture-raised, grass-fed, and wild-caught animal protein

- Healthy sources of fiber include apples, prunes, ground flax seeds, and soaked chia seeds

- Include liver, spinach, asparagus, and broccoli in the diet if you are trying to conceive and the first trimester
It's important that women are eating an abundance of lentils, chickpeas, beans, nuts, seeds, and quinoa.

Include organ meats, pumpkin seeds, white beans, lentils, and spinach into meals to help increase iron supply.
Macros and Micros to Prioritize

Healthy Fats

- Stock your fridge with wild-caught salmon, sardines, and avocado and keep these main staples in your cabinet like flax, chia, walnut, and pumpkin seeds plus organic extra virgin olive oil

Magnesium

- sprinkle in some pumpkin seeds, brazil nuts, quinoa, spinach to your meals for some extra magnesium support
How to Optimize the Body Prior to Conception

- Organic foods
- Foods that are in season
- Colorful fruit and vegetables
- Anti-inflammatory foods
- Low glycemic index foods & increased fiber
- Hydration is key... but make sure it's filtered water
- Replace plastic containers
Optimize the Body Prior to Conception

- Organic Foods
  - EWG dirty dozen list and clean fifteen list
Optimize the Body Prior to Conception

• Foods That Are In Season
  – Helps with gut diversity and allows the gut a rest from other foods
  – CSA (Community-supported agriculture) options in their area or shop at a farmer's market

• Aim For a Variety of Colorful Fruits and Veggies
  – Each color contains specific phytonutrients
  – Benefits: Enhancing your immune system, antioxidants, anti-inflammatory, etc...
Optimize the Body Prior to Conception

• Anti inflammatory Foods
  – Inflammation can damage cells and magnify health issues prior and during pregnancy
  – Can relieve symptoms of common causes of female infertility; endometriosis and PCOS
  – Turmeric, Ginger, Green Leafy Vegetables, Berries, Wild-caught salmon, Extra Virgin Olive Oil (not heated), and beets

• Low Glycemic Index Foods & Increased Fiber
  – Low glycemic index diets can reduce the risk of large-for-gestational-age (LGA) infants
  – Associated with improved pregnancy outcomes
    • An observational study of 1538 women in the US showed that higher total fiber intake three months before and during early pregnancy reduced preeclampsia risk by attenuating pregnancy-associated dyslipidemia
Optimize the Body Prior to Conception

• Hydration is Key...But Make Sure it's Filtered Water
  – Reduce their toxic load as much as possible by using filtered water in a stainless-steel water bottle.
    • Berkey water filters and Aqausana are highly rated

• Replace Plastic Containers
  – Prenatal exposure to BPA, phthalates, and polyfluoroalkyl chemicals may be associated with fetal growth restriction and hormonal imbalances
Focus on eating as many whole, colorful foods as possible!
# Foods to Stay Away From During Pregnancy

<table>
<thead>
<tr>
<th>Limit caffeine and alcohol intake</th>
<th>Dirty dozen, pesticide residue foods</th>
<th>Highly processed and refined food</th>
<th>Refined sugar and sugar alternatives like aspartame</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diet teas</td>
<td>Lunch meats or conventionally raised animal products</td>
<td>Trans fats, hydrogenated oils, refined vegetable oils</td>
<td>Seafood, high in Hg. Minimize tuna consumption, and poorly raised salmon</td>
</tr>
</tbody>
</table>
| Food dyes                        | Sodas (loaded with sugar, or even "zero sugar sodas" that are loaded with artificial sweeteners.)
The Impact of Stress

- Chronic stress leads to a persistent elevation in cortisol
  - Cortisol leads to an imbalance in other hormones or a disruption of HPA-axis
  - Fight-or-flight state
- Cortisol can lead to imbalanced sex hormones
  - Study demonstrated a connection between stress and ovulation
    - Reported high stress during ovulation were 40% less likely to conceive during that cycle compared to other less stressful months

The Impact of Stress

• When the HPA axis is activated by stressors, it can affect fertility by:
  – Lowering the FSH/LH ratio
  – Lowering oocyte capability
  – Reducing the number of sites that implantation can occur in the uterus
  – Altering the follicular fluid make-up surrounding the ovum
  – Lowers progesterone levels
    • Your body will choose to make cortisol for survival over progesterone which affects fertility
  – Impacts thyroid levels
    • Inhibit the conversion of T4 to the active T3 form
Stress Reduction Techniques

- Yoga
- Meditation
- Journaling
- Talking with a therapist
- Communicating with your partner
- Practicing gratitude
- Breathing Exercises
- Exercising – however, don’t overexercise!
- Spending time with uplifting friends
The Importance of Micronutrients

• WHO estimates around 2-billion people are deficient in micronutrients, with women being at particular risk because of menstruation and metabolic demands of pregnancy

• Common Deficiencies Include:
  – Iron
  – Iodine
  – Zinc
  – Vitamin D
  – Vitamin A
  – B vitamins
  – Folate

How Soon to Get on a Prenatal?

• Ideally, patients should start preparing their body for conception 3-6 months beforehand
  – Allows them to maximize their gut and nutrient levels and prepare the baby's environment for optimized growth and development

• However, if your patient just found out they are pregnant, have them begin a prenatal as soon as possible to give their baby all the nutrients as possible
Choose A High-Quality Prenatal Vitamin that is GMP Certified Label

The prenatal should contain the following:

- Methylfolate (NOT folic acid)
- Vitamin E
- Choline
- Iron
- Zinc
- Methylated B vitamins
- Vitamin A in the form of beta carotene
- Copper
- Vitamin C
- Calcium
- DHA

How to Choose A Prenatal for you Patients

Recommended Supplements for Egg Quality

- Glutathione
- N-Acetyl Cysteine (NAC)
- Coenzyme Q10
- DHEA
- Fish Oil/ Omega-3 Fatty Acids
- Vitamin C
Why Should I Detox Before Pregnancy?

- Toxins can decrease Infertility
- Toxins can increase fetal developmental issues
- How many months should I prepare my body for pregnancy?
  - 3 to 6 months
How to Detox During Preconception

• Avoid Toxins in the First Place
  – Household and beauty products
  – Organic fruits and vegetables (dirty dozen and clean fifteen)
  – Water filtration system

• Support Your Liver
  – Exercise regularly
  – Eliminate or reduce the amount of alcohol you consume
  – Maintain a healthy weight and stabilize blood sugar
  – Eat foods with high amounts of antioxidants and anti-inflammatory properties
  – Make sure you are having bowel movements daily
  – Focus on gentle detox
    • Dry brushing, Epsom salt baths, infrared sauna, sweating, and ionic foot soaks

• Stress Relief
Track these things during pregnancy

- Labs
  - Vitamin D levels
  - RBC magnesium
  - Lipid Panel
  - CBC, CMP, blood sugar
  - Hemoglobin a1c
  - Hcg
  - Progesterone
  - Iron panel w/ ferritin
  - Full thyroid Panel
    - TSH, Free T3, Free T4, Reverse T3, Antibodies
Clinical Case Study

- 28 y/o female
- Diagnosed with Hashimoto’s
- Several miscarriages
- Case workup included stool and nutrient testing plus basic blood work labs
- Goal was to focus on optimizing her health 6 months prior to conception and continue to monitor certain markers throughout pregnancy
Clinical Case Study
Thyroid Labs

<table>
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<tr>
<th>Test</th>
<th>Result</th>
<th>Reference Range</th>
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</thead>
<tbody>
<tr>
<td>TSH</td>
<td>2.95</td>
<td>0.40–4.50 mIU/L</td>
</tr>
<tr>
<td>T4, FREE</td>
<td>0.9</td>
<td>0.8–1.8 ng/dL</td>
</tr>
<tr>
<td>T3, FREE</td>
<td>1.9 L</td>
<td>2.3–4.2 pg/mL</td>
</tr>
<tr>
<td>T3 REVERSE, LC/MS/MS</td>
<td>12</td>
<td>8–25 ng/dL</td>
</tr>
</tbody>
</table>

This test was developed and its analytical performance characteristics have been determined by Quest Diagnostics Nichols Institute San Juan Capistrano. It has not been cleared or approved by FDA. This assay has been validated pursuant to the CLIA regulations and is used for clinical purposes.
Protocol we implemented

• Implemented gut healing protocol
  – Addressed digestion and dysbiosis
• Focused on opening detox pathways
• Reset circadian rhythm
• Replenished nutrients via supplements and diet
• Put her on an anti-inflammatory diet
• Optimized other markers on her blood work such as: low iron, thyroid, and vitamin D levels
Questions?

Presenter:
Taylor Dukes, FNP
Phone: 817-330-9848
Fax: 817-813-8095
Email: info@taylordukeswellness.com

US Client Services: 800-522-4762
UK Client Services: 020.8336.7750

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