

EXCLUSIVE LIVE WEBINAR

Nutritional Psychiatry: The Role of Food in Mental Health Treatment

PRESENTED BY

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EARN
1.5 CEUs

March 23, 2023

2-3:30pm ET



Disclosures

- The faculty and planners for this educational activity have no relevant financial relationship(s) with ineligible companies to disclose.
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This activity will also award credit for dietetics (CDR CPEU).

Learning Objectives

1. Counsel clients who may be experiencing depression, anxiety, or other common mental health diagnoses, using a new understanding of the gut-brain connection.
2. Recommend specific nutrients and “focus foods” that play a role in mental health improvement.
3. Explain specific diets, eating patterns, and foods that can exacerbate mental health symptoms.
4. Compile a sample food list and/or recipe ideas that incorporate foods that may help improve the effects of common mental health diagnoses.
5. Collaborate with health care team members to better understand when and how to refer patients to a mental health specialist.



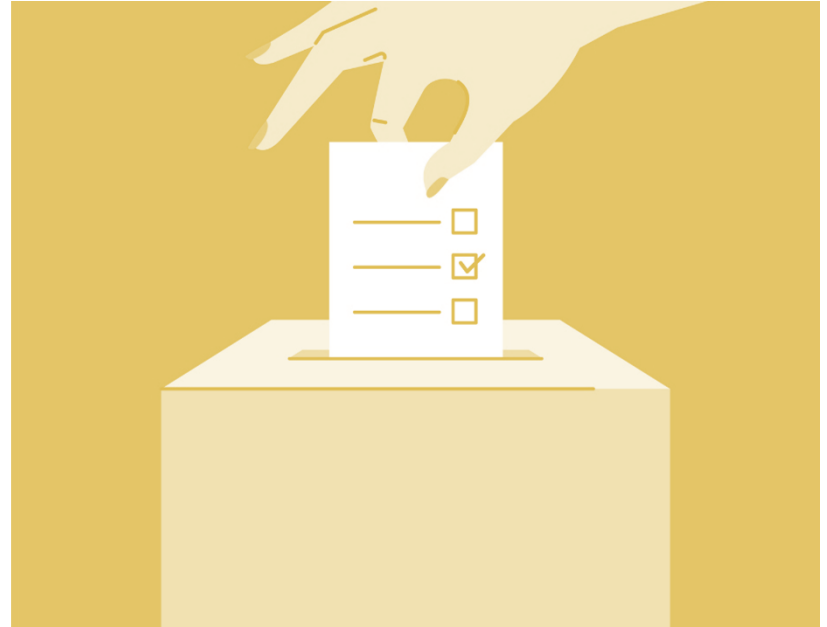
Key Focus Areas:

- 1. Neuroplasticity*
 - 2. Gut Microbiome*
 - 3. Inflammation*
 - 4. Nutrient Density*
 - 5. Food Categories*
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Poll

For patients with multiple physiological and psychological conditions, are you more likely to initially develop a plan of care on your own and with informal input from colleagues, OR do you prefer to go ahead and refer out to a specialty healthcare provider?

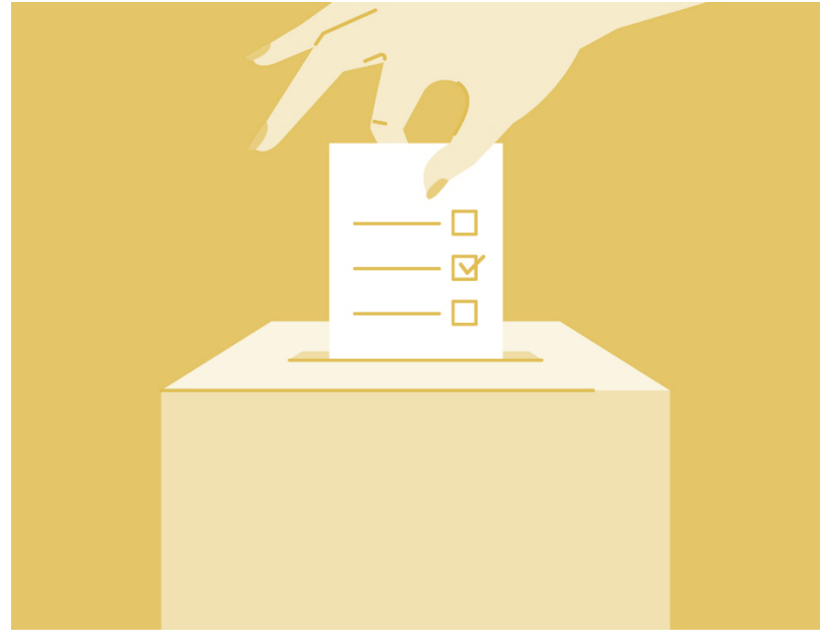
- A. On your own/informal consult with colleagues
- B. Referral to a specialty care provider on the healthcare team



Importance of Inclusion, Communication, and Referrals for Mental Health Patients

Many patients with mental health diagnoses are going to be anxious about coming in for that initial visit, but once rapport is built and they feel safe with a specific provider, referrals and recommendations from that provider can go a long way!

- Two heads are better than one!
- Great minds may think alike, but delivery may be different...
 - This may make all the difference for that anxious, depressed, traumatized (insert diagnosis/symptom here) patient.
 - More treatment options
 - More opportunity for follow-through/follow-up



Gut-Brain Connection & Nutrition for Mental Health



What is the Gut-Brain Connection?

- The enteric nervous system (ENS) "the second brain" and the central nervous system (CNS) are constantly in communication
 - Digestion and mood are interconnected!

"Gut reactions"

CNS = the brain and spinal cord

ENS = two thin layers of millions of nerve cells lining your gastrointestinal tract from esophagus to rectum

ENS-CNS Connection

Therapies that help one may help the other

Gastroenterologists and primary care physicians often prescribe antidepressants to treat irritable bowel syndrome (IBS)

Why don't psychiatrists routinely ask about gut issues?



A Mental Health Epidemic: The Statistics are DEPRESSING!

- Prevalence has increased greatly (and continues) per the World Health Organization (WHO)
 - Estimated that depression/anxiety will be top cause of disability for the coming decades
 - Global Mental Health Pandemic following CoVID-19 Pandemic?
 - Nearly 10x as many people report depression now than 100 years ago
 - $\frac{3}{4}$ patients with depression also have anxiety
- Primal history of "survival"
 - Depressive symptoms in times of physical illness to keep ill patient self-isolated, resting
 - Inflammatory trigger prevalence (stress, high fat/sugar diet, sedentary lifestyles) decreases the utility of this adaptation
 - Isolation with virtual communication is no longer a special case



CASE STUDY

- 45 y.o. Hispanic Male
- Initially seen by Gastroenterology for severe acid reflux and irritable bowel syndrome (IBS) with diarrhea and given clonazepam (Klonopin) 1mg po TID
 - Per patient, never told this medication was an anti-anxiety medication
 - Given to "treat stomach pain and spasms"
- Gastroenterology prescribed without any concurrent treatment from psychiatry (or counseling, nutrition, etc.) x 5 years
- Suddenly told he'd no longer be given refills to this prescription
- Began experiencing benzodiazepine withdrawals
- Presented to our clinic with primary care for his anxiety and stomach pain. Had been completely off medication x 5 days. +tremor, nausea, epigastric pain, diarrhea, and decreased appetite
 - Seizure Risk!

Pharmacological TREATMENT:

Educated pt on gut-brain connection and discussed anxiety link to physiological (GI) symptoms

- Benzodiazepine taper (1mg po BID w/ 0.5mg po qd for breakthrough x 1 month (#75 instead of previous #90), 1mg po qd in am with up to 1mg po qd prn in afternoon/evening x 1 month (#60), then 1mg po qd with 0.5mg po qd prn (#45), now at 0.5mg po BID, sometimes only taking am dosage, using afternoon as prn (#30), will continue taper over next 2 months
- "Start LOW, go SLOW"... also applies to taper, not just titration
- Patient has not been on any GI medications (other than prn over the counter heartburn medications x several years) and continues without now

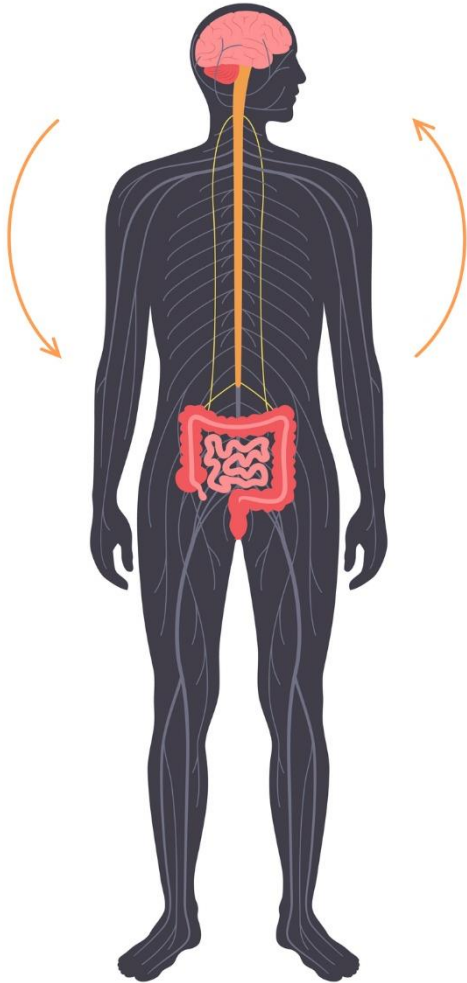




Non-pharmacological TREATMENT:

- Cognitive Behavioral Therapy (CBT)
 - Trauma-based therapy (if hx PTSD and/or certain triggers activate GI sx)
- 4-7-8 Breathing Exercise
- Gentle stretching (i.e., Pawanmuktasana or wind-relieving pose in yoga) to aide digestion
- Exercise prescription and/or more time outdoors
- Dietary modification
- Evaluate environmental stressors and make feasible changes (i.e., relationship repair, work-life balance, etc.)

Hardwired and Signaled...



- Physical connection of intestines to brain via the Vagus Nerve
 - Runs from brain through torso, innervating all organs
- Neurotransmitter/hormones (particularly dopamine and norepinephrine) effect gut pathogens
 - Stress raises norepinephrine/dopamine levels --> growth of certain gut pathogens
 - Stressed individuals are more susceptible to infection/inflammation --> more stress --> spiral of anxiety/depression/physical symptoms
 - Healthy gut microbiome can BREAK the vicious cycle and put up a fight !

What About the Gut Microbiome?

- 100,000 times more microbes in gut alone than there are people on Earth!
- Weight of one person's gut microbes ranges 2-6#
 - Average brain weight is 2.6#
- Do microbes communicate with our brains?
 - Direct a lot of communication between the ENS and CNS
 - Send warning signals about pathogens in gut
 - Neurotransmitter-like chemicals, Hormones, Fatty acids and short-chain fatty acids (i.e., butyrate), Metabolites, cytokines





Feeding the Microbiome...

- Fermentation
 - Process used to preserve food > 5,000 years
 - Kills pathogens, encourages growth of probiotics
 - Different cultures have their own "cultures"
 - Japan: tempeh, miso, natto, soy sauce, etc.
 - Sauerkraut and Kimchi
 - Yogurt and kefir
 - Watch for added sugars (negates probiotic benefit)
 - Removing the fat concentrates the milk sugars
 - Less effective as a psychobiotic
 - Proportion of lactobaccillus is reduced
 - Add vitamin D
 - Kombucha





Where Do Probiotic Supplements Come In?

- Heaviest research done with probiotics in ferments, particularly yogurt
 - Some probiotics available as supplements just easy to manufacture, not necessarily effective, not all "psychobiotics"
 - FDA is not authorized to review dietary supplements in US for safety or efficacy before marketing, including probiotics
 - Ideal dosage (colony forming units or "CFUs") not established
 - Not all CFUs in probiotic capsule will survive once ingested
- Consider storage and expiration date
- Quality Seals
 - GMP "good manufacturing practice" (FDA resp invited to visit premises and approve protocols)
 - cGMP (current)
- Bacteria "naturally" non-GMO, gluten free, nut free, soy free, vegan, etc



Brain and Gut CHANGE is Possible:

- Nothing is a QUICK FIX!
- Gut microbiota change constantly, but mood changes that come with big shifts take time
 - Likely some improvement in mood seen after 2 weeks of healthy, anti-inflammatory diet
- Psychobiotics: Microbes that yield positive psychiatric effects when taken in sufficient quantity
 - **"The Psychobiotic Food Pyramid"**
- Neuroplasticity shows us that brain patterns have the potential to change over time
 - Psychotherapy can promote positive growth and change --> new behavior patterns
- Think about the potential for mental health improvement when these modalities are combined!



"Let FOOD be thy MEDICINE and
MEDICINE be thy FOOD."

-Hippocrates



Focus Foods & Nutrients for Mental Health

Research

Meta analysis of 'healthy dietary patterns' from 17 studies

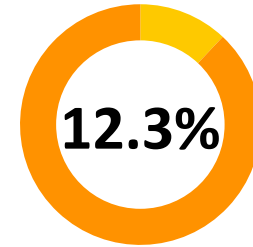
- N=127,973
- Associated with significantly reduced risk of depression
- Similarities in dietary patterns included fish, vegetables, and fruits
- Healthy dietary patterns included = Mediterranean, DASH, and Alternative Healthy Eating Index, Low Dietary Inflammatory Index
- Risk of depression higher with great consumption of sugar-sweetened beverages and pro-inflammatory foods



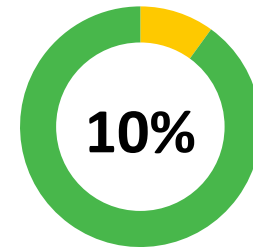
Current Dietary Intakes

- Percentage of U.S. adults meeting fruit and vegetable intake recommendations is low
- 2019: 12.3% and 10.0% of surveyed adults met fruit and veg intake, respectively
 - Hispanic adults had highest fruit intake
 - Adults aged 51 years and older had highest fruit intake
 - Males generally have lower fruit intake
 - Adults living below or close to the poverty level have lowest vegetable intake

Fruit Intake



Vegetable Intake



Nutrients for Mental Health

- Omega-3 fatty acids
- Iron
- Magnesium
- Antioxidants/flavonoids
- B-vitamins
- Choline



Omega-3 Fatty Acids

- For anxiety and depression
 - Those with anxiety and depressive disorders have lower omega 3 FA's and higher omega 6 to omega 3 ratio
- Recommended: 250-500 mg of omega 3s EPA and DHA per day
- Salmon (Atlantic or Chinook), anchovies, herring, tuna, sablefish, mackerel, and other fatty fish
- Walnuts, chia seeds, flax seeds, hemp seeds, algal oil
- Supplements



Iron

- For anxiety and depression
 - Iron deficiency is most common nutrient deficiency worldwide
 - Iron is a cofactor for tyrosine hydroxylase (dopamine) and tryptophan hydroxylase (serotonin)
- Beef, turkey, tuna, eggs, chicken liver, beef liver, lamb, oysters, clams
- Oats, beans, lentils, whole wheat bread, fortified cereals, brown rice, spinach
- Multivitamin



Magnesium

- For depression
 - Inverse relationship between depressive symptoms and magnesium intake
- Sleep deprivation and stress deplete total body stores of magnesium
 - Deficiency symptoms may include agitation, headaches, nausea & vomiting, fatigue, weakness, vertigo
- Pumpkin seeds (roasted), chia seeds, roasted almonds, boiled spinach, roasted cashews, shredded wheat cereal, soymilk, black beans, edamame, peanut butter, baked potato with skin, banana, avocado



Magnesium Deficiency

Magnesium

- Conditions often associated with magnesium deficiency include:
 - Alcohol dependence
 - Migraines
 - T2DM
 - Chronic diarrhea
 - CVD
 - Osteoporosis



Antioxidants/Flavonoids

- For anxiety
 - Elevated cytokines and CRP in PTSD, GAD, panic disorder
- Enhances cerebral blood flow, increased BDNF, protective effect, increased activation of signaling pathways, stimulation of neural regeneration
- Salmon, tuna, mackerel (omega 3 FAs)
- Berries, leafy greens, citrus fruits, beets, avocado, whole grains, legumes, green tea, turmeric



B-Vitamins

Folate

- Needed for metabolic and amino acid synthesis
- Proven mono therapy in depression
- About 1/3 of depressed patients are folate deficient
 - Those with low folate are 6x more likely not to respond to antidepressant therapy and less likely to achieve remission
- Deficiency caused by alcoholism, malabsorption, pregnancy, poor dietary intake
- Beef liver
- Leafy green vegetables, beans, lentils, breakfast cereals, white rice



B-Vitamins

B-12

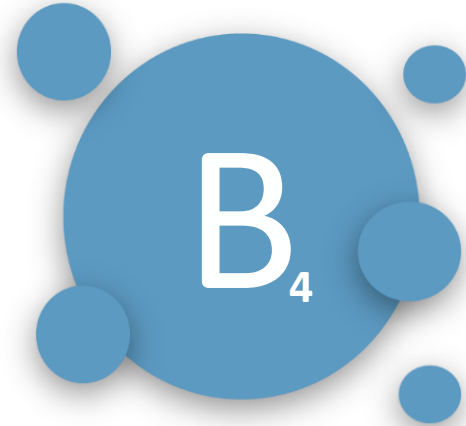
- For depression
- Restriction of red meat and other animal protein sources, can lead to vitamin B12 deficiency and depressive symptoms
- Shellfish, red meat, poultry, fish, eggs, milk, cheese
- Vegans and vegetarians need to consider B12 sources
 - Fortified cereals, nutritional yeast, nori



Choline

For anxiety

- Choline acts as a methyl donor
- Fish, beef, pork, chicken, eggs, dairy product, organ meats
- Broccoli, Brussel sprouts, cauliflower, flaxseed, shitake mushrooms, spinach, lentils, quinoa



Food Choices for Mental Health

Focus on nutrient-dense foods over empty calories

Increase consumption of omega-3 rich foods
PUFAs, essential fatty acids, omega-3s

Increase consumption of fruits, vegetables, whole grains, lean proteins

Limit alcohol and caffeine

Focus on balance of protein, fiber, and fat at meals and snacks for blood sugar stabilization

4-7-8 Breathing Exercise (Relaxing Breath)

Start either sitting or lying down in a comfortable position



Repeat cycle 4 times

Eating Patterns & Foods to Limit for Mental Health



The Standard American Diet is Very SAD...

- High in saturated fats, refined carbohydrates, added sugars
 - High fat destroys gut microbiota
- Low nutrient density (fiber, potassium, magnesium, B vitamins)
 - Fiber can help restore good microbiota
- High and hidden sodium
- Excess caloric intake
- Overconsumption of alcohol



The Problem

Problem Foods:

- EXCESS animal protein (chicken, eggs, beef, pork, fish)
 - Arachidonic acid
 - Proinflammatory
 - Neuroinflammation --> depression
- Alcohol
 - Depressant, interrupts sleep
- Refined carbs/sugars
 - Rapid metabolism --> less glucose for brain use
 - Hypoglycemia --> increased fight or flight response, which triggers anxiety/symptoms of anxiety (elevated HR, shaking, sweating)

Greger M, Stone G. *How Not to Die: Discover the Foods Scientifically Proven to Prevent and Reverse Disease*. Flatiron Books; 2015.

Aucoin M, Bhardwaj S. Generalized Anxiety Disorder and Hypoglycemia Symptoms Improved with Diet Modification. *Case Reports in Psychiatry*. 2016;2016:1-4. doi:<https://doi.org/10.1155/2016/7165425>





Recipes for Improved Mood & Mental Health

Let's Check in...

Food Choices for Mental Health



Reminder... Food Choices for Mental Health

- Focus on nutrient-dense foods over empty calories
- Increase consumption of omega-3 rich foods
 - PUFAs, essential fatty acids, omega-3s
- Increase consumption of fruits, vegetables, whole grains, lean proteins
 - 7-10 servings of fruits and vegetables per day
 - Fatty fish 2x/week
- Focus on balance of protein, fiber, and fat at meals and snacks for blood sugar stabilization
- Share meals with family and friends



Dietary Patterns to Follow

Mediterranean-
style diet

DASH-style diet

Anti-
Inflammatory
diet

Flexitarian-style
diet

Plant-based
diet

Practical Applications/ Recommendations

1. Add leafy green veggies to at least 2 meals per day.
 - Add spinach to scrambled eggs, top sandwiches with leafy greens, roast broccoli or Brussel sprouts for a side dish
2. Choose whole grain options when able.
 - Whole wheat bread for sandwiches, a blend of white rice and brown rice for stir-fry, oatmeal for breakfast
3. Use canned seafood as a more affordable, convenient option.
 - Salmon patties, tuna packets, canned clams added to soup
4. Opt for nuts, fruit, vegetables, and hummus as a snack choice over chips, crackers, and sweets.
 - Pack these items individually as 'snack packs' to make them convenient options

Practical Applications/ Recommendations

5. Increase intake of beans, lentils, and legumes.

- Add to soups, grain bowl recipes, salads

6. Enjoy more antioxidant-rich foods.

- Frozen fruits to make smoothies or add to oatmeal, yogurt, other dishes
- Green tea

7. Add seeds to 1 meal a day for healthy fats, protein, fiber, and magnesium.

- Use on top of oatmeal, salads, yogurt, smoothies, or mix into homemade trail mix



Italian Lentil Soup

- Diet/Mineral: Mediterranean Diet, omega 3 FAs, veggie-forward
- Beneficial for: Depressive disorder
- Why: Studies have shown that those following more of a Mediterranean-style diet showed lower reports of depressive disorder symptoms
- Recipe includes:
 - Artichokes, Tuscan kale, tomatoes, and onions, which are all included in the Mediterranean diet
 - It uses olive oil to increase unsaturated fats
 - Only 1 teaspoon of salt for 4-6 servings, which keeps the sodium content low





Superfoods Smoothie

- Diet/Mineral: Plant-based, zinc, omega 3 FAs
- Beneficial for: ADHD, depressive disorder
- Why: Zinc deficiencies have been observed in ADHD populations and severely depressed individuals
- Recipe includes:
 - Walnuts, cacao powder, pomegranate, and blueberries are all sources of zinc
 - Walnuts and flax seeds are a good source of omega 3 FAs





Mediterranean Pork & Orzo

- Diet/Mineral: Mediterranean, iron
- Beneficial for: Anxiety, depressive disorder
- Why: Iron deficiency has been correlated with higher rates of anxiety/depression in children
- Recipe includes:
 - Pork is a great source of heme iron
 - Spinach contains non-heme iron





Artichoke & Spinach Pesto Pizza

- Diet/Mineral: Plant-based, magnesium, iron, folate
- Beneficial for: Depressive disorder
- Why: Individuals with depression are often low in folate and folate is a proven monotherapy for depression
- Recipe includes:
 - Spinach (*raw*) contains 58 mcg of folate in one cup (about 15% of DV); 1 cup cooked spinach contains 131 mcg
 - Nuts (walnuts for pesto)
 - Omega 3 FAs from walnuts
 - Veggie-forward



Case Study



Collaborative Case Study

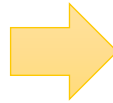
20-year-old Caucasian Female

- Obesity, Hashimoto's thyroiditis, folic acid deficiency, gluten intolerance
 - hx cholecystectomy at age 19
 - Psychologic conversion disorder (non-epileptic seizures), major depressive disorder, Tourette's, social phobia
- Referred to psychiatry after hospitalization to r/o seizure d/o (overnight EEG) showed seizure-like episodes were non-epileptic
 - Psychiatric medications: guanfacine ER 1mg/day, Propranolol 20mg up to TID prn panic/anxiety, and Mirtazipine 15mg/day
 - Previous SAD eating pattern with minimal exercise (full-time work at Wal-Mart as cashier/stock team for pick up orders)
 - Temptation to eat hot-bar food in-store due to convenience rather than to bring lunch
 - Previous labs from primary care with mixed hyperlipidemia, elevated LFTs (US confirmed fatty liver) and low folate/B12/vit D/ferritin
 - Psychiatric NP referred to dietitian for more guidance on diet (and further encouragement on mindful movement!)

Collaborative Case Study continued...

1st appointment: Telehealth (1 day post cholecystectomy)

- Pt reported her appetite has been low for approx. 1 year
- Had a hiatal hernia about 1 year ago
- Had esophagus stretched
- Stated if she ate, she felt more tired
- Allergic to/avoids - nuts, gluten
- **Breakfast:** usually skips d/t feels nauseous after
- **Lunch:** 2 low-fat vanilla yogurts + banana + mozzarella cheese
- **Dinner:** occ. salad with tuna, tomatoes, ranch, cucumber + 2 boiled eggs OR canned chicken OR chicken cooked in air fryer + banana
- **Beverages:** drinks whole milk and water throughout the day
- Supplements reported: iron



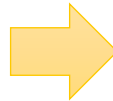
Goals

- Gradually increase portions of food at meals to help increase appetite (with focus on adding in fruits and GF grains)
- Take snack to work
- Build awareness of hunger cues (light headedness, anxiety, low energy) and eat something if feeling these symptoms

Collaborative Case Study continued...

5 weeks later: Follow-up Visit In-person

- **Red meat, POTS dx**
- Reports that appetite has increased over previous 2 weeks and she has better energy
- **Breakfast:** still skips d/t nauseous
- **Snack:** yogurt + fruit
- **Lunch:** protein shake + granola bar
- **Snack:** Salad with tuna, tomatoes, ranch, cucumber (when she gets home from work)
- **Dinner:** turkey burger, chicken sandwich + oat milk
- **Supplements:** folic acid, iron



Goals

- Meal variety - exploring gluten-free grains
- Add in veggies with dinner meal
- Continue with snacks

Collaborative Case Study continued...

4 weeks later: Follow-up Visit

- While pt was in clinic to see Lauren, we scheduled a time to cook some gluten-free grains together for her to try
- Called patient 2 days before for quick check-in...she has been trying more gluten-free pasta recipes at home and really enjoying them
- Cooked quinoa and brown rice together in clinic and tried some GF snack options
- Pt reports she is feeling much better since cutting out gluten and is eating more consistently from day to day.
- She has been exploring different foods with friends at church and really likes cooking at home



Think About It...



- What are we feeding most of our hospitalized patients with (or without) known mental illness?
- How many of our patients who work factory line jobs, construction, or in the food industry have adequate time and environment for a meal break during their shift where they can think about WHAT they are eating?
- What if we created more awareness and found a way to make fresh produce more available to those on fixed incomes/receiving food stamps?
 - "Food Pharmacy"
 - Food as medicine

Never Underestimate...

...The power behind a dietitian referral for the psychiatric patient!

- Extra encouragement
 - Small, feasible, foundational changes
- Nearly ALL patients with psychiatric diagnoses need guidance on better snack, meal, and meal preparation choices
- Decreased or increased appetite
 - Medications and metabolic side effects
 - Inactivity and weight gain OR loss
 - Reframing mealtimes
 - Food as a health ritual and social opportunity

What patients DON'T know CAN hurt them!

Let's Hear From You...

What strategies can you use to advance interprofessional collaborative care for patients?



Putting It Into Practice

- Mediterranean-style diet with focus on anti-inflammatory foods
- Add in fermented foods
- Focus on overall diet and increased consumption of nutrient-dense foods from a variety of food groups
- Focus on non-pharmacological interventions
 - 4-7-8 breathing
 - Mindful movement
 - Meditation



Questions?



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EXCLUSIVE LIVE WEBINAR

An Interprofessional Approach to the Non-Pharmacologic Management of Postural Orthostatic Tachycardia Syndrome (POTS)

PRESENTED BY

Cheryl Harris
MPH, RDN, LD

March 29, 2023
2-3:30pm ET

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