



NUTRITION CONNECTION

LIFESTYLE INTERVENTIONS TO COMBAT METABOLIC SYNDROME

BY KRISTIN KLINEFELTER, MS, RDN, LDN

I RECALL SEEING THE CONFERENCE TITLE AND THINKING: *this sounds like some kind of futuristic sci-fi problem.* The conference was about the new ICD code 277.7: Dysmetabolic Syndrome X. I reviewed the criteria for diagnosis and did a mini-chart review, the kind where you requested paper charts from medical records and manually reviewed them with paper and pen, because it was the pre-electronic medical record years. I looked at every patient that was on my schedule for the previous three weeks. The results of my paper chart audit were shocking to me: 100 percent of my patients met the criteria for this new diagnosis! It was decided; I needed to attend this training to see what we could do in my department for our patients.

The conference was informative and helpful. Mostly, I walked away feeling confident that I had the information and skills to help people with this diagnosis. Nothing had really changed. I was working with individuals to assess their current lifestyle and educating them on balanced nutrition and movement to manage their high blood pressure, cholesterol, blood glucose levels, and weight. The only difference was that now I had a billable code to help the patients before they were diagnosed with type 2 diabetes.

We got to work, starting the first prediabetes and metabolic syndrome clinic in the system at the time. The team consisted of me (a registered dietitian), a fitness trainer, a nurse practitioner, and a mental health provider. Our patients came every three months for labs, education, cooking classes, and therapy. Our goal was for the individuals to develop healthy lifestyles to prevent type 2 diabetes and complications from these chronic diseases. The action steps were not dramatic. They were what we still recommend for almost all people to incorporate. In fact,

we all should work towards these lifestyle changes, even if you are at low risk for what we now call metabolic syndrome.

Before you set this article aside because you think the information doesn't apply to your current position of employment, I have some news to share. We *all* are at risk for metabolic syndrome! Whether you work in schools, corrections, long-term care, acute care, or in a completely unrelated field, there should be at least a few tidbits of information that are helpful in practice or your personal life in this article.

First, let's review the criteria for diagnosis of metabolic syndrome. The term refers to a combination of medical conditions that increase the risk of heart attack, stroke, and type 2 diabetes. The conditions include high blood pressure, elevated glucose levels, elevated triglycerides, low levels of HDL (the "happy, healthy cholesterol"), and central obesity. The causes of these conditions are under constant study, but much focus is on insulin resistance, causing inflammation and elevated glucose.

The current criteria, from the National Institutes of Health guidelines using ICD-10 code E88.81, states that a person who has three of the following five traits has metabolic syndrome:

- Large waist — A waistline that measures at least 35 inches for women and 40 inches for men
- High triglyceride level — 150 milligrams per deciliter (mg/dL) or higher

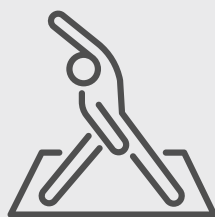


- Reduced high-density lipoprotein (HDL) cholesterol or “happy, healthy and good” cholesterol — Less than 40 milligrams per deciliter (mg/dL) in men or less than 50 mg/dL in women of high-density lipoprotein (HDL) cholesterol
- Increased blood pressure — 130/85 millimeters of mercury (mm Hg) or higher
- Elevated fasting blood sugar — 100 mg/dL or higher

Note that if a person is taking medication to control any of the aforementioned factors, they still meet the criteria for diagnosis—even if their numbers are controlled with the medications.

TREATING METABOLIC SYNDROME

Treatment of metabolic syndrome involves taking steps in many areas of a person’s lifestyle to improve



RESEARCH HAS SHOWN

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outcomes. As with all health education, we assess where the person is now, and take productive, realistic steps in the right direction versus dramatically and unrealistically changing for a short period of time.

Movement (aka exercise)

Research has shown that as little as 150 minutes of exercise per week can prevent type 2 diabetes, improve mental wellbeing, and aid in weight loss. This is 22 minutes of exercise at a moderate pace (i.e., walking like you are late for a meeting and need to hustle to get there) every day. This is where I remind my clients and students to look at their screen time. Most people can fit 22 minutes of movement into their day. There is also good news...you can split this up into two, 11-minute brisk walks! In addition to your 22+ minutes of daily movement, you should limit your

sitting to less than six hours per day. You may have heard the research about “sitting is the new smoking,” which means that if we sit for more than six hours each day, our health outcomes may be as poor as a person who smokes. We can encourage our clients to set timers to move for 2-10 minutes out of every hour. This is where a smart watch or pedometer can be helpful as well.

Sleep

Poor sleep habits can increase a person’s risk for metabolic syndrome and related diseases such as heart disease, diabetes, and even Alzheimer’s disease and certain cancers. Poor sleep is defined as less than 7-8 hours of sleep per night. Sleep disorder diagnosis and treatments are often part of overall management of metabolic syndrome. Dr. Matthew Walker, sleep researcher, has summarized these health risks related to poor sleep in his book *Why We Sleep*. He is also interviewed in a number of podcasts and articles if you want to learn more.

Stress Management

Stress has indirect and direct implications on our overall health. For example, if a person is chronically stressed, they are exhausted and lack the motivation or executive planning to take steps towards good health. Lifestyle change may be completely overwhelming to them. In addition, when our body experiences chronic stress, we have increased levels of stress hormones such as cortisol and adrenaline. Cortisol has been known to increase inflammation and raise the hunger hormone ghrelin. In addition, increased cortisol levels will prompt the body to accumulate adipose tissue (fat) around the middle of our bodies, which brings us back to one of the criteria for a person having metabolic syndrome. Stress management therapy may include meditation, gratitude, cognitive behavioral therapy, exercise, and life coaching to directly and indirectly reduce the effect of stress.

Quit Smoking

Smoking is still the number one risk factor for heart disease. Simply put: do not smoke or use any form of tobacco. If you currently use tobacco products, seek treatment to stop.

Weight Loss

Most research, including the Diabetes Prevention Program (DPP) Research Group study in 2002, has suggested that losing just 7 percent of your body weight can reduce risk of diabetes and heart disease. It is still recommended that people make realistic lifestyle changes to reduce their weight by 7 percent. Avoiding fad diets and products, and sticking to changes that you can maintain for the rest of your life, are keys to successful weight loss. The lifestyle intervention arm of the DPP Research Group study focused on this 7 percent weight loss, and lifestyle changes resulting in the reduced incidence of diabetes by 58 percent.

Nutrition

Plans such as the DASH diet (Dietary Approaches to Stop Hypertension) and the Mediterranean diet are evidence-based nutrition lifestyles to manage all of the aforementioned criteria. There is also a combined DASH/Mediterranean plan that we will explore in depth now.

Specific Recommendations of the DASH/Mediterranean Diet

Countries surrounding the Mediterranean Sea including Greece, Italy, Egypt, and France—to name a few—have diet components that should be replicated in our operations. Their traditional diets include healthy fats like olives, a variety of fruits, vegetables and whole grains, and lower intakes of red meat and processed foods than the Standard American Diet (SAD). The DASH diet focuses on whole grains and a high intake of fruits and vegetables. As with all evidence-based diets, amounts of each serving should be individualized based on needs. Here are the recommendations for the DASH/Mediterranean diet:

Daily:

- Whole grains: 4 or more servings
- Fruits: 3 or more servings
- Vegetables: 4 or more servings
- Healthy fat: 3-4 T
- Seasonings: unlimited (salt-free)
- Dairy: 2-3 servings low-fat (skim or 1% milk, Greek yogurt)

REDUCING ADDED SUGAR
helps people stick with
nutrition guidelines, may
naturally limit less-nutritious
options, and potentially
supports better blood sugar
control and overall health.

Weekly:

- Fish and seafood: 2-3 servings
- Nuts: 3 servings
- Red meat: 3 oz or less
- Egg yolks: 3 or less (unlimited whites)
- Nuts/nut butter: at least 3 servings
- Sugary treats: less than 3 times

Healthy Fat

Not all fat is created equal and the DASH/Mediterranean diet is proof of this. This plan recommends at least 1-4 tablespoons of olive oil per day. Olive oil's profile is high in unsaturated fat, specifically monounsaturated fat, which if used to replace saturated fat in one's diet, significantly reduces cholesterol and risk of heart disease.

One tablespoon of olive oil contains 9.86 grams of monounsaturated fat (MUFA), 1.42 grams of polyunsaturated fat, and 1.86 grams of saturated fat (USDA). Olive oil should be used when sautéing vegetables and proteins as well as added to recipes that require fat such as homemade dressings. Note that 1 T. of olive oil contains 119 calories, making it a calorie-dense food. Other healthy fats on the Mediterranean diet include omega-3 fatty acids that are helpful in reducing inflammation and cholesterol. Good sources include fatty fish such as salmon, mackerel, and tuna. Seafood, nuts, seeds, and legumes also have polyunsaturated fat (PUFA), which promotes healthy cholesterol levels. Note that some seafood should be moderated for young children and pregnant women due to levels of mercury. Local agencies will have specific fish consumption guidelines for your area. In summary, we want to recommend the PUFAs, MUFAs, and omega-3s—the tasty acronyms that benefit our health!

Foodservice Implementation

Whether you do a complete menu revamp, or simply start with one meal per week, it can be possible to implement the DASH/Mediterranean diet.

The Staple Ingredients

- Olive oil
- Chia & flax seeds



OLIVE OIL
should be used when sautéing vegetables and proteins as well as added to recipes that require fat, such as homemade dressings.

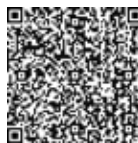
- Chickpeas
- Fatty fish (salmon, mackerel, tuna, herring)
- Variety of fruits and veggies
- Spices (oregano, basil)
- Whole grains (bulgur, farro, whole grain bread, quinoa)
- Avocado

Bravo for Breakfast

- Add veggies. No one said you can't have salads for breakfast! Try the Greek Blueberry Peach Salad recipe provided. Adding veggies to eggs or a smoothie can kick-start the necessary intake of 4+ veggies per day.
- Use non-animal proteins such as nut butters.
- Go Greek! (Yogurt) for protein.
- Offer lox and bagels for omega-3s.

Reduce the LDL with Lunch

- Offer tuna lettuce wraps to add up to the 2-3 servings of omega-3s weekly.
- Celebrate meatless Mondays with a bean salad as your protein.
- Use avocado on sandwiches instead of butter or mayo.



REFERENCES

Scan QR code to view the list of resources for this article.


Dine Smart at Dinner

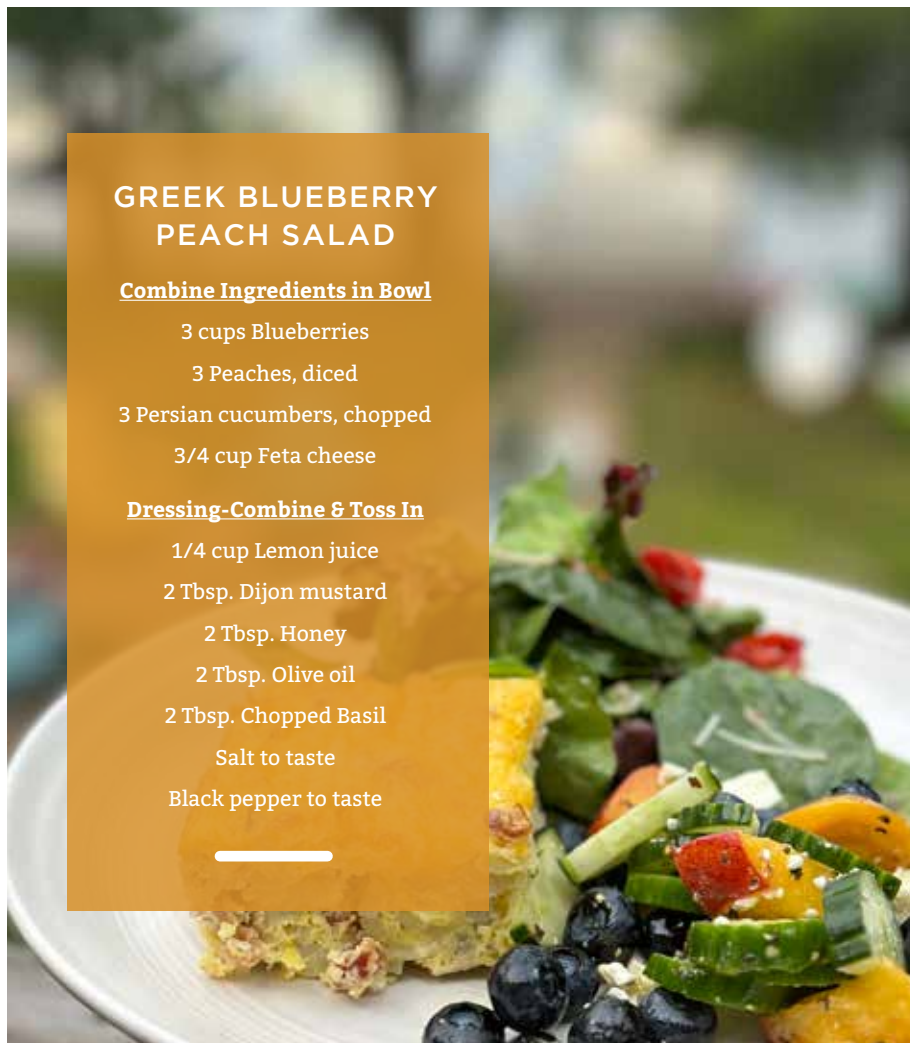
- Serve meatless pasta with olive oil, pine nuts, and veggies.
- Add Mediterranean-themed meals on your monthly menu cycle.
- Use Greek yogurt in place of sour cream for toppings.
- Substitute ground turkey for ground beef in recipes.

Superfood Snacks

- Add nut butter to an apple.
- Create chia pudding for omega-3s.
- Offer hummus with pita bread and veggies.

YOU CAN DO THIS AT HOME

It's never too late to implement realistic lifestyle changes that are beneficial in preventing or managing metabolic syndrome. More movement, better management of stress and sleep, and healthy diet modifications can be incorporated for your clients and your own personal health. People can start with simple steps that will benefit health, no matter what stage they are in. Now wouldn't it be nice if we could do a staff in-service in say, Greece? "Yamas!" This Greek word for "cheers" means *To our health!* 



GREEK BLUEBERRY PEACH SALAD

Combine Ingredients in Bowl

- 3 cups Blueberries
- 3 Peaches, diced
- 3 Persian cucumbers, chopped
- 3/4 cup Feta cheese

Dressing-Combine & Toss In

- 1/4 cup Lemon juice
- 2 Tbsp. Dijon mustard
- 2 Tbsp. Honey
- 2 Tbsp. Olive oil
- 2 Tbsp. Chopped Basil
- Salt to taste
- Black pepper to taste

Recipe and photo credit: Megan, Triple C Company for 3 Sisters Retreat



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Kristin Klinefelter has been working with patients who have metabolic syndrome since 1998, well before they made it an official diagnosis. She focuses on meeting the patient where they are to make realistic lifestyle changes to prevent or manage the disease.

CE QUESTIONS | NUTRITION CONNECTION



This **Level II NUTRITION** article assumes that the reader has a thorough knowledge of the topic. The desired outcome is to facilitate application of knowledge into practice by drawing connections among ideas and using information in new situations.

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where education advances performance

Reading *Lifestyle Interventions to Combat Metabolic Syndrome* and successfully completing these questions online in the ANFP Marketplace has been approved for 1 hour of continuing education for CDM, CFPPs. To earn 1 CE hour, visit www.ANFPonline.org/market and select **Edge CE Articles** within the Publications section. Purchase the article and complete the quiz.

1. A person must have all five of the criteria to be diagnosed with metabolic syndrome.
 - A. True
 - B. False
2. Joe is managing his cholesterol, blood sugar, and blood pressure with medications. Which of the following statements is *true* about Joe?
 - A. Joe does not have the diagnosis of metabolic syndrome
 - B. Joe has metabolic syndrome that is well controlled and he still should maintain a healthy lifestyle
 - C. Joe doesn't need to make lifestyle changes since his numbers are good
3. Good sleep is defined as:
 - A. Feeling rested even if you only get 4 hours per night
 - B. Getting more than 10 hours of sleep each night
 - C. Getting 7-8 hours of sleep each night
4. Research has found that this amount of exercise is adequate to prevent type 2 diabetes:
 - A. 150 minutes per week
 - B. 15 minutes per day
 - C. 30 minutes, every other day
5. Which diet is evidence-based for prevention and/or treatment of metabolic syndrome?
 - A. The keto diet
 - B. The cardiac diet
 - C. The DASH/Mediterranean diet
6. What are key components of the DASH/Mediterranean diet?
 - A. Low carbohydrates and high saturated fat
 - B. Healthy fats, whole grains, fruits and vegetables, lean proteins
 - C. Low fat, high protein, no sugar
7. Which of the following meals represents the DASH/Mediterranean diet?
 - A. Grilled salmon, mixed greens with olive oil, quinoa, sweet potato and beet bake
 - B. Sirloin steak, baked potato with sour cream, corn
 - C. Chicken fried in vegetable oil, sweet potato fries, lettuce salad with ranch dressing



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