

Welcome everybody. We are fortunate today to have Ruth Clark give a lecture. She is a registered dietitian at the National Intrepid Center of Excellence at Walter Reed National Military Medical Center. She provides nutrition information. She was an active duty Army dietitian, a graduate of the Walter Reed dietetic internship. She received her Master's in nutrition from University of Maryland College Park where she spent two years working in a biochemistry lab studying nutritional genomics for cancer prevention. Her current position focuses on medical nutritional therapy for optimizing health and rehabilitation after brain injuries. With that, I'm going to turn it over to you.

Thank you. It is my pleasure to be able to present today. Nutrition therapy for pain optimizing nutrition to maximize healing potential. This is the disclosures that I will read that certifies that I, Ruth Clark have not nor has my spouse or partner or any immediate family member had it in the past 12 months I expect to have in the upcoming months, any financial relationship or gift in kind with industry that is relevant to the subject matter of the presentation. This certifies that the views expressed in this presentation are those of the author and do not reflect the official policy of the Department of Army, Navy, Air Force, Department of the Defense or US government. Nutrition therapy for pain management. Learning objectives I will be presenting. Nutrition therapy for pain management, learn how nutritional deficiencies and overall quality of thigh can affect pain. Understand how to assess nutritional status. Learn practical nutrition interventions to initiate with patients to improve overall diet quality and optimize nutritional status. Hopefully give you some tools to help you with your practice and to help identify patients that might benefit from nutritional therapy. Nutritional therapy is a promising treatment for chronic pain with an increasing number of studies that are focused on the area. It is an exciting time to be studying nutrition and chronic pain. There is a lot of research that. There is a lot of convincing research that we look at improving chronic pain when it comes to arthritis and losing weight for chronic diabetics. A lot of these chronic pain can sometimes have a recall is identified in the diet, and identified that and treating that through nutrition therapy has a lot of really exciting promise. I hope that by the end of the call, you will consider nutrition therapy as a part of the multidisciplinary plan for chronic pain. I worked at the national Intrepid Center and I work with service members who have had multiple traumatic brain injuries. Mild traumatic brain injuries and also moderate and severe a lot of them have chronic headaches, chronic musculoskeletal pain and a lot of the effects of a career that has chronic stress that these are the goals of nutrition therapy for the pain management of the population that I have. I want to identify potential nutritional deficiencies, we note that nutritional deficiencies of the 12 [Indiscernible] there are others, but they tend to be the more common ones. Can present as 50 and pain. We want to try to identify those nutritional deficiencies and correct them and hopefully see improvement. I want to take an individual assessment of the service member and try to find ways that we can optimize the nutritional status, in order to maximize healing potential. In addition, I want to encourage them to adopt healthy lifestyle interventions to prevent entry core morbidities.

We know these patients the pain tend to prevent multi-morbidities and having injury such as a traumatic brain injury can increase the likelihood of good , developing issues due to all of the medications. It is likely that they have weight gain and have other morbidities. Nutrition therapy can help identify all of those and decrease the additional comorbidities. Also focus a lot on education to support self-management in order to help them be successful over the long term with some of these nutritional recommendations. How to identify nutritional deficiencies in the setting of overall quality of diet? I want to hone in on that setting of overall quality of diet. A bit of my bias might be from my masters degree focusing on the logistics activity of multi-[Indiscernible]. I tend to be very biased in that sense of overall diet quality is much more [Indiscernible] and I hope I will convince you. I hope to give you tools to help identify patients that might benefit from a nutritional intervention. There are lots of dietary's, dietary tools you can use. The USDA has many tools and they can be good at identifying patients who might have malnutrition. For my practice, I tend to find the most helpful is a 24 hour diet recall followed by a [Indiscernible]. I will ask the patient with the jury for breakfast? What did you have after that? What are you snacking on between meals? What are you drinking during the day? I find it is a lot more helpful to be more specific with the questions. I tend to not find it helpful to ask the patient do you eat five servings of fruits and vegetables a day because the strong social pressure is there to say yes I eat five fruits and vegetables a day because they know that is what you want to hear. I really find it much more helpful to say, what did you have for dinner last night? What is your favorite breakfast, what did you have for lunch yesterday? I will write those down and then I will ask them do you eat lots of fruits and vegetables and they will often say yes. Then I will say yesterday you had one serving of baby carrots and maybe one banana. How can we work on improving your fruit and vegetable intake. I find that to be much more successful. I followed up with some of their favorite roots and vegetables. And how frequent do you eat them? I also find it helpful to ask them about theory products specifically because people who tend not to drink dairy products, tend to have low vitamin D status because it is the main source of vitamin D. I also like to ask about their dairy products in case [Indiscernible] it that very easy question, what did you read yesterday and those types of vegetable questions can give you a really good understanding of their dietary habits. And help you digging into what their needs are. Here's a 24-hour recall from a real patient. For breakfast he had an impressive opening of butter and jelly sandwich, orange juice, and a protein shake. For lunch at tuna sandwich. Dinner he had pizza or chicken based person entrée he likes to snack on potato chips and eat fried foods regularly. Does anything stand out to you?

Where are the fruits and vegetables? Believe protein? The whole grains? Think about the vitamins, minerals and final nutrients missing from the service member diet. Think about the colors of these foods, very monochromatic. It is monochromatic and wears the color and fighter nutrients that give you helpful facts that you can find in the standard vitamin. This is a common dietary recall of the patient population I serve. We know that the standard American diet is based on processed meat, sugary foods, refined grains with the low intake of fruits and vegetables. Tends to be high and alter process to use. According to a

2016 study and the BMJ journals, Americans get 50 percent of all calories from ultra-process. Foods. This is a common starting place with the patients I see. This is where they start and this is what we have to work on to try to improve their diet. Potential nutritional deficiencies to keep in mind. Beef patients are more likely to have nutritional deficiencies. Deficiencies of magnesium, vitamin D, B vitamins, essential fatty acids, think and iron can present to, fatigue and headaches. Fighter nutrients that you can't find in a pill, what are their favorite fruits and vegetables? Are they eating a monochromatic diet? We know that deficiencies of magnesium, vitamin D essential fatty acids and others can prevent pain, fatigue and headaches. We want to try to get them to eat more whole foods that you can get those wonderful fighter nutrients. I find it helpful to start with the fruits and vegetables if they like and work from there. Move away from the ultra-processed American diet. When it comes to optimizing nutrition status to maximize healing potential, I asked those questions to get a sense of where they are coming from, what is their habits, what is there routine and I can start working on ways to improve that. The diet that has shown a lot of promise when it comes to improving chronic pain is the anti-inflammatory diet. You may have heard it as the Mediterranean diet. They are almost the same thing. The standard American diet causes an excessive production of permanent inflammatory mediators and reduces the body's anti-inflammatory responses. Decades of research on chronic pain have led to a focus on the importance of intent oxidant and anti-inflammatory qualities of diet to reduce pain and improve overall quality of health. This is the main diet that I use when I'm working with my patients. Getting started with the anti-inflammatory diet I work with individuals to increase fruits and vegetables at every meal as well as decreasing red meat consumption. Increased fish intake. Dairy products occasionally such as Greek. It, Greek yogurt and low-fat cheeses. People will say I just bought a cow and they will have an entire cow in the deep freezer in the basement so they are a challenge trying to encourage some people to decrease the red meat. Particularly grain fed red meat tend to be particularly inflammatory. Dairy products the standard American diet has been ingrained to have milk with meals. The Mediterranean diet tends to recommend a moderate intake of dairy products. I do recommend Greek yogurt particularly good, and low-fat cheeses. Increase intake of whole grains such as quinoa, Farrow, Bolger, oatmeal, brown rice. Eat fresh fruit for dessert and save ice cream or cookies for special occasions.

As a way to decrease as much simple sugars that we tend to have been the standard American diet. Having fresh fruit and saving ice cream for special occasions. Fruits and vegetables provide fiber. Focus on both of the equations. It doesn't appear to be benefit, beneficial to increase fruits and vegetables. Increase fruits and vegetables, fiber, plant-based proteins, herbs and spices and omega-3 fatty acid. Decrease animal protein grain fed beef, trans fats, saturated fats, omega six fatty acids, and simple sugars. These are some of my favorite anti-inflammatory spaces that I recommend.

Spices that I recommend. They have lots of flavor. Paprika, rosemary, ginger, tumor X the and cumin are some anti-inflammatory spaces that have health benefits. Dietary antioxidants are the second part of the anti-inflammatory diet. Oxidative stress may be an underlying mechanism for a variety of pain related symptoms. It is important in the traumatic brain population as well because we know oxidative stress

results in brain injury. Increasing antioxidants can be an incredibly important and effective treatment therapy. Current research is inconclusive as to whether antioxidants obtained through the diet can influence those. Intake of any antioxidant tends to yield disappointing results but improving the overall quality of diet tends to work better possibly due to the synergistic activity of multiple antioxidants that are included in an overall healthy diet. We want to see the beautiful colors of the multiple fruits and vegetables. This tends to improve the clinical outcome of dietary intervention. So foods that are high enough in antioxidants to increase in diet. Foods high in antioxidants to increase in your diet. Some vegetables are artichoke hearts, broccoli, green leafy vegetables, sweet potatoes, colorful peppers. Lots of nuts such as almonds, flax seeds. Fruits such as berries, tart cherries, grapes and kiwi. Whole grains such as oatmeal and quinoa. Dark chocolate. Green and black tea, also white and long tea.

Tea has lots of health benefits.

Tea has lots of health benefits. I tried to encourage people to show them that the anti-inflammatory diet is not hard or complicated. It is focused on whole foods and realtors just trying to get away from some of the ultra-processed foods which can be a challenge but it is doable. Here's an example of a day on the anti-inflammatory diet. Breakfast is one cup of Greek yogurt with three quarters cup berries and one quarter cup walnuts. A snack is one ounce of low-fat mozzarella cheese and 15 grapes. Lunch is a salad with vegetables and grilled chicken breast with olive oil vinaigrette. One cup lentil soup or baby carrots. A p.m. snack can be a cup of green tea with fresh fruit. Hydration is essential. Dehydration can worsen symptoms such as headaches and fatigue. Primarily water, decrease soda and sugary beverages. Carry a water bottle with you throughout the day and measure quantity. Men should drink 13 cups per day or 104 ounces. Women should drink nine cups or 72 ounces. Caffeinated beverages interrupt your sleep and then you are tired the next day. It is a vicious cycle that is challenging to get away from them. I definitely believe that you should try to bring a way to hydrate during the day with water. Institute of medicine recommendations as mentioned drink 13 cups per day women should drink about nine cups or 72 ounces per day. About half of your body weight in ounces of water per day and be more active and hot it is outside, a little bit more. That brings me to the challenge. Motivating patients to shift away from the standard American diet and towards a more whole foods diet and toward an anti-inflammatory diet. There are two parts to the problem. Addressing the educational deficit, deficit of patients. Addressing the barriers to implementation of the diet. Motivation, access to healthy foods, social support, lack of time, no prior cooking or food preparation experience. I'm trying to teach them how to choose healthier options when they are dining out because they don't have any cooking ability. That will guide my practice of how I'm going to try to get them to move toward a whole foods diet. Some of the practical nutrition interventions that I used to try to help optimize the nutritional status of these patients. How do we bridge the gap between knowledge of healthy eating and the behavior of healthy eating? One of my favorite things to do with my patients is help improve consistency of diet. There are benefits to meal planning. It helps improve the consistency of your diet. Let's eat meals outside of home. Set patients up for success by having healthy foods on hand.

The more at home because you are more intentional about your shopping at the grocery store so you can eat less outside of the home. It can set patients up for success by having healthy foods on hand. If you have healthy foods in the house, you're much more likely to eat healthy and that's what I tried to educate them on.

This is a handout I give to them. Step one is brainstorming healthy meals. Attempt to find it is successful with brainstorming them when you are in a good place and what are you eating and is it healthy and your favorite things to eat? I asked them for their favorite healthy meals and I will give them some examples and see if they would be interested in trying some of these recipes that [Indiscernible]. Here's a calendar and I asked them what are the meals that you most struggle with? Some people say i.e. healthy breakfast and lunch, but dinners go off of the rails.

It is appropriate to address this with the patient and see where it is they need the most help. Sometimes it is all three meals. But we made them where they are. Planning ahead so you have food to grab and go.

Book cook on the weekends to set you up for success during the week. Build your grocery list and I will give them examples of some of the staples I recommend having in your kitchen. Healthier forms of vinaigrette, olive oil, the quinoa, the chicken breast on a weekly basis. Maximize their time at the grocery store and keep the healthy foods on hand. It can be a helpful exercise to work through with patients trying to help them set themselves up for success and give them more motivation for continuing the healthy lifestyle. Making it more long-term. I find that social support is so important. Include family, friends and or coworkers as part of their lifestyle changes. Those 10 to the, those tend to be the patients who are successful. Cook healthy meals for the whole family, try not to be a short order cook. Find someone to exercise with, join hiking or walking club, an exercise program that links you with friends as healthy competition. I want to set them up for success as much as I can come and bringing other people along and encouraging them to reach out to family, friends or coworkers as part of these lifestyle changes can help them be more successful. I recommend to cook healthy meals for the whole family. Everyone is then eating in a healthy manner. Had a workout buddy, have a workout buddy which will increase you to be, it will help you be more successful. Here are some lifestyle interventions to help prevent or treat comorbidities.

Dietary patterns that address chronic pain also seem to have a positive impact on comorbidities including obesity, type two diabetes, cardiovascular disease and depression. Weight loss has been associated with reduced pain in arthritis and obesity. Weight loss has been associated with reduced pain in arthritis and obesity. Nutrition to help with sleep. Chamomile tea at bedtime, managing

GERD, mealtime, overall quality of diet. Encouraging regular activity to support sleep and weight loss. I prioritize nutrition to help with sleep. A significant symptom of chronic inadequate sleep is pain and presents as pain, anyway we can improve sleep is really important. I recommend chamomile tea or any kind of other sleepy time type tea before bed as a part of their golden hour trying to prioritize sleep. I want to be aggressive about getting GERD under control which in turn fuels, interferes with sleep. A number of studies are looking at how the overall quality of diet can help improve sleep. There have been studies that show those who have been improved quality of diet tend to get more

restorative sleep. I would like to share some of the noteworthy resources that I find helpful. Take a look at your screen for the information. There are also resources on how to eat the Mediterranean diet. I encourage you to go to the website and look up, look up some of the resources. Consult your local registered dietitian to help with nutrition therapy for decreasing chronic pain and addressing comorbidities like obesity, diabetes and heart disease. That is my presentation. I hope you found it to be informative, and found a way you can incorporate some of these suggestions. Thank you.

Thank you but that was a phenomenal presentation. I am sure that many of us will be going through this multiple times to pull up some of the information. I have a couple of questions. One of them is supplements. You put up a beautiful [Indiscernible], but I am wondering what about to break ,

Turmeric tablets? I deftly have a food first philosophy when it comes to most supplements and nutrition therapy. That is why I put up the slide with all of the herbs and spices that I recommend incorporating into your diet. For the most part, I definitely recommend improving your overall quality of the diet is much more beneficial than adding a supplement. In certain cases, individuals not able to meet nutritional needs, supplementation may be appropriate but it is a very [Indiscernible]. It is a great way to incorporate it into your diet.

Thank you. Another question that I have or a comment. I like your statement of don't be a short order cook. [Indiscernible].

Having children eat a proper diet go such a long way, and that idea of a short order cook leads to [Indiscernible]. It is important. Any thoughts on that about how we bring in the family? Back often times especially when you are dealing with apparent intends to put the needs of the children above their own, I often encourage them to focus on their diet as a form of self-care. I can also encourage parents to eat healthier to model healthy eating for their children because I know they want to do what is best for their children. So much research has been done which showed that family meals and healthy family meals are incredibly important for teaching kids healthy eating habits. Which translate into healthier kids as they age. Often times the. Will pay more attention to what that means to them. Modeling healthy eating teaching kids how to eat healthy by you yourself eating healthy, and incorporating it as a whole family is incredibly important.

Teaching kids how to eat healthy you have to model it. It can be done through brainstorming, healthy foods starting at the juice they're willing to eat and working from there. Trying to focus more on those, and pick your battles when it comes to feeding your family. For the most part, the routine of the household should be family meals centered around healthy eating habits to model your children for healthy eating. >> That was a beautiful lesson that we can take with us when we leave today. We want to do what is best for our children. We can make more long-lasting changes versus the short order cook/term term , short-term. I wanted to conclude with your thoughts on hydration. Something that we really have not put too much emphasis on what we talk about healthy nutrition and healthy [Indiscernible]. I know you mentioned it several times, can you just talk to us a little bit more about the importance and why that is ? >> I am always surprised at how many people just don't have water on hand

and don't have it as a habit to maintain hydration throughout the day. A huge complain of the people I see at work is chronic headaches and chronic migraines. Dehydration can be a trigger for migraines and for headaches. Kind of the now hanging fruit something that is easy to start working toward decreasing the frequency of headaches staying properly hydrated.

Proper hydration is incredibly important for brain health, kidney health, digestion, skin health it is just whole body incredibly important to stay hydrated. We tend to allot more, we tend to have more soda. I encourage my patients to do the sparkling water, the flavored bubbly waters do fruit infused waters. Everything should be water-based. They've done studies that show athletes performance goes down when they are dehydrated. Ideal with cognitive health and optimizing performance if you are dehydrated, the brain can't focus on a task as well. One of the first goals that I tend to set for patient is make sure you have a water bottle and you're trying to stay optimally hydrated throughout the day.

It is important for overall health and wellness and brain function and all kinds of things.

Thank you so much for this informative talk. We appreciate it. We look forward to more talks from you in the future. Thank you everybody for joining us today. Thank you for your time. We will see you all soon. >>

[Event concluded]