

Audio Transcript

Incorporating Nutrition-Based Physical Exams into Practice

Coral Owen (host) ([00:00:02](#)):

Good morning and thank you for joining us. My name is Coral Owen. I'm the professional development coordinator for one Op, and it's my pleasure to welcome you to today's session on incorporating nutrition focused physical exams into practice. In case you're joining us for the first time, I'd like to give you a brief tour of our webinar platform so you can find your way around. Hopefully you're currently able to view the slides we're sharing. If you can't see them or have any other technical difficulties today, please send us a tech support request via email to contact@oneop.org. Note that the slides and resources for today's session are available for download on the event page. We'll post this URL to the chat pod momentarily for your convenience. We'll also be covering evaluation and continuing education information at the end of today's webinar. So if you are interested in those opportunities or a certificate of attendance, please stay tuned at the end for those instructions.

([00:00:56](#)):

As many of you have already done, we do look forward to having you join us today in the chat pod for conversation for questions and hellos. To embed the chat so you don't miss any links or conversations, simply place your cursor over the shared slides. You should then see a toolbar pop up across the bottom of your screen, and then from there you can select the chat bubble icon. When typing your comments and questions, please be sure to select the 'everyone' response option from the dropdown menu. You can change that right above where it sets type message here if you need to do so. This just ensures that everyone that is on today's webinar can see those as they come through the chat. Also, note that we have closed captioning offered for today's session. You can turn those on via the toolbar that we mentioned just a moment ago.

Thank you for joining us as we continue our partnership with the Department of Defense and the US Department of Agriculture to expand the readiness, knowledge and networks of the professionals supporting our military service members and their families. At this time, it's my pleasure to turn things over to Robin Allen with the OneOp Nutrition and Wellness team. To introduce today's presenter. Robin.

Robin Allen ([00:02:03](#)):

Thank you, Coral today. My name is Robin Allen and I'm one of the program coordinators for the one op Nutrition and Wellness concentration area. Today I'm very pleased to introduce Dr. Jillian Wanik. Dr. Wanik is an assistant professor and residence and director of the Dietetic Internship Program in the Department of Allied Health Sciences. She is a doctor of clinical nutrition, registered dietitian nutritionist, and a board certified specialist in sports dietetics and a certified nutrition support specialist. Her research interests include exploring the relationships between physical activity levels and changes in anthropometrics, and percent body fat, health related quality of life and mindfulness' role in the changing of health behaviors, behaviors. I will now turn it over to Dr. Wanik.

Dr. Jillian Wanik ([00:02:51](#)):

Hello everybody. I'm just gonna make sure I can change my slides. Let's over to the learning objectives here. Perfect. All right. Today we're gonna explore why a nutrition focused physical exam is a key component of the RDNS assessment. It helps identify patients with malnutrition patients at risk for malnutrition and identifies potential vitamin and mineral deficiencies. Incorporating an NFPE is an essential skill for rdns, and this webinar is gonna provide you with tips to improve your NFPE skills, enabling you then to provide improved interventions and patient outcomes. Let's start with a quick poll. We'd love to see what your primary practice setting is. If you see a popup blocker, you might have to click that off, but otherwise the poll should show up into the chat there.

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[\(00:04:08\)](#):

We'll give it just a few more seconds. Alrighty. Looks like we have a good mix of folks in the clinical setting, outpatient setting, and also in the community and other settings. So thank you everyone for participating. We have one other quick question for you, and that is, let me see if I can get this to advance one. We're looking to see the percent of time that you practice a nutrition focused physical exam as part of your assessment process. Here we go. You just wanted to quick do another poll. How often are you doing an NFPE as part of your assessment process looking at malnutrition?

[\(00:05:30\)](#):

All right, looks like we have, again, a range of responses, and so looking at what we see on the board, hopefully by the end of this presentation we can increase your frequency of performing NFPEs in all settings. And so today I'm gonna focus on all of the components that really you can use regardless of whether you're inpatient, outpatient, and in that community or other setting.

All right, let's get us, let's get rolling. This slide should look familiar to folks. These are the ASPEN, the American Society of Parental and Nutrition and the Academy of Nutrition and Dietetics Malnutrition guidelines. We know that malnutrition occurs in different contexts and setting, and it's been described basically as a state resulting from either a lack of intake or a change in the uptake of nutrients that leads to altered body composition, embodies cell mass that results in impaired physical and mental function, but we also know that malnutrition can describe an excess of energy along with that lack of nutrients, meaning that we can see it at all body sizes, three ideologies that are driving it. There's the starvation related malnutrition that's seen in chronic starvation and typically involves minimal or no inflammation. We have the chronic disease related malnutrition seen in our many patients with chronic diseases, for example, type two diabetes, cardiovascular disease, our rheumatoid arthritis, and our obesity patients. This is when we have a chronic inflammation that's typically of a mild to moderate degree, and that third etiology is the acute disease or injury related malnutrition is seen in our folks with major infections, trauma burns where the inflammation is acute and severe.

[\(00:07:32\)](#):

So as we look at those six clinical characteristics, we know we need a minimum of two to diagnose malnutrition, and as always, we say go through every process, every step in the clinical characteristics because the more data you have the stronger your ability to then present your findings will be. Of those six clinical characteristics, three involve physical findings, and that's where we're gonna spend our time today. It is in our scope of practice. As a reminder, it is a part of your assessment, and as we're going through and assessing our patient, we're trying to be comprehensive but also focused, right? We want to use the components of assessment to determine normal and non-normal findings. We also then are going to be discussing our findings with our interprofessional teams whenever possible, and then using that as part of our plan of care for our patient interventions. And that's gonna be also how we're gonna do our ongoing monitoring and adjustments.

[\(00:08:42\)](#):

Just as a quick review, we are gonna talk about moderate protein, calorie malnutrition, and severe protein calorie malnutrition found in the three etiologies. When we look at body fat and muscle loss, we're looking typically at a mild depletion here in the moderate protein calorie malnutrition category, also a moderate and mild fluid accumulation, and it's when we go into the severe protein calorie malnutrition that we see body fat and muscle mass described as either moderate to severe for depletion and also our fluid accumulation is then moderate to severe. So, before you start your NFPE, of course, we're gonna try to gather a complete picture, right, review the chart if possible and then help to

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determine if we're gonna conduct a comprehensive head to toe exam or if we're gonna be more focused based on a patient's setting, medical condition or a diet history.

[\(00:09:48\):](#)

We might be looking for more specific vitamin mineral deficiencies in our patients. There are four areas of NFPE, that's inspection, palpation, percussion, and auscultation. We're gonna talk about the first two today, and when I say inspection, we're talking about observation, looking, but also smelling, hearing, using your senses not just physical characteristics, but a patient's FX and behaviors too. The second palpation is the tactile exam, the touching. We're using light palpation today to feel skin, pulse, observe texture of skin, and in some cases temperature, both cotton and cold observations. We'll look at edema skin turgor, dehydration, weight loss, and nail integrity. So looking and touching, the more advanced skills that should be on your to-do list for obtaining competency include the percussion, the tapping of fingers against body surfaces to listen for solids, liquids or gas and auscultation listening for sounds that reflect the movement of air or fluids using a stethoscope. I have a couple of reference materials listed here. Both are excellent and I'm sure there's other excellent reference materials also, but these are the most common that are on your slide today.

[\(00:11:07\):](#)

Many dieticians as they get started with NFPE, find it helpful to actually write out a script, and I have one that's posted here on the slide. And again, these are just your introductions to your patients. It could be that you've already come in and had some interaction with the patient gone back out, and they're coming in later to actually do the NFPE or you're gonna be doing this all in one setting. So obviously we want to optimize our environment, we wanna make sure we have privacy, we wanna make sure we have lights we wanna minimize noise, and right away, even with that general survey, you'll be able to determine your patient's ability to communicate their orientation to name in place their basic state of consciousness. You'll see body movements, whether it is rigidity, shaking deficits to one side, perhaps missing extremities. You'll be able to know overall appearance. Odors, especially smoke is apparent with some patients, and absolutely want to start asking, Have you noticed changes when you look in the mirror? Have friends or family commented on this? Are your clothes fitting differently? As you notice an area that may not look normal? Ask that patient if they have noticed any changes or if this is a normal presentation for them present, ask how. Also, how long this presentation has been normal or not normal.

[\(00:12:40\):](#)

So, NFPE includes fat and muscle assessment, micronutrient assessment and evaluation of hydration, right? You'll do these in an integrated fashion, i.e., starting at the head during this part as you do your general survey, assessing fat and muscle losses, hair, eye, skin, mouth for micronutrients. Then move to the next area of the body. For today, we're gonna go through each category as a group so it makes sense to you, but realize in your practice, you're gonna combine fat and muscle together along with micronutrient assessments as you move throughout your assessment. So looking at subcutaneous fat loss orbital and bucal, right? You're gonna wanna stand in front of the patient. You'll use your index and middle finger together to palpate the fat pads of the face first around the eye socket, then to the bucal area, which is below the cheekbone and above the jaw.

[\(00:13:34\):](#)

I use a series of three movements. You can work on your timing, especially as you're starting out moving too fast is a common error I see in new practitioners or kind of a fluttering of fingers. Be deliberate. Place your hands on the face, count to two, move your fingers to the next area, count to two and proceed again. Again, you can ask questions ask your patient if they've noticed change. Sometimes

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when patients lose weight, the face is one of the first places you notice. If you have an avid phone user, you can ask to look at pictures over time, right? To determine if there is a well nourished patient, a mild to moderate loss of subcu fat or a severe malnutrition.

[\(00:14:22\):](#)

Moving on to our tricep area, you're going to want to bend the arm at a 90 degree angle. You have the patient relax either they can hold their own arm up or you can support them by holding their hand or by their wrist if necessary. You want to pinch and roll down the tricep to get the subcu fat between the fingers to assess and feel for the space. We're looking for the diameter of the subcutaneous fat as in that second middle picture there. You wanna be careful not to include muscle as you are rolling your fingers down. You want the patient relax, and then you can ask them to flex after. You can give that again a little jiggle and look to see the diameter again. Is there well nourished. Typically that is three quarters or more between your finger and your thumb, some depth or very little folds especially as you're doing some of your elder patients, right?

[\(00:15:28\):](#)

You'll want to be aware that there's also increase in loose skin in the tricep area. Going along down the ribs and the mid axillary line from just under the armpit down to the iliac crest, the top of our hip bone. You have the patient either push against an object. Most commonly what I see is patients that are pushing their hand against my hand as I feel down with my four fingers examining ribs for protrusion right down, partially down the back. Then to examine for a depression. And it's okay to do this over a patient's gown or even a thin shirt as long as they're not wearing a sweater. And again, when we locate that iliac crest, right, the hip bone there, give a small pinch about one inch above the iliac crest, same as the triceps. We're looking to assess the diameter between your fingers and thumbs. When you have a well-nourished patient, the chest is full, the ribs do not show, and there's no real protrusion of the iliac crest in the patient. And as we progress down to severe nutrition, we have a severe malnutrition. We have depression between the ribs that's very apparent. The iliac crest is very prominent.

[\(00:16:56\):](#)

When we look at the seven sites of muscle loss, your goal is to inspect muscle and we're gonna palpate it for volume for the bulk, and also tone. Muscle should be firm. It should have some resistance with palpation you can almost feel a bounce back when you're palpating the muscle, and you should not be able to feel the bone underneath. As with our subcu fat assessment, wanna make sure I remind everyone that we're doing this bilaterally, that we're assessing both sides. All of these areas for our NFPE. Muscle assessment is very important for NFPE. Also, very important for folks with their functionality, quality of life, especially as we age, and the average amount of muscle that you're gonna see for males and females is gonna vary by age and also by their activity level. Typically, as we're looking at the screen here, a male has about 45% muscle tissue, females are about 35%. Just like our bone density muscle peaks in adulthood.

[\(00:18:08\):](#)

Some say thirties, some research says forties. But then again, we have that bell curve downwards. The big question that I hear and that we discuss and my practice is what is normal? What is normal loss of muscle as we age and what is normal? Loss of muscle strength as we age. There's no gold standard. We know that aging is associated with progressive decrease in mass and strength as we can see on the table on the right. And also we know malnutrition, especially our chronic and our acute malnutrition is a condition that has not just the lack of nutrients or change in the uptake of nutrients, but we have that presence of inflammation. We have those inflammatory components that are leading to altered body composition. Those cytokines, those inflammatory signals are driving loss of protein as opposed to

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people with normal metabolism. We also then will have a decrease in our weight along with that loss of our subcutaneous fat stores.

[\(00:19:21\)](#):

Chronic disease, that low grade inflammation, We all know the statistics from the CDC. I think the CDC is done a great job. We know six out of 10 adults have at least one chronic disease. Four out of 10 have three or more chronic diseases. We saw that during covid, how these folks with increased chronic disease had poor outcomes. But we also now that as our folks with chronic disease get older, we have this layering of muscle loss, both from age and from that disease process, that low grade inflammation inflammation that changes how they're metabolizing their nutrients. And then of course, when we put someone in a hospital setting, we have an acute inflammation along with immobilization and disuse also causes losses in muscle. We recognize also as you're looking at your patient population, nutritional conditions and disorders that result in muscle losses. So if you're working with neurodegenerative diseases, ALS, Parkinson's folks with spinal injuries, strokes, TBI are cachexic cancer patients, you need to account then for nonnutritional muscle losses as you're going through your NFPE, right? Getting all the components together to make a complete picture.

[\(00:20:47\)](#):

When we look at our areas of muscle, starting at the temporal right, we are going to place our two fingers just behind the eye socket there and just above the ears, the temporal muscles actually a very large muscle. You're going to identify that, have the patient open/close their mouth, a little bit of chewing to help you feel the initial part of the muscle, and then you're gonna extend your hands back, go back an inch, assess again, back another inch, right? Three times. Also, then remember, the temporal muscle extends up towards the center of the head and assess for tone and thinning of muscle there.

[\(00:21:34\)](#):

As we look then at our pectoral muscle, we'll use bone as our identifier. So we're looking at our collarbone, our clavicle bone, and what we then are assessing is the muscle below that. So you want to find if your person has normally protruding collar bones, if this is a change for them, try to make sure that this person is not hunched over as that can cause your clavicle bone to protrude. Use all four of your fingers, again, pressing, starting at the center, and then moving probably two inches, three to four times to fully assess that muscle right in. In well nourished, you may not see the clavicle bone at all in males, but females typically have a little bit more of a prominent collarbone, so it's important to ask them.

[\(00:22:31\)](#):

Moving directly from the pectoral to the deltoid is a natural process. At the very end of our clavicle bone, there's the acromion process. It's sometimes protruding slightly at the very top of the shoulder. You would want to identify that. And then using all of your hand, your palm, you want to cup the shoulder, keep in contact with the skin, slide downwards and ask the patient then to lift their arm away from their side to help to engage, to activate the deltoid muscle. Again, you're expecting in a well nourished patient, a rounded muscle. As we look at loss of muscle through mild and then severe malnutrition, see muscle, you'll see more bone, and that results in a squaring of the shoulders, a loss of roundness as you are progressing in that muscle loss.

[\(00:23:36\)](#):

As you move then around to the back to the scapular region, our shoulder blade you are going to want to assess three muscles around the scapula. So have the person extend their arm. You can use your hand then for them to push against. This, again, helps to activate the muscle. And then really when you're observing the scapula for both protrusion, typically a triangular shape, right flat across the top

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point heading towards the floor, you're gonna run around the trapezius muscle runs around the spine, the supraspinatus goes along the top, and the infraspinatus runs along that lateral side of the scapula. It's a little bit of a wider muscle. And again, you're looking to see the presence of not bone, but some palpation and having that pushback for patients that have the adequate well merged muscles.

[\(00:24:40\)](#):

As we then move down to the hands looking for losses in our innerosseus muscle, you can have patients put their thumb and their index finger together, index finger together, or their thumb and their index and their pointer finger together, their first two fingers, have them relax, and then you will put your hand into the V of the muscle, and you're going to measure the depth. Looking for differences on both sides. You can have the person relax and then press their fingers together again to engage the muscle. Some dieticians have fun with the patients. You could try to see which hand is dominant. Also, patients that have deficits. Stroke patients may have differences too. Again, for males, you might see more of a bulge and for females, it may be more flat.

Moving along to the quadriceps. Then again, if you have a patient that's sitting in a chair, perhaps more in your community or outpatient setting you can lift the leg onto a chair or raise it slightly if they're in the bed, if they are bedbound, you want to again, remove the quad from the bed by making approximately not a 90 degree, but like 45 degree angle so that you can assess the muscle.

[\(00:26:10\)](#):

For this area I always do some explanation with my patient's. I tell them I'm gonna be assessing your quadricep. It's got four muscles, it's a quad. We're gonna start here, mid thigh, and I'm gonna move towards your knee. Depending on if your patient just has a johnny on or their age, this could be an area that causes them a little discomfort. So it helps to explain what you're doing. So I start at that mid quad on the top, all four fingers, palm gauge, and I'm moving towards the patella towards the knee. You'll go over the knee to explore that even before I've had them raise their leg, I'm looking at the overall shape of the leg to see the depth and the diameter. For some patients, you can absolutely see where the knee is the largest point of the whole leg. And then you'll take your two hands, again starting mid quad and that set picture in the center, and you'll slide those all four fingers again towards the sides of the patella. You can cup your hand around the knee to assess the muscle there. And again, what you'll see then is well nourished patients have muscles that are protruding around the patella. It's not prominent down to an actual depression or lines that you'll see, especially in the top of the quad, the top two muscles where the muscle is thin.

[\(00:27:44\)](#):

And then looking at our calf muscle, our gastrocnemius muscle. Again, you'll have the patient with their hand underneath the bulb of the calf muscle, and then you can have that patient point and flex their foot. You can assist them with that too. And again, you're looking to see if there is a difference in the size and the shape, and a well-nourished calf down to a patient that has a thin cap where there's really no firmness and or muscle definition. When we try to differentiate between malnutrition, sarcopenia-an excess of fat mass versus fat free mass-frailty in our elder patients and cachexia, we know that these are different conditions, but they have overlapping characteristics and also consequences. So again, that's obesity. The presence of a low portion of muscle mass despite obesity the systemic inflammation in Kaia that's caused by those inflammatory responses from the underlying cancer.

[\(00:29:02\)](#):

We see this also in some of our chronic renal and our COPD patients and frailty is really considered the end result of aging, linked to impaired skeletal muscle. And bone health can be a component of sarcopenia. When you're looking here at all the criteria, the common findings, it's that third row there.

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What they're all sharing is a lack of muscle. There are several groups that are looking at these conditions and getting definitions standardized. Both the European working group on sarcopenia and older people the GLIM - Global Leadership Initiative on Malnutrition - are working on these standard definitions. There are validated screening tools. We have no one standard, but preferred tools are listed here. The ones I see most commonly in use here in my settings are that SARC-F questionnaire at the top for sarcopenia, the frail scale for frailty, and for cachexia, it's actually that bottom screening tool, the CIGN tool.

[\(00:30:20\)](#):

I'm encouraging all of you as you are increasing your CEUs and working to go to that expert level to address this. Is there quality improvement initiative that you can start? Can you be working with your PT team, if you have PT that's with you, right? Things like gait speed and sit-stand assessments are coming up along with the dynamometer as the six vital sign. And also we look at the idea that dieticians can use bioelectrical impedance or ultrasound in some settings. There's some nice articles that have been published both in Aspen and the JAND about this and these are allowing dieticians then to really see from the inside out those proportions of fat and muscle. Before we go onto that second half, I've been trying to watch the chat a little bit, but I see there.

Robin Allen (moderator) [\(00:31:31\)](#):

We have quite a few questions that have come in. So I'm going to and lots of discussions, so I'm gonna try and get to some of them for you, if that's okay. Perfect. From Cindy, the muscle percentage loss is shown for males. I wonder if you might have a reference for females.

Dr. Jillian Wanik [\(00:31:51\)](#):

So let me just see that I have to go and look at my reference here. I've got a pile of handouts, as you can imagine, and articles. I'm gonna say I will have to without fluttering through a stack of papers, get back to that. Okay. Yeah.

Robin Allen (moderator) [\(00:32:16\)](#):

But yes, we could post that later as maybe a blog post.

[\(00:32:22\)](#):

Perfect. Is there a reference available to report significant loss of hand grip strength? I have some folks that may already measure weak, but then lose some strength wondering when it becomes significant for further intervention.

Dr. Jillian Wanik [\(00:32:41\)](#):

So wasn't gonna talk about dynamometer today because of the lack of prevalence in so many settings for that. But what you'll want to use if you have access to that tool is the measurement over time. So it's when you are looking at the specific low, moderate, severe loss compared to the standard that comes with each one of the tools, has their reference standard dynamometer. When you are able to do it in perhaps your long-term care or some of your community settings, that's when you really get the benefit on that.

Robin Allen (moderator) [\(00:33:26\)](#):

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Okay. And do you have any tips for distinguishing between age related muscle wasting versus wasting related to malnutrition, or would that only be based on clinical judgment and history?

Dr. Jillian Wanik ([00:33:37](#)):

I think that is where you have to include the comprehensive picture of everything that's going on in your patient, and also the other changes for both their percent PO and their percent of weight loss, perhaps their concurrent disease status. So certainly I think you have to take it patient by patient for that. Recognize as we are all aging, that there will be that underlying loss. And I think that's where also that sixth vital sign, the functionality. Are people able to get out of the chair? Are they able to go up the steps, do their normal routine? Where has that change happened and over what time period helps you with that?

Robin Allen (moderator) ([00:34:32](#)):

Do patients accept this being done by an RDN? It is more hands on than my physician does on me.

Dr. Jillian Wanik ([00:34:38](#)):

<laugh>, especially for the inpatient setting or it's part of our scope of practice. So yes, it is considered acceptable in all settings. I had questions kind of early on in my practice about patients that were less alert less able to participate, where the ability to conduct that was. And the reply is when patients are come into receive care, that is part of the overall consent that they've given is to get standardized care, and that's there for your scope. So again, in that introduction, I explain it, this is gonna help me work with you to put together a plan that's going to improve your condition, your health work, to get you back to whatever the goal we've determined is together. And so as you're going through and talking, I have one dialogue kind of going on in my head, two fingers, two seconds, move, move. But I'm having an external dialogue at the same time with them asking them about what changes are happening too.

Robin Allen (moderator) ([00:35:51](#)):

So there was quite a bit of discussion around if dieticians about touching patients - some dieticians like it and some don't. So I don't know if you've run into this in your teaching?

Dr. Jillian Wanik ([00:36:09](#)):

I think we all come from different backgrounds and even our patients too. And so it's something that is shown evidence based to improve outcomes. So I think if you take it from a professional standpoint, the work with NFPE becomes anything that you're doing easier with time, more comfortable over time. It helps you identify non-normal findings over time. I have folks that feel more comfortable wearing gloves in this setting, and absolutely you can do that. You wanna make sure that they are really tight so that you can still feel your palpation. But again, it, it's I think maybe a first step in where our profession is going as we increase our scope. The next step is for the new five year competencies is placing feeding tubes, doing point of care testing for glucose, finger sticks for cholesterol, bedside swallow evaluations. So I think everything we're evolving and there's room for, I say, working on expanding your scope. So ...

Robin Allen (moderator) ([00:37:34](#)):

Great. I think we'll just continue on.

Dr. Jillian Wanik ([00:37:37](#)):

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Keep going. Okay. Yeah.

Robin Allen (moderator) ([00:37:38](#)):

Perfect. That'll be time for more questions at the end.

Dr. Jillian Wanik ([00:37:41](#)):

Yep, absolutely. All right, let's move on to micronutrient deficiencies. And again, a kind of quick poll, just trying to judge what folks' confidence level is.

Give you a few minutes here to answer ...

Okay, we kind of gotta even split between low, medium, only a couple that feel they have high confidence level. So we'll talk about it and let's work on how we can increase your confidence because micronutrient deficiencies may be available through a biomarker, through a lab result, but also your NFPE can be the best way that you can then identify these and improve your patient's health. And so as we are looking at our micronutrients. This is sometimes called the hidden hunger. It's prevalent in all weight groups even among our overweight and our obese patients. And again, we can have micronutrient deficiencies for two reasons. The primary being just the lack of the vitamin or mineral in our diet.

([00:39:10](#)):

But that secondary deficiency is issues with absorption or metabolism or increased destruction in some cases which can lead to the deficiency. So I'm gonna say take deep breath. What we're looking for are non-normal findings. We're not expecting anyone to have this list of all of the vitamins linked perfectly to signs and symptoms because often there's multiple vitamins or minerals that overlap. This is really where you as the nutrition professional integrate your patient's food and fluid intake. That's key really. What are their dietary habits, restrictions, allergies, tolerances, eating patterns, what kind of supplements, medications are they on? And at times you may have some laboratory data and you definitely want to have an NFPE guidebook here because that really is a great way to see all of the pictures that are going along with that. You will wanna have maybe a handout if you're a clipboard person like I am, or if you're a binder person or if you're at a desk, actually you get to know some of the vitamin lists.

([00:40:31](#)):

B vitamins, four to 10 days to deficiency. Vitamin D, E, K, C, two to six weeks, still deficiency. Folate probably three to four months. Vitamin A can be a year longer. And n B 12 a couple years. Mostly when I see lab values, I see vitamin D, folate, some of the fat soluble vitamins and B12, but I don't often get a lot of the water soluble vitamins. As far as minerals we know iron can increase with inflammation, that's the ferritin and zinc can be decreased. So kind of used with again, knowing the overall condition of the person that you're looking at, but as you're going through your head is the best place to find some micronutrient deficiencies. Looking at patient's hair, you would wanna feel that with your fingers. This is a gentle tug of about a one inch section, just asking the patient - noticing hair loss, pillow in the shower, changes to texture, right?

([00:41:45](#)):

Medications. Typically we all lose about 60 to a hundred hairs per day. We know thin, brittle, dry and easily pluck hair could be associated with fat soluble fatty acid deficiencies, riboflavin deficiencies and malnutrition. Of course, folks that have bad day at the hairdresser or are on some sort of radiation therapy. Folks that are going through hormonal changes or endocrine disorders, thyroid disease, Some of our bariatric patients. These are kind of folks that have you know would a heightened alertness for

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looking at changes in their hair. We also can assess the hair on the skin, especially on the forearms maybe as we're going down from our deltoids to our interosseus muscles in our hands. You can look to see changes in skin texture some of that cork screwed hair. And what does your food nutrient recall tell you about potential deficiencies? Eyes are another great place.

[\(00:42:55\)](#):

If your patient has glasses, you can ask them to remove them, right? You'll have a pen light and you want to, again, make sure you're not pointing that straight at the eyes, but height, holding it more 45 degree perpendicular angle. Check the sclera, check the color of the whites. Is there yellowing? Is there broken blood vessels? Are we actually seeing changes to the sclera? Are they call 'em those Bitot's spots. Some of the early signs of vitamin A deficiency, it looks like a little bit of almost like a foamy area. Ask your patient any difficulties seeing at night, any vision changes. Have the patient pull down their lower eyelid, their conjunctiva. We want that lining to be pink. Pale may indicate anemia, right? Anemia could be from iron, B12, folate. You're gonna wanna have a diet history. Also of the overall shape, or is it dry sunk in?

[\(00:44:01\)](#):

This can be signs of dehydration, too. As you move down, you can explore the nasal labial fold with your pen light and ask your patient to open their mouth. The mouth can provide a wealth of information. Difficulties chewing, tooth pain. It was so hard during covid, everyone had a mask on. I had to ask people, are we able to see, do they have their dentures, any broken teeth? Have they been to the dentist? Any bleeding from the gums, any changes in taste or sores? Observing all the conditions, looking inside the mouth to better assess oral cavity. You have ... definitely, a pocket guide is invaluable here. High level look for non-normal findings right? The inflammation or redness are cracking at the corners of the mouth. B vitamins, irons, dehydration. What is the shape of the tongue, the color of the tongue. Can you see the papillae?

[\(00:45:07\)](#):

Is it smooth or red? Is it sore? Right? Again, many of our B vitamins here. Looking ...if you have the patient just pull down their lower gum to see that triangular shape area between the teeth and the lip. The swelling or redness there. You can even pick up some oral thrush or candida, that white film on the tongue for some patients. When you're doing your interosseus assessment, take a minute to check the nails, right? Shape, color, appearance. Of course some of our folks might have acrylic or painted nails, which limits us our ability there but you can certainly check hydration and capillary refill at the same time. You'll just press for two to three seconds and the color should return to the nail bed. Again, assess non-normal findings. What are the lines that you see? Are there nail beds that have koilonychia? Right? So it's a concave nail.

[\(00:46:10\)](#):

We all learn that from our RD exam. I feel like for iron or a barrel shape, nail the opposite. The nails curved down associated with COPD. Pale nail beds could indicate anemia. Again, noticing changes, brittle, breaking if abnormal, how long has it been there? So again, getting all of those findings there. Edema is something that the nurses also assess, but you too should double check that, right? Learning and practicing you can use your thumbs. Some people use their first two fingers. Examine the tops of the feet for edema. If it is present, work your way up almost to four to five inches up the shin as you're looking at this patient (referring to photo illustration) has no edema. <laugh>, couple more pictures but as you're looking at the forearm, two, you can check for skin turgor for dehydration, your skin should snap back within one to two seconds.

[\(00:47:23\)](#):

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And with that small amount of pressure, if it remains up a little longer, can be a sign of hydration, dehydration. So certainly what happens depending on the setting, and I saw someone talking about their timing, and so again the overall nutrition assessment, depending on if you're doing comprehensive or you're just doing fat muscle or you're just doing nutrient, takes probably about five minutes. Once you've gotten your flow down and you're talking through and you're looking at your patient, and again, I document if it's normal, if it's mild, moderate, severely depleted, or if I'm perhaps unable to see an area or I could maybe only see one side of a patient. Certainly for our patients that are unable to respond to commands, their bodies can still tell us what they can't. Certainly the more eyes and hands on a patient, the better the care. Absolutely. Your patient has consented to care on admission and NFPE is part of that normal care.

[\(00:48:38\)](#):

If you are unable to document, then you know, also note that I have on the bottom here, patient at high risk doesn't meet criteria or unable to assess fully, following closely. Will reassess the next time that follow up. This really helps when you're having transition of care or continuity. The next person that might see your patient, it could be a bit of time, appreciates the detail that you have in your note. Electronic charting makes it easier for you to click and pick off checklist too, so that you can make sure that you're thorough, too.

All right, I have just a couple of practice questions and I thought we would just focus on a little bit of micronutrients since that was an area that we have I think a little less familiarity with too.

All right, we have 75 year old lethargy, tired muscle aches, altered mental status, no diet history, lives at home, a history of alcohol use disorder. We're seeing bruising on the body. Notice some loose teeth, swollen gums, and dry mouth. Which nutrients would you feel are most responsible for this patient's condition?

All right, we'll see what we got for our answers here. Thiamin. Yep. Great job. I think we all have that in our mind, but really what you're seeing for your physical signs too are that vitamin C. So great job for the folks that also selected vitamin C there.

[\(00:50:54\)](#):

Looking at our next patient. 55 year old, two years after total gastrectomy, poor appetite, chronic fatigue, unsure of weight changes, states his clothes seem looser. He is pale, he has pallor, he has the paresthesia, the tingling or a numbness in his feet and his mean corpuscular volume. His red blood cell size is over a hundred, 110, over a hundred normal, like 80 to a hundred. Which nutrients might be most responsible for this patient's condition?

[\(00:51:56\)](#):

Great job. And again, that elevated MCV drives us towards both folate and B12. And this is actually where we could get some lab follow up. We look at both homocystine levels that are elevated in folate deficiency and our B12 patients have elevated homocystine and methylmalonic acid. MMA is sometimes how it's abbreviated. And again, B12 takes several years for it to be depleted, but we know our patient is a couple years out from a gastrectomy, so less availability to actually metabolize the B12 in the diet. We don't know a lot about what he's eating, but certainly we would want to have a little bit of further information. Pins and needles is often found that paresthesia is found in B12, to.

Alright, last one, then we'll wrap up with some questions here. Motor vehicle accident, 69 year old male widowed learning to cook for himself. Celiac disease, trouble driving. We're again seeing some power in his overall skin and the eye exam revealing some of those Bitot's spots that irregular lesions on his sclera is what that should say. Which of the following micronutrients should we consider?

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[\(00:53:57\)](#):

Great job. Yes. We also might wanna consider some zinc. I see some folks also listed that. Yes, and a zinc deficiency can lead to a reduction in vitamin A in folks and folks with celiac disease are often associated to have the zinc deficiency too. So yeah, super. Great job everybody. Alrighty, well thank you all so much for being here today. And I think I want to make sure we know that malnutrition, it's underdiagnosed not just in the inpatient setting, but especially now in the outpatient and community settings and that you're integral, you're key to improving your patient outcomes. Certainly anytime you can be interdisciplinary or have that multidisciplinary approach, the more that everyone is aware of malnutrition you know, then can have other members of your team not just giving you that heads up. I know we're all super busy, but that communication across the disciplines is essential and certainly as you continue to practice it increases your comfort, it absolutely increases your speed.

[\(00:55:22\)](#):

I know we all have set number of patients we have to see in a day and it also then makes you much more aware of what's normal and non-normal, right? I'll find myself in a hot summer day in the grocery store assessing someone's deltoid muscle, just looking from behind them and I'll be like, hm! <laugh> Certainly for your personal skill and experiences, practice and try to work to be at that highest level that all of us can pursue so that we can continue to improve our wonderful profession.

Alrighty, I think we got a couple minutes for questions. Thank you so much.

Robin Allen (moderator) [\(00:56:11\)](#):

So a lot of questions and comments have come in and I wanna thank you very much though for all this information. So let me get to a few questions. Any tips on how to do an NFPE virtually?

Dr. Jillian Wanik [\(00:56:26\)](#):

So certainly, bam, here we are in the world of telehealth kind of ramped up so quickly in the world of covid you know, can ask your patient to move their camera to different areas of their body. Certainly in the virtual world, if you're doing malnutrition diagnosis, you really probably should have at least the other two characteristics of the changes in weight and the decreased PO just because of the fact that it's not an actual physical assessment, it's a virtual assessment, but certainly you can put your findings noting it appropriately of changes in both the fat and subcu muscle and also potential micronutrient deficiencies, yeah.

Robin Allen (moderator) [\(00:57:19\)](#):

So ... edema can be used as an indicator for malnutrition. It can be used as one of the two signals because it can mask weight loss. That's not really a question, but do you have any comment on that?

Dr. Jillian Wanik [\(00:57:33\)](#):

I think at malnutrition it's still new, right? The criteria came out in 2012 and then it was put into practice. And then we have the research. Most of the sites these days, places I talk or hear from other folks that are practicing, they use two criteria and then they have edema as a third criteria. So if you only had one criteria and edema the kind of practice versus the guideline is that you probably need a little more information, put them at a high risk for malnutrition and make sure that you are then following up with them, either you or as you're doing your transition of care for them.

Robin Allen (moderator) [\(00:58:23\)](#):

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So how does NFPE change your nutrition interventions and goals?

Dr. Jillian Wanik ([00:58:28](#)):

So I think one of the biggest areas that NFPE changes it is the idea that we are not just kind of a one and done short term intervention, especially for our inpatient or our community settings. It's the idea of how to keep these patients on our radar and work on basically the whole person trying to make sure that if we have social determinants of health, food insecurity, access to food issues, with trying to be in whatever setting they are, especially some of our community folks that then we're hooking them up with ongoing services, with ongoing monitoring. So it's not just the documentation. I think that was kind of where we started with our first step we're right, we documented this, we're gonna change our billing, but really to improve that patient's health through the identification of the malnutrition. It's then how are we gonna work to improve their nutrition over the long haul.

Robin Allen (moderator) ([00:59:37](#)):

Thank you. That's great. We're getting lots of great comments. Thank you Jillian, for all this information. Yeah, lots of, it's all new to me and our participants. You were fabulous just talking amongst yourselves, asking questions and communicating resources. So that's wonderful. So thank you everyone for attending. And Jillian, thank you much so much for this wonderful presentation

OneOp Nutrition and Wellness is very pleased to present this upcoming event, Relative Energy Deficiency in Sport (RED-S): Evaluating the Impact on Health and Performance. Wednesday, February 1, 2023 at 1:00 PM Eastern time. Nutrition and Wellness is offering one CPEU for registered dietitians and dietetic technicians for today's webinar. To receive your CDR CPEU certificate, please visit the webinar event page. We will put the link in the chat pod. You will find the purple evaluation link on the event page. After completing the evaluation, you'll be directed to fill in your name and email. Your CPEU certificate will be emailed to you, government addresses such as .mil and.gov frequently do not accept automated email, so you may need to use a personal email address. We invite you to stay connected with nutrition and wellness team and with OneOp. Subscribe to our listserv on our website to receive blog postings and information on upcoming webinars. I will now turn it over to Coral.

Coral Owen (host) ([01:01:21](#)):

Thank you so much, Robin. I wanna echo Robin's thanks to Dr. Wanik for her expertise and time today. Incredible information and thank you all for being so active and engaged with us today as well. Just as a final reminder, you can find these slides as well as the additional resources that were discussed on the event page. We'll also be posting the recording of today's session within one to two business days if you'd like to go back and review any information or share this recording with any of your colleagues who may be interested. Again, don't hesitate to reach out if you have any follow up questions for Robin and her team. We do look forward to seeing you again soon. And thank you again for taking the time to join us. We wish you a wonderful rest of your day and look forward to seeing you again soon.