

## NUTRITION & IMMUNITY PODCAST SERIES

### NUTRITIONAL INTERVENTION OF COVID-19 PATIENTS IN-HOSPITAL & POST-DISCHARGE

Featuring :: Nicolaas Deutz, MD, PhD

#### TRANSCRIPT

**Maura:** Hello, and welcome to the Abbott Nutrition Health Institute Podcast. I'm Maura Bowen, and I'm here again today with Dr Nicolaas Deutz [MD, PhD], picking up where we left off from our most recent episode on the novel coronavirus, COVID-19. If you missed our last episode, we discussed the impacts of pandemics on older people, and provided The European Society for Clinical Nutrition and Metabolism—that's ESPEN's—recommendations for nutritional care to support improved outcomes of individuals in the community. You can find this episode by visiting [anhi.org](http://anhi.org) and clicking "COMMUNITY."

**Maura:** We're taking that discussion one step further today by talking about malnutrition and muscle loss, which is common in patients with COVID-19. We know that elderly people and those with comorbidities are especially at greater risk of malnutrition and muscle loss. Bed rest, immobility, in combination with illness, accelerate muscle loss, which in turn contributes to prolonged ICU and hospital stays, prolonged recovery and worsened clinical outcomes.

**Maura:** ESPEN has recently published recommendations for best-practice in nutritional care to support improved outcomes in patients with the SARS-CoV-2 infection. And so today, Dr Deutz will talk about the importance of an early and adequate approach to nutritional support over the healthcare continuum.

**Maura:** This podcast recording may sound softer than you're used to hearing. For the sake of social distancing, Dr Deutz and I are both dialing in for today's discussion rather than sitting in the studio.

**Maura:** Dr Deutz, welcome back. We're grateful you can join us.

**Dr Deutz:** Thank you for having me today.

**Maura:** Yes, thank you so much. Before we start, can you tell us a little bit about yourself, your current role, and what brought you to this area of focus in your career?

**Dr Deutz:** Yes, so I'm an MD, PhD, originally from the Netherlands. I moved to the US in 2006. And all my life, I've done research in nutrition and metabolism. I'm very much focused on trying to positively effect metabolism. And that's why in my research I've done a lot of studies—for instance in ICU patients and critically ill patients—to see whether we can positively influence metabolism. When I moved to the US, I kept on working together with others in the US to do this type of research.

**Maura:** ESPEN recently released its new guideline of the nutritional management of individuals with the SARS-CoV-2 infection. I'd like to start by asking you about the specific needs of patients who have been hospitalized with severe symptoms, including pneumonia.

**Dr Deutz:** Yes, so I think if a patient has been hospitalized for any infection, [including] of course the SARS-CoV-2 infection—what we call the Covid-19 epidemic, a really very severe viral infection that has very severe symptoms—patients are really becoming very sick. Which means that if somebody already is vulnerable—say, older people, or people who didn't eat enough, have lost a lot of muscle mass or have a lot of comorbidities, like diabetes, obesity, [and] they all are very much affected to that. And then what happens usually is that when older people are admitted to the hospital, and they are usually the ones who were not so strong in the muscle, then they suddenly have to breathe so much more because it's so much more difficult to breathe. So muscle strength in general is a very important point.

**Dr Deutz:** And on top of that, if somebody is in the hospital, usually they'll very quickly lose more muscle mass because of inactivity because it's very hard to move when you are very sick, so then even that strength will go away. So, the longer somebody is in the hospital, the more difficult it will be for this person to cope with the disease.

**Maura:** Clearly this is an extremely serious issue. What should healthcare professionals do to minimize the impact of muscle loss in these patients?

**Dr Deutz:** The first thing healthcare professionals should try to understand is this point of muscle loss because of inactivity, but also because of change in metabolism. It's very important to try to identify malnutrition and loss of muscle mass as soon as possible. So, we always advocate to immediately start screening patients when they are admitted to the hospital to identify whether these patients are of increased risk. And besides that, malnutrition usually means there is not enough food intake, which usually happens before people are admitted to the hospital. They were already sick. It's possible to immediately start nutrition support when people are in the hospital and ensure that there is sufficient intake of protein. Because protein plays such a key role in that.

**Dr Deutz:** So, for healthy older adults, we already advise that the intake of protein [should be] so much higher than normal, and that at least 1g per kilogram of body weight per day, and [adjust] looking at individual status and activity and disease state.

**Dr Deutz:** But when people are admitted to the hospital and they are very sick, we actually advise to even increase the protein intake further. Because when, for instance, there is an infection, or the body's response to the infection is inflammation, there is a much higher need of protein and amino acids. So your metabolism is totally changed, and you have to positively influence that. So then we come up with higher amounts of 1.2-1.5 g [of protein] per kilogram of body weight protein per day—or even up to 2.0 g per kilogram of body weight per day. There are still a lot of trials going and have been published that show even higher increase of protein in the ICU, for instance, is still of benefit.

**Maura:** You mentioned many of these patients will be older persons with existing malnutrition or co-morbidities, and the effects of the illness may make it difficult for them to consume additional protein from their diet alone. Should they be offered oral nutrition supplements to improve dietary intake and nutritional status, as well as lower the risk of complications and readmission?

**Dr Deutz:** Absolutely. I think it's possible when people get ill at home, then already it's the moment to be sure there is sufficient nutritional intake. Just when in any event people are admitted to the hospital, they did not lose already a lot of muscle mass and were malnourished. It's very interesting. We not too long ago did a large study, and also a recent study, from Switzerland showed that people who are admitted to the hospital because of, for instance, for pneumonia or exacerbation of COPD, when you provide sufficient nutrition in the hospital already, these patients have a better survival [rate]. So, nutrition really can save lives.

**Dr Deutz:** What kind of oral nutrition supplements should we give? First of all, it's very important that the oral nutrition supplement is high in protein, because, you know, protein is very important. And the research that I reported was actually [on] an oral nutrition supplement that also contained a component that has a positive effect

on muscle health, called  $\beta$ -Hydroxy- $\beta$ -Methylbutyrate—which is called HMB.

**Dr Deutz:** So, in hospital treatment, as soon as possible is really critical for the survival of patients.

**Maura:** A small proportion of COVID-19 patients will develop severe respiratory failure, septic shock, and organ failure which will require mechanical ventilation in the ICU. What are the specific concerns for this patient population?

**Dr Deutz:** What you described is a very secure situation with a high mortality. It's the moment that everybody has to work very hard to keep the patient alive. And in that situation, the body is also very active to try to cope with this problem. And the only way for the body to obtain sufficient nutrients—for instance, when there's an infection—is to break down protein.

**Dr Deutz:** The protein is stored in the body as muscle. People in critical illness will lose an enormous amount of muscle in a very short time period. So, for instance, if people were in the ICU, and recovered and came out of the hospital, they usually have lost an enormous amount of muscle, but also, on top of that, the muscle is not very strong. So they are very weak. It could [take] well more than a year before someone is back to normal. So, when people with critical illnesses are admitted to the ICU, the disease is not done when they are home. Then they have very long rehabilitation period. And it's needed.

**Dr Deutz:** So the loss of the muscle in the ICU also is of course [a] situation [where] people become less strong and then of course cannot breathe so well. So if people were on the respirator and were taken off, they have a hard time breathing on their own because they are so weak.

**Dr Deutz:** We did not show that the HMB we tested in the study I just mentioned, also would have a possible setback in the ICU, but that could well be. But for sure, we know that increasing the protein intake probably is very important in the ICU.

**Maura:** What is the best way to provide nutrition support to these patients?

**Dr Deutz:** Now it's clear that if somebody is intubated, an oral nutrition supplement is absolutely not possible. We always advocate as soon as possible to give enteral nutrition—tube feeding. And “early” means really after stabilization of a patient within 48 hours of admission. And every patient really should be treated like that. If that is not possible, then there is an option to keep parental nutrition. But that usually is only done when we are absolutely sure there is no way to get sufficient nutrition through the enteral route.

**Maura:** The nutritional needs of ICU patients will change over time. What are the optimal targets for protein and calories?

**Dr Deutz:** Now, first let's talk about calories, then. Calories mean energy. Now we know that people in the ICU have inflammation. So that by itself increases the energy needed. But on the other hand, because people are totally inactive in the ICU, that means the energy has gone down. So overall, all the research shows that the needs of energy are actually not higher, but probably even a little bit lower. That's why the general feeling is that providing calories should not be completely a target but actually should be a little bit less to be absolutely sure we do not overfeed our patients with calories.

**Dr Deutz:** For protein, it's a different story. The protein itself would help maintain the protein mass in the body. That's why there's really a focus now in increasing the protein intake, to be sure that it has a positive effect on the muscle mass.

**Maura:** Even with nutrition support, patients surviving acute complications through long ICU stays will face further worsening or new onset of malnutrition and wasting. What should we be doing to support their discharge from hospital and recovery in the community?

**Dr Deutz:** As I indicated, when patients survive and are discharged from the ICU, they go to the ward, and then from the ward go home. In the stage after the ICU, there are many moments where the patient needs a lot of care. Because the patient still has to recover.

**Dr Deutz:** Think about it: If you have a lot of muscle mass, you have to eat a lot of protein for a long time to get that muscle mass back—on top of being more active, which is usually difficult because those people are feeling very weak after discharge from the ICU. So this is one of the most important times to try to improve the rehabilitation. And the chances of patients that are discharged of course are very high for malnutrition, and it's going to take a long time.

**Dr Deutz:** Our own study, for instance, in which we tested the effect of in-hospital and after-discharge supplementation of an oral nutrition supplement, we gave that for 90 days after discharge. And still, a large percentage of our patients were malnourished. We could improve nutrition conditions for only 1/3 of patients, but still, 2/3 were malnourished. In other words, it can take a very long time. And you have to provide nutrition for a very long time until people really are back in their strength.

**Maura:** Thank you for your time today Dr Deutz and for sharing these excellent insights. We appreciate all you're doing to help build awareness for the important role nutrition has to play in the management of patients with coronavirus.

**Maura:** And to our listeners: Our website, [anhi.org](http://anhi.org), has a series of resources related to this topic—for instance, infographics on [nutrition and immunity](#), [dehydration](#), and [why maintaining muscle matters](#). You can find these resources on [anhi.org](http://anhi.org) by clicking “RESOURCES” and “PRINTABLE MATERIALS,” or by scrolling to the end of the transcript for this podcast episode.

**Maura:** If you're hoping for more podcast episodes on nutrition and immunity, rest assured we're developing a series of additional episodes to help support you. Become an [anhi.org](http://anhi.org) member today by clicking “REGISTER” at the top of our homepage to receive regular nutrition science news updates from our team.

**Maura:** Looking for supporting info on physical activity guidelines for older adults? Scroll to the bottom of the transcript for this podcast episode to find links to resources from the [National Health Services United Kingdom website](#).

**Maura:** Thanks everyone. Stay healthy and safe.