

‘Nutrition plays a key role in recovery’

The coronavirus is causing a lot more people than usual to be admitted to intensive care units. Some of the survivors will suffer after-effects for the rest of their lives. Special professor Arthur van Zanten wants to know why some patients make a full recovery and others don't. And how nutrition and exercise contribute to recovery.

text Tessa Louwerens photo Ernst-Jan Brouwer

As of 1 June, Van Zanten was appointed professor by special appointment in the Nutritional Biology chair group, part of Human Nutrition and Health. His chair is financed by the Gelderse Vallei hospital in Ede, where he works as an intensive care physician. WUR has been collaborating with this hospital for years in the area of nutrition and health (see inset).

Van Zanten and his group are researching the role of nutrition and exercise in recovery from metabolic stress in, for example, Covid-19 patients after treatment in an intensive care unit (ICU). Metabolic stress results from a serious disease or an operation: inflammatory reactions disturb the metabolic processes in the body, such as muscle formation and fat storage. 'A stay in an ICU is comparable to top sport,' says Van Zanten. 'The body is at war and a patient can lose kilos of muscle mass per day during an ICU stay.'

SURVIVAL

According to Van Zanten, a lot of research has already been done on the acute phase of an ICU

stay, leading to a big improvement in the prognosis for patients in the first few days after admission. 'Half of them used to survive, and now 80 per cent survive.' But survival is only part of the story. Often people are never the same

‘After an ICU stay, some patients can no longer go to work or live at home’

again, and Van Zanten has noticed that the number of ICU 'victims' is rising. 'It is a heavy onslaught on the body, causing health problems that go on for years, such as exhaustion, post-traumatic stress, muscular weakness, concentration problems or depression.' In the course of his career, Van Zanten has

treated thousands of ICU patients and has seen the impact their ICU stay has on them and their families. 'Sometimes patients can no longer go to work or live at home. They survive, but their quality of life deteriorates badly.'

LIFE AFTER THE ICU

Van Zanten is eager to find out how these people's quality of life can be improved after their ICU stay. 'There is more and more evidence that nutrition plays a key role in recovery, both in the acute phase in the ICU and during the rehabilitation phase in a rehab centre or nursing home, or at home.' Van Zanten thinks nutrition and exercise are important at every stage, while different approaches are appropriate at different stages. 'In the first few days after admission to an ICU, you mustn't overfeed the patient because the body is already working hard to release energy. So you run the risk of overnutrition. You see the same problem in people who have been starved: if you give them too much food too soon, there is even a risk of death.' After the first few days, it is important for





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patients to get enough protein and exercise. Their protein needs increase during the recovery period, explains Van Zanten. 'You have to build muscle, and just like sportspeople, you do that by eating proteins and by exercising.' That is very difficult for patients, says Van Zanten. 'After an ICU stay, many of them have difficulty swallowing and lose their appetites. Some patients also suffer from depression. It is hard to motivate them to eat and exercise enough, but I think there is a lot of scope there for improving the outcome. We must keep a good eye on people for at least a year after an ICU stay, according to individual needs. We should monitor a patient's energy metabolism so that we can determine precisely what this person needs.'

COVID-19 PATIENTS

The Covid-19 outbreak makes Van Zanten's research programme especially relevant. He is currently studying more than 50 Covid-19 patients treated in his hospital. 'We look at their body composition – the amount of muscle and fat tissue, for example. From previous research,

we know that patients who have to be admitted to the ICU are often overweight. But paradoxically, the survival rate is better among overweight patients, probably because they have greater muscle mass.' It is not yet clear whether this obesity paradox applies to Covid-19 patients as well. In the past few months, Van Zanten hasn't had much time for the research because he has been busy working in the ICU. A lot of work at the university is at a standstill too. 'We are going to carry on with it now, and we hope to present the first results in a month's time.'

NUTRITION IS KEY

Van Zanten particularly wants to understand why some people make a full recovery and others don't. He looks at the factors at play in this, and how nutrition and exercise can help. 'If we can figure that out, we can make better treatment plans.'

The fact that nutrition is a relatively new subject in the medical world makes this study extra interesting for Van Zanten. 'For a long time, this was largely the domain of nutrition

researchers and dieticians, but I am seeing a growing interest in it, and nutrition has now become a key element in IC treatment.' He travels around the world to share his expertise, and comes across some interesting cultural differences. 'In China they work a lot with herbal medicine, and it is usual to give patients green tea through tube feeding.' 

NUTRITION IN HEALTHCARE ALLIANCE

The research programme has been made possible by the Nutrition in Healthcare Alliance in which the Gelderse Vallei hospital and WUR have been collaborating since 2007, joined later by Rijnstate hospital in Arnhem. The alliance's goal is to bring together scientists, health practitioners, government and industry.