To function in tip-top condition, keep their muscle mass and maintain their strength, older folk need more protein than what is recommended for adults in general.

PROFESSOR STUART PHILLIPS

It is highly dependent on people’s level of physical activity and their level of protein intake. So, for people who tend to have a lower protein intake or are less physically active, you can measure this decline earlier in life.

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JOYCE TEO

To preserve muscle mass and strength despite ageing, older adults should eat more protein than what is recommended for the general adult population.

That is the view Professor Stuart Phillips, who is from the Department of Kinesiology and School of Medicine at McMaster University in Canada, shared recently at an International Life Sciences Institute Southeast Asia region symposium that was held here.

Prof Phillips, who heads the McMaster Centre for Nutrition, Exercise and Health Research and the Physical Activity Centre of Excellence, said the current recommended dietary allowance (RDA) of 0.8g of protein per kg of body weight a day is insufficient, particularly for older people.

“Based on our research, the new minimum intake for older people would be closer to 1.2g per kg per day,” he said.

Research has shown that higher protein intake is associated with greater muscle mass and better muscle function at one age. This helps to reduce the risk of falls and fractures in older people.

Prof Phillips, who also spoke on reassessing protein requirements for healthy ageing at the Asian Congress of Nutrition held earlier this month, is among the growing number of experts who have, in recent years, advocated a higher protein diet for older people to fight sarcopenia or the age-related loss of muscle mass, strength and function.

The protein guidelines by the World Health Organisation and some other health organisations were set many decades ago, he said.

And the aim was to avoid nutritional deficiencies rather than to optimise specific health outcomes reflective of today’s rapidly ageing society, in particular the mitigation of sarcopenia, he said.

Indeed, Dr Samuel Chew, a senior consultant at the department of geriatric medicine at Changi General Hospital (CGH), said: “In the past, it was thought that the protein requirement for the young (0.8g per kg per day) and older people were the same.”

However, recent research has shown that older people require a higher level of protein in their diet - about one-third more - to achieve the same amount of muscle protein synthesis, he said.

Older people who do resistance exercise training as well as those who are ill or recovering from wounds should consume 1.2g to 1.5g per kg per day.

For most older adults who have a critical illness or experienced major trauma, up to 2g of protein per kg per day may be required for recovery, he said.

At the National University Hospital, Associate Professor Reshma Merchant, who is head of the Division of Geriatric Medicine, has been advocating high protein foods for older adults, except those with renal problems, for more than a year now.

“The current RDA of 0.8g per kg per day is not sufficient for many seniors who are at risk of becoming frail or sarcopenic,” she said.

Seniors who are at risk of becoming frail or sarcopenic, she said, are those who tend to have lower protein intake or are less physically active, and their level of protein intake, she added.

Sarcopenia develops over a long period of time and can start in your fourth decade and is measurable by your sixth decade, said Prof Phillips.

It is highly dependent on people’s level of physical activity and their level of protein intake, he said.

“So, for people who tend to have a lower protein intake or are less physically active, you can measure this decline earlier in life. It is hard to point to a best time to start mitigating the effects of sarcopenia, but it is clear that over time the loss in muscle mass is harder the later you start,” he said.

“It’s the same story we’ve been telling people about osteoporosis and osteopenia – that it is important to lay down the foundation as early as possible.”

While a higher protein intake is advised, there is always an upper limit.

Prof Phillips said he recommends keeping to a limit of 19g per kg per day, after which the benefits might diminish.

PROFESSOR STUART PHILLIPS ON THE DEVELOPMENT OF SARCOPENIA OR AGE-RELATED LOSS OF MUSCLE MASS, STRENGTH AND FUNCTION

“Moreover, as a general rule of thumb, the old and very elderly generations come from a time when access to meat and fish was a luxury,” he said.

“Hence, they are accustomed to eating small portions of meat or fish and larger portions of carbohydrates and vegetables in their daily diet.”

This is further compounded by the general unfamiliarity with dairy products from their younger days, compared with the younger generation in Singapore, said Dr Chew.

These factors impede their efforts in trying to get the elderly who are ill, recovering from wounds or trauma, or who are sarcopenic and malnourished to eat more protein, he said.

“We face these challenges on a daily basis in the care of older and very old hospital patients in Singapore,” Dr Chew said.

This is because studies have shown that for older people, insufficient protein intake per meal - say, less than 10g to 15g - does not result in optimum muscle protein synthesis, even if the total protein required for one day is taken in one meal, he said.

Prof Phillips said misconceptions about protein sometimes prevent people from eating enough of it.

For instance, some people believe that protein makes the blood acidic and leaches calcium out of their bones, making them brittle, when the opposite is actually true.

“What we do know is that when we add animal protein into a diet, kids grow better, people achieve a greater height stature, people tend to thrive, brain development is better,” he said.

He added that this is the basis for a lot of food aid programmes.

“There is indeed evidence to show that you can hang on to more muscle, that you can improve a lot of health-related issues such as immunity with a higher protein intake,” said Prof Phillips.

If you’re challenged in any way from the discussed perspective, your protein requirements group.

People should thus be aware of the fact that protein intake that exceeds the minimum levels are associated with benefits, he said.

“There needs to be a change in mindset from taking just enough nutrients for prevention, to taking it to improve or build up immu-

Prof Phillips said he always quotes the late American fitness expert Jack LaLanne’s famous lines to sum up the debate on protein in diets and on exercise: “Exercise is king, nutrition is queen. Put them together and you have a kingdom.”

“Protein alone can do a little bit of the job, as well as being physically active, but instead of one being an addition to the other, it is actually a synergy - better together than when exercise is done alone or nutrition.”

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While the current recommended dietary allowance for adults is 0.8g of protein per kg of body weight per day, recent research shows the new minimum intake for older people is closer to 1.2g per kg per day.

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(0.8g per kg per day) and older
It is not hard to fill up on protein as both animal and plant foods contain this macronutrient, which is made of basic building blocks called amino acids.

But not all protein foods are created equal as some contain more amino acids than others.

Professor Stuart Phillips from the Department of Kinesiology and School of Medicine at McMaster University in Canada, who was recently in Singapore for a symposium, said a mixture of animal and plant protein would be the best way.

“The general rule of thumb is that animal protein tends to be of better quality as it has more essential amino acids and it is more digestible than plant protein,” he said.

“Having said that, I would never say no to plant-based diets – people can do very well with this diet, only that you'd have to be a bit more judicious about choosing your meals and how you complement your proteins.

Eating a lot of animal proteins can also become an issue.

“For example, if you ate more meat, that means a lot of saturated fat and cholesterol,” said Prof Phillips.

Dr Samuel Chew, a senior consultant at the department of geriatric medicine at Changi General Hospital, said both meat and plant proteins can help older people build muscle mass, provided they are consumed in the right amounts and frequently enough.

This means consuming 20g to 30g of protein for each of the three meals of the day. A 100g portion of lean chicken meat or soya bean can provide 30g of protein while a 100g serving of tofu provides 17g of protein. A large egg contains about 6g of protein.

The Health Promotion Board’s webpage on the My Healthy Plate guide recommends two to three servings of a palm-sized piece (90g) of fish, lean meat or skinless poultry, or two small blocks soft bean curd (170g); or ⅓ cup or 120g of cooked pulses such as lentils, peas, beans as sources of protein.

Dr Chew said two servings will provide enough protein for a young adult weighing 60kg, but not quite enough for an older person of the same weight.

If the 60kg older person has chronic or acute illness, or if he is actively taking part in resistance exercise training, then he will need to eat more protein.

Three servings of the recommended protein food sources would be enough, he said.

Both meat and plant proteins can help older people build muscle mass, provided they are consumed in the right amounts and frequently enough, said Dr Samuel Chew of Changi General Hospital.

Dr Chew said dietary sources can be supplemented by oral nutritional supplements in times of illness or recovery from illness when the appetite may be poor.

In general, whey protein powder is safe and can be used to increase the amount of total protein intake, he said.

However, individuals with chronic kidney disease must check with their doctors before taking large amount of protein supplements in their daily diet, he added.

Prof Phillips said research is starting to support an emphasis on the intake of the amino acid leucine, which plays a central role in stimulating muscle protein synthesis. Animal protein provides the best source of leucine to activate muscle protein synthesis in combination with protein supplementation. The Department of Public Health, Epidemiology and Health Economics at the University of Liege in Belgium, who was in Singapore recently, said the use of Vitamin D in combination with protein supplementation could be of potential interest in sarcopenia.

Many clinical trials have shown that Vitamin D can have an impact on muscle and skeletal muscle growth, he added.

Professor Olivier Bruyere, from the Department of Public Health, Epidemiology and Health Economics at the University of Liege in Belgium, who was in Singapore recently, said the use of Vitamin D in combination with protein supplementation could be of potential interest in sarcopenia. Many clinical trials have shown that Vitamin D can have an impact on muscle and skeletal muscle growth, he added.

Overall, a balanced diet containing enough protein is needed to fight sarcopenia, particularly during periods of illness, said Dr Chew.

However, if one wants to build muscle mass, then consistent resistance exercise training will also be required as it is a powerful stimulus for muscle protein synthesis, or the process of building muscle mass, he said.

This is especially important in older and very old persons, added Dr Chew.

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Sources: ASSOCIATE PROFESSOR RESHMA MERCHANT, HEAD OF THE DIVISION OF GERIATRIC MEDICINE, NUH
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