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The longevity diet - can it add years to your life?

Dr Longo, a specialist in ageing, imagines a future where we can make it to 110 years old in good health – and it all comes down to what, when and how much we eat. This is the goal of his so-called longevity diet, a meal plan that isn't just designed to help prevent disease, but also to slow down ageing in our bodies. What does it involve? And what does the evidence say?

What is the longevity diet?

Dr Valter Longo published "The Longevity Diet" in 2018, complete with eating rules and recipes designed to help you live to a healthy old age.

Far from being the latest fad, the diet is a product of Dr Longo's scientific research as the director of the Longevity Institute, University of Southern California - one of the leading centres for research into aging and agerelated disease.

The longevity diet involves a carefully balanced, mainly plant-based diet and intermittent fasting. This also includes Dr Longo's fasting-mimicking diet technique several times a year.

The professor claims this diet plan can:

- Help you live for longer in good health.
- Reduce your chances of developing diabetes, cardiovascular disease, Alzheimer's disease and cancer.
- Prevent age-related bone and muscle loss.
- Help you reach a healthy weight and reduce tummy fat.

The longevity diet rules

The idea is that you can follow this diet for an indefinite amount of time. According to Dr Longo, if you want to extend your life through your diet, this needs to be an ongoing lifestyle choice that you can maintain long-term. Although a wide range of tasty foods are accepted, commitment may not always be easy, as there are several restrictions in place.

For example, if you follow a typical Western diet of processed foods and lots of meat, you may find you need to make big changes.

What to eat on the longevity diet

The longevity diet is almost vegan, but certain seafood is allowed, and there's a little room for meat if you're unable to cut it out completely. The plant-based foods to focus on are:

- Leafy green vegetables such as spinach and kale.
- Fibre-rich vegetables such as sweet potato and carrot.
- Fruits all kinds allowed, and fresh where possible.
- Beans and legumes such as chickpeas and lentils.
- Nuts and seeds such as cashews and chia seeds.
- Wholegrains such as wholemeal bread and brown rice.
- Olive oil a more nutritious cooking choice compared to vegetable oils and butter.
- Multivitamin supplements once every three days.

Plant-based diets are strongly linked with better overall health and lower rates of cancer and cardiovascular disease¹. More recently, studies have reported lower mortality rates in adults who eat a plant-based diet². Olive oil is a healthy fat used liberally in the Mediterranean diet, followed by many people in the Blue Zones - the regions where people consistently live the longest.

You are also allowed 2-3 meals with low-mercury seafood each week. Avoid choices containing high amounts of mercury, a chemical that in high amounts can have a toxic effect on the lungs, kidneys, and digestive, nervous and immune systems³. The seafoods to focus on include:

- Salmon.
- Sardines.
- Cod.
- Trout.
- Anchovies.
- Sea bream.
- Prawns.
- Cockles (clams).

The above are either high in omega-3 fatty acids, vitamin B12, or both. These substances are associated with a healthy lifespan - a potential increase of almost five years in the case of omega-3^{4,5} - but aren't available in large enough amounts through plant-based foods alone.

If you can't commit to cutting out meat from your life completely, the suggestion is to limit it as much as possible. For example, you may use it in small amounts to add flavour to plant-based dishes - but using them as the centrepiece for meals is ruled out.

Protein

Because low-protein diets have been linked to living longer, the longevity diet limits how much protein you can eat⁶. However, not getting enough protein can also cause **health problems**, which is why Dr Longo creates specific daily intake guidelines in his book. For example:

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- If you are under 65 years, keep protein intake between 0.31 grams and 0.36 grams per pound of body weight.
- For example, if you weigh 130lb (59kg) this comes to 40-47g per day the equivalent of one salmon fillet with 100g (half a cup) of chickpeas.
- If you weigh 200-220lb (90-100kg), this comes to 60-70g per day - equal to a tin of sardines and 100g (half a cup) each of lentils and pinto beans.
- If you are over 65 years, it's important to eat more to prevent muscle loss - you can get this from animal white meat, as well as dairy products from goats and sheep.

What to avoid on the longevity diet

If you're used to a typical Western diet - one that's high is sugars, saturated fats, and processed starchy foods - there will be a lot to cut out. These foods have a direct effect on ageing, including raising blood sugar levels and inflammation.

- Processed sugar such as granulated sugar and syrup.
- Saturated fats found in butter, baked treats, and processed meats like sausages.
- Refined starches such as white bread, white flour, and pastries.

It's well-established that these foods are bad for us. However, you'll also need to avoid, or extremely limit, dairy and meat - although the evidence here for health and longevity is less clean-cut.

Avoid or limit

- Dairy such as cheese, milk and yoghurt.
- Meat (in excess) such as chicken, beef and pork.

The idea is that dairy and meat - and especially high-fat dairy foods and red meats - can cause long-term inflammation in the body, linked to many serious age-related health problems. However, it's not yet known if avoiding meat and dairy altogether is helpful. In fact, many experts believe it may be enough to simply choose low-fat dairy products, like fat-free Greek yoghurt, and lean meats, like chicken⁷.

When and how much to eat on the longevity diet

There are also specific rules about when you can and can't eat, as well as your portion size:

- Intermittent fasting you should eat within a 10 to 12 hour time period and fast for the remaining 14 to 12 hours in each 24-hour window.
- 2. **Number of meals** if you are a healthy weight or lose weight easily, have three meals a day and one low-sugar snack up to 100 calories. If you are overweight or gain weight easily, have two meals a day breakfast and either lunch or dinner and two low-sugar snacks up to 100 calories.
- 3. **Night-time eating** you should avoid food 3 to 4 hours before bedtime.

What science supports these rules?

- Intermittent fasting there's lots of evidence that intermittent fasting can reduce your chances of age-related diseases, although how this technique affects cellular ageing is only beginning to be understood⁸.
- 2. **Number of meals** research suggests it's not typically enough to eat healthy foods if you're also eating too much of them. Calorie restriction, that still allows you to get all the vitamins and minerals you need, is linked to living for longer⁹. However, more human studies are needed here, and the best evidence is linked to the diets of people who live in **Blue Zones**.
- 3. **Night-time eating** while eating close to bedtime has been linked to poorer health and a longer expectancy in some studies, others suggest that it's okay so long as snacks are small, nutrient-rich, and low in calories¹⁰.

Fasting-mimicking diet

The rules above apply to most of the year, but for best results, Dr Longo also recommends you carry out his fast-mimicking fasting programme for five days, repeated several times throughout the year. The idea is that your body enters fasting mode while you eat small amounts of natural food ingredients and products.

Specifically, this includes:

- Eating mainly unprocessed vegetables, nuts and seeds for five days.
- Keeping these amounts small total calories for each day ranging from 800 to 1100 depending on your age, weight and sex.
- Of these calories, aiming for 60% from fats, 10% from protein, and 30% from carbs.

Dr Longo's own study of 71 people found that three repetitions of this fiveday diet, spaced out over three months, reduced important risk factors for ageing and age-related diseases, including diabetes, cardiovascular disease and cancer¹¹. However, more research is needed and other independent studies have concluded that its safety and effectiveness requires more investigation¹².

The fasting part of the longevity diet plan isn't right for everyone. This includes those who are pregnant or breastfeeding, have a sensitivity or allergy to nuts, or have diabetes. If you have a medical condition or problem, always check with your doctor if this is safe for you to try.

Does the longevity diet really work?

Founder of the diet and professor of ageing Dr Longo backs up his longevity diet with his own credible research on life expectancy and diet. Yet, more generally there's not a lot of widespread evidence on this topic, partly because this would involve very long studies that track people and their eating habits throughout their entire lives.

Before you make any big lifestyle changes, there are some knowledge gaps and safety considerations to think about:

- This diet isn't safe for everyone including people with a history of disordered eating, those who are pregnant or breastfeeding, people who are underweight or nutrient deficient, and those who may need more dairy, meat, or protein for medical reasons. People with diabetes should check with their medical team first and avoid the fasting techniques in this eating plan. If you're unsure, check with your doctor.
- There is little research into whether this specific diet can help people live longer - instead, the research is based on specific aspects of this diet, and a lot has been done by scientists affiliated with this diet.
- There aren't many long-term studies on diet and life expectancy in people - as these would need to span many decades.

• There is little evidence for cutting out dairy and meat altogether - it is not known if this can reduce your chances of age-related diseases.

Further reading

- 1. Norman and Klaus: Veganism, aging and longevity: new insight into old concepts.
- 2. Herpich et al: Role of plant-based diets in promoting health and longevity.
- 3. World Health Organization: Mercury and health.
- 4. Nair et al: Adaptive capacity to dietary Vitamin B12 levels is maintained by a gene-diet interaction that ensures optimal life span.
- 5. Science Daily: Higher levels of omega-3 acids in the blood increases life expectancy by almost five years.
- 6. Kitada et al: The impact of dietary protein intake on longevity and metabolic health.
- 7. Mathers et al: Nutrition and healthy ageing: the key ingredients.
- 8. Longo et al: Intermittent and periodic fasting, longevity and disease.
- 9. Hwangbo et al: Mechanisms of lifespan regulation by calorie restriction and intermittent fasting in model organisms.
- 10. Kinsey and Ormsbee: The health impact of nighttime eating: old and new perspectives.
- 11. Longo et al: Fasting-mimicking diet and markers/risk factors for aging, diabetes, cancer, and cardiovascular disease.
- 12. Boccardi et al: The potential of fasting-mimicking diet as a preventive and curative strategy for Alzheimer's disease.

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