Vitamin D's centenary

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The fourth vitamin – vitamin D – was discovered in 1922, but before that the action of vitamins A, B and C had been described.1 However, vitamin D is considered the oldest of them evolutionarily and even the oldest hormone of us humans. It is believed to have originated in phytoplankton photosynthesis deep in the ancient Atlantic Ocean, up to 750 million years ago.

Diseases such as rickets, scurvy and neuralgia have been known for centuries. However, their cause was unknown until the end of the 19th century when people began to associate a monotonous diet with these diseases, but in fact people did not know about the existence of vitamins at that time.

The British doctor Sir Edward Mellanby had noticed that rickets was very common in Scotland, but it was also called The English Disease. He suspected that this condition was related to malnutrition and decided to study the diet of the Scots, which consisted largely of oatmeal. He therefore decided to breed dogs that he kept indoors on oats and demonstrated that they developed a bone disease similar to rickets. Sir Mellanby managed to cure the dogs with cod liver and at first thought it was a medical condition caused by vitamin A deficiency.1

The biochemist Elmer McCollum at John Hopkins University wanted to prove Sir Mellan's hypothesis, but McCollum had discovered vitamin A in 1914. He decided to remove the vitamin A from the cod liver paste given to the dogs. With this cod liver treatment, it was not possible to prevent eye cream in the dogs, which was known to humans as a disease related to vitamin A deficiency, but to his surprise, the mash still cured the bone eye cream in the dogs. McCollum called this previously unknown factor vitamin D or the fourth vitamin. 2

The German Adolf Windaus then received the Nobel Prize in Chemistry in 1928 for his research on sterols and their relationship to vitamins. However, it wasn't until 1932 that the chemical composition of vitamin D became known when Askew managed to isolate vitamin D2.3 A few years later, scientists realized that unlike other vitamins, the human body could produce the active form of vitamin D by exposing the skin before sunlight. It is still debated whether vitamin D is actually a vitamin or a hormone, unless it is both. It wasn't until 1969 that the cell receptor for vitamin D was described, and in the early 1960s people's understanding of the interaction between the skin, liver and kidneys to activate vitamin D increased. Later, a physiological understanding of the effects of vitamin D3 on phosphorus and calcium metabolism and thus bone health came. In Iceland, doctors have long recommended fish oil and vitamin D. Jón Þorsteinsson, rheumatologist and professor was at the forefront of encouraging patients with inflammatory diseases to ensure adequate vitamin D intake. In 1995, measurements of vitamin D began at Reykjavík Hospital in Fossvogur, at the insistence of Professor Gunnar Sigurðsson. In the past year, about 31,000 measurements of vitamin D were carried out in this country.4 We should therefore be well aware of the nation's vitamin D status and also the seasonal fluctuations in our vitamin D values, who live so far north on earth.

Jón Þorsteinsson was right about the benefits of fish oil and vitamin D for rheumatic patients, far ahead of his time. Recent studies have shown that patients with lupus and autoimmune diseases do better if they ensure they get enough vitamin D. In addition, studies have shown the importance of vitamin D for bone health and that it ensures better muscle strength and nerve transmission, thus reducing falls and fractures in the elderly.

Increased knowledge and understanding of the role of vitamin D in the development of various types of pain problems and the development of chronic diseases, such as diabetes, hypertension, neurological diseases, malignancies and other diseases, is also being built up. Future studies must determine whether vitamin D reduces age-related dementia and improves the skills and health of the elderly.

Pediatricians have also studied the significance of vitamin D in recurrent ear infections and ear infections in children.

During the corona virus pandemic, people's interest and curiosity has arisen as to whether vitamin D has an effect on the progression of the COVID-19 disease. Large studies have shown that the risk of transmission and serious infection with intensive care is higher among those with lower levels of vitamin D in the blood than those with normal or high levels . to correct for, but it can be concluded that due to social isolation and being indoors for long periods of time during COVID times, it can be assumed that a large part of the population will need to ensure a higher vitamin D intake in the coming seasons.

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Sources

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Centenary of vitamin-D

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