

VITAMINS

Before the invention of vitamins, some strange diseases were widespread everywhere in the world. Seamen who sailed all year long were prone to catching a type of scurvy disease (Vitamin C deficiency), where they had difficulty to stop a bleeding wound. People who frequently took white rice in their meals had a higher tendency to catch a type of beriberi disease (Vitamin B1 deficiency), where they would feel a great bout of pain when they walk.

In southern part of Europe, there were people who had a type of skin peeling disease in which their skin turned dry and hair fell off.

Eventually such patients would experience redness and ulceration in the skin. People were frightened by all such diseases yet nothing could be done.



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Professor Nikolai Lunin (1853 – 1937), who was born in Basel, Switzerland, was the ‘nemesis’ of such diseases. The vitamins in which he did research on were later found to be successful in treating these diseases.

In 1881, Lunin conducted an experiment, in which he fed some mice with an artificial mixture of milk constituents (proteins, fats, carbohydrates and salts) and other mice with whole milk. The former were found to be low in spirit, and died not long after that.

On the contrary, the mice fed with whole milk developed normally.

In an incident, he inadvertently poured whole milk to the dying mice which had all the while been fed with the artificial mixture. The mice miraculously survived and recovered!



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Therefore, Lunin arrived at a conclusion – other than the known principal ingredients, natural food must contain small traces of unknown nutrients that were essential for good health and life. Without these unknown yet crucial nutrients, one would fall ill or even die.

Lunin then published his findings, which led to enthusiastic response from the scientific community. Other scientists followed in his footsteps and continued studying the same subject.

English biochemist Sir Frederick Gowland Hopkins was an expert in food research. In 1912, Hopkins endorsed Lunin's theory through his series of animal feeding experiments.

He discovered that other than pure salts, proteins, fats and carbohydrates in animals' diets, their bodies also contained unidentified supplements which supported their growth and survival. He called these supplements as 'accessory food factors'.



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Hopkins held the perception that like animals, human also needed the 'accessory food factors' to support growth and health. Even though both Lunin and Hopkins did not clearly specify the substances of the food factors, their findings had created a precedent for scientists to study vitamins in the future. At present, different scientists have found more than 20 kinds of vitamins.

Food for Thought:

- Careful observation, a rich imagination and the ability to apply scientific and technological knowledge are needed in innovation and invention.
- To achieve better results, innovation and invention cannot be individually completed. Accumulated results from predecessors need to be continuously improved on.

