

SCIENCE FOR ALL

Relevant for: Science & Technology | Topic: Biotechnology, Genetics & Health related developments

A doctor holds a bag of blood plasma donated by a coronavirus survivor. File | Photo Credit: AP

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Lipidomics is an analytical method that provides detailed insights into the fatty acid profiles in blood plasma. Fatty acids occur in the human organism mainly as part of complex molecules, called lipids. Based on their molecular structure, they are classified into numerous different lipid classes and types. The sum of all of them within an organism is called the lipidome.

Understanding the lipid metabolism plays an important role in better deciphering cardiovascular diseases and type 2 diabetes. However, little is known about the molecular relationships. Using lipidomics, a research team recently identified those lipids that are statistically associated with cardiovascular disease and type 2 diabetes. In addition, the scientists found that a diet with an increased proportion of unsaturated fatty acids (FAs) leads to a reduction in risk-associated lipids and an increase in low-risk lipids.

Cardiovascular disease is the leading cause of death worldwide, accounting for around 18 million deaths per year. People with type 2 diabetes have a two- to threefold increased risk of suffering a heart attack or stroke. Therefore, there is a need to identify biomarkers that can indicate the development of disease at an early stage in order to prevent or at least mitigate its onset. The team found about 69 lipids associated with disease risk. Using lipidomics, researchers aim to identify a lipidomics-fingerprint in the blood that depicts the effects of a test diet and check whether it is associated with long-term risk of cardiovascular disease.

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