# Virta 360 Blood Test

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*The Virta 360 Blood Test is based on award-winning technology by Finnish biotech company Nightingale Health. The technology is based on NMR spectroscopy, a pioneering scientific method where blood samples are placed in a strong magnetic field to measure the concentrations of many important molecules related to metabolism and health.*

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**Nightingale's technology** has been used in over 150 scientific studies, providing a comprehensive look into the connections between blood measurements and health status [Soininen, 2015 and Würtz, 2017]. Below are some examples of study findings that form the basis of the Blood Test results included in Virta 360. These scientific studies involve more than 10,000 (initially healthy) participants.

A recent study published in Circulation, showed that several blood measurements of biomarkers are related to the risk of developing cardiovascular disease [Würtz,2015]. By combining the biomarkers, measured by Nightingale, together with traditional risk factors (such as high blood pressure and smoking), researchers were more accurately able to predict the future onset of cardiovascular disease than by using the traditional risk factors alone.

Other studies have shown that several of Nightingale's biomarkers measured from blood, including fatty acids and amino acids, can predict the risk of developing type 2 diabetes later in life [Mahendran, 2013 and Guasch-Ferré, 2016]. Many of these blood biomarkers are also related to insulin resistance, a metabolic condition that can lead to type 2 diabetes. Studies have demonstrated that the relationship between biomarkers and insulin resistance are already present in many healthy young Finnish adults [Würtz, 2012].

Finally, a new study has demonstrated that Nightingale's measurement of glycoprotein acetylation (GlycA), related to chronic inflammation, can indicate the risk of many different types of diseases. These include cardiovascular disease and type 2 diabetes, as well as chronic inflammatory conditions, such as chronic lung diseases [Kettunen, 2018].

The Virta 360 risk ratings and the population averages of the different markers in the results are based on scientific analyses of the Finnish population and data collected by the Finnish National Institute for Health and Welfare.

## References

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