Mapping the genetic locus for triglycerides

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Researchers have mapped out a region on human chromosome 1 that contributes to genetically elevated blood triglyceride levels, a major risk factor for heart disease.

Triglycerides (TG), the main form of dietary fat, continuously circulate in the blood, but if their concentration elevates the risk of atherosclerosis and subsequently heart disease increases. Circulating TG levels depend on many factors including diet, exercise, and smoking, but around 40% of the variation in the population is due to genetics.

To locate the genes contributing to increased TG levels, Qing Wang and colleagues scanned 714 Caucasians from 388 families with premature heart disease. They identified a novel region on chromosome 1, 1p31-32.

While this genetic locus does contain 375 known genes, the researchers highlighted three genes that are especially promising candidates: angiopoietin-like 3, which inhibits enzymes that break down fats; the receptor for the appetite hormone leptin; and sterol carrier protein 2, which helps convert cholesterol into bile acids.

The researchers also note that another recent study identified a single nucleotide polymorphism associated with elevated TG levels in the exact same region, solidifying this part of chromosome 1 as the TG region.

Source: American Society for Biochemistry and Molecular Biology