

Genetic 'signature' discovered in plaque

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Italian researchers may have identified a genetic "signature" for dangerous plaque that leads to stroke.

Reporting from their study published in *Stroke: Journal of the [American Heart Association](#)*, the researchers said a pattern of five microscopic bits of genetic material called microRNAs (miRNAs) — a genetic "signature" — were present only in the plaque from patients who had experienced a stroke.

This is the first report to suggest that miRNAs may provide an important clue about which plaque in artery walls is the most dangerous.

Plaque is made up of fat, cholesterol, calcium and other things found in the blood. Plaque can be "stable" or "unstable." Some remains as a bump or streak on the artery wall and others cause clots that lead to a heart attack or stroke.

Researchers studied 31 patients who had plaque build-up but had not had a stroke and 22 patients who had [plaque](#) and had experienced a stroke. They looked for miRNAs.

MicroRNAs are shorter molecular chains than messenger RNA, which take the genetic information contained within the DNA and allow it to be turned into proteins with various functions. MicroRNAs don't translate genetic information, but they bind to the longer messenger RNAs and act as an "on/off" switch to help regulate protein production.

By identifying the specific miRNA signature, researchers hope to find new ways to prevent and treat [stroke](#). For example, new medicines can be designed to hone in on plaques with the potential to rupture.

Provided by American Heart Association

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