

A New Diet-Related Health Problem, TMAO

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TMA, the short-hand name for trimethylamine, is a break-down product produced by our gut bacteria as they decompose dietary animal and plant foods containing carnitine and, to a lesser extent, choline. Animal protein foods, like meat, fish and poultry, are much richer in carnitine than plant protein foods. After TMA is absorbed from the intestine into the blood, it is converted in the liver to TMAO, trimethylamine-N-oxide, which promotes vascular inflammation, clotting and accumulation of cholesterol in blood vessel walls. High blood levels of TMAO have been linked to increased risks of kidney failure, high blood pressure, diabetes, heart attack, stroke, colorectal cancer and mortality. Higher TMAO levels are usually seen in those who consume large amounts of animal protein foods.

Vegans, vegetarians and those who follow the Mediterranean diet guidelines generally have lower TMAO blood levels, because they consume less carnitine-heavy animal protein and more foods rich in anti-inflammatory bioflavonoids. The best foods to minimize TMAO levels are leafy greens, berries, nuts, seeds, whole grains, and pulses, the dense, seed portions of legumes, like lentils and chickpeas.