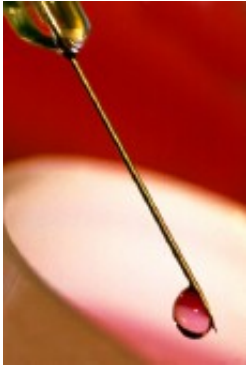


Metabolites linked to insulin resistance in normoglycemia

23 April 2012



"Metabolic signatures extending beyond obesity and lipid abnormalities reflected the degree of insulin resistance evidenced in young, normoglycemic adults with sex-specific fingerprints," Würtz and colleagues conclude.

More information: [Abstract](#)
[Full Text \(subscription or payment may be required\)](#)

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(HealthDay) -- Twenty metabolites, including amino acids, intermediates in glucose synthesis, ketone bodies, and fatty acids, are associated with insulin resistance, according to a study published online April 17 in *Diabetes*.

Peter Würtz, Ph.D., from the University of Oulu in Finland, and colleagues performed metabolic profiling using high-throughput nuclear magnetic resonance spectroscopy in 7,098 Finns (mean age, 31 years; 52 percent women).

The researchers identified 20 metabolites that were significantly associated with the homeostasis model assessment of [insulin resistance](#) (HOMA-IR). These included branched-chain and aromatic amino acids, intermediates in gluconeogenesis, ketone bodies, and fatty acid composition and saturation. Associations for amino acids Leu, Ile, Val, and Tyr were sex- and obesity-dependent, with significant associations only seen in abdominally obese women. Protein energy intake was associated with some [amino acids](#) (Val, Phe, Tyr, and Gln) but not with the insulin resistance index. One of 12 genetic determinants of HOMA-IR, a variant in *GCKR*, was significantly associated with 12 [metabolites](#).

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