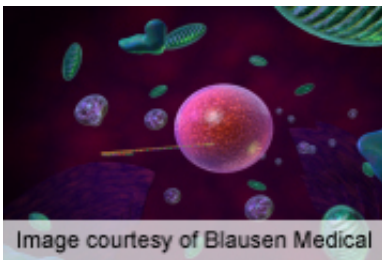


Circulating MicroRNAs linked to type 2 diabetes

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Circulating microRNAs are associated with type 2 diabetes, and their levels vary with insulin action, according to a study published online Jan. 29 in *Diabetes Care*.

(HealthDay)—Circulating microRNAs (miRNAs) are associated with type 2 diabetes (T2D), and their levels vary with insulin action, according to a study published online Jan. 29 in *Diabetes Care*.

Francisco J. Ortega, Ph.D., from the Institut d'Investagació Biomédica de Girona in Spain, and colleagues assessed the circulating miRNA profile in 12 men: six with normal [glucose](#) tolerance (NGT) and six with T2D. In an extended sample of 45 men with NGT and 48 with T2D, the association of 10 circulating miRNAs with T2D was validated cross-sectionally. Longitudinal validation was performed in 35 patients with T2D who were recruited in a randomized three-month metformin trial. In seven healthy volunteers, circulating miRNAs were also assessed before and after a six-hour hyperinsulinemic-euglycemic clamp and

[insulin](#) plus intralipid/heparin infusion.

In patients with T2D, the researchers identified increases in three miRNAs and decreases in seven miRNAs. After controlling for confounders, miR-140-5p and miR-423-5p independently accounted for 49.5 percent of fasting glucose variance. A discriminant function of four miRNAs (miR-140-5p, miR-423-5p, miR-195, and miR-126) was specific for T2D, with 89.2 percent accuracy. Significant changes in circulating miR-192, miR-140-5p, and miR-22 were seen with metformin but not placebo, in parallel to reduced fasting glucose and glycated hemoglobin. Decreased miR-222 was seen with insulin infusion during clamp, while increases in circulating miR-222 and miR-140-5p were seen with the intralipid/heparin mixture.

"This study depicts the close association between variations in circulating miRNAs and T2D and their potential relevance in [insulin sensitivity](#)," the authors write.

The study was partially funded by an EFSD/Lilly Fellowship award.

More information: [Abstract](#)
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