

PAEDIATRICS

Circulating microRNAs—predictors of obesity?

The profile of circulating microRNAs (miRNAs) in children might be used to predict the development of future obesity, according to new findings from Spain.

“We hypothesized that a specific miRNA profile exists in children that predicts the subsequent development of obesity,” remembers senior investigator José Manuel Fernández-Real. Building on their previous research, which has shown that a specific miRNA ‘signature’ of human adipose tissue is associated with obesity and the differentiation status of adipocytes, Fernández-Real and his team compared the circulating miRNA profile of lean and obese children. The researchers then cross-sectionally and longitudinally validated relevant miRNAs in a second cohort.

In total, 15 circulating miRNAs were significantly dysregulated in prepubertal children with obesity. The concentration of these circulating miRNAs was significantly

associated with BMI and other measures of obesity, such as percentage fat mass and waist circumference. Some of these miRNAs had previously been found to be dysregulated in adults with obesity.

The researchers are currently investigating whether therapies used to treat obesity and type 2 diabetes mellitus affect the profile of circulating miRNAs. “Some miRNAs might be used to anticipate ponderal changes in children,” suggests Fernández-Real. “Perhaps the population with deregulated miRNAs should be targeted early for a closer follow-up.”

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