

Back to basics: Researcher takes a closer look at hormone secreted by fat cells

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Virginia Commonwealth University School of Medicine researcher and clinician Edmond P. Wickham III, M.D., is examining how fat cells may directly contribute to health problems related to being overweight.

Prior to 1995, it was believed that fat tissue was just an area for storage, but researchers now know that it is an active, endocrine organ secreting many different hormones and substances into the blood that can contribute to the development of health problems.

Through a National Institutes of Health Career Development award, Wickham, an assistant professor in the Division of Endocrinology and Metabolism in the Departments of Internal Medicine and Pediatrics, is examining adiponectin, a hormone secreted by fat cells that packs a beneficial punch - it has anti-diabetic and anti-inflammatory properties.

For two years, Wickham has been looking at alterations in this hormone in children and adolescents to determine how these alternations may possibly contribute to the development of type 2 diabetes and the initial vascular damage that can lead to future cardiovascular disease.

Although adiponectin is made and released into the blood by the [fat cells](#), levels of this beneficial hormone are often low in patients who are overweight or obese.

According to Wickham, low levels of adiponectin can already be seen in children and adolescents who are obese, said Wickham. Furthermore,

using an ultrasound to image the [blood vessels](#) of obese adolescents, previous research has shown that their blood vessels are already going through changes that would predict there is ongoing damage even though they are many years away from developing clinically significant cardiovascular disease.

“Unless something changes, the damage will continue,” Wickham said.

Fortunately, levels of adiponectin appear to increase with weight loss and improved physical fitness, said Wickham. Moving forward, Wickham and his team hope to learn more about specific ways that raising levels of adiponectin may prevent or reverse evidence of vascular damage early in life.

“Understanding how adiponectin helps the body repair damaged blood vessels could lead to the development of novel therapies to prevent incipient cardiovascular disease in children and young adults, as well as new treatment modalities for established cardiovascular disease,” he said.

Provided by Virginia Commonwealth University

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