

Hormones May Hold Clues to Healthy Aging

Studies suggest adjusting them may help extend youth, but one expert urged caution

By Steven Reinberg
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WEDNESDAY, June 21 (HealthDay News) -- Specific hormones may play a key role in longevity and healthy aging, two new studies suggest.

Researchers found one hormone, adiponectin, at higher-than-average concentrations in 100-year-old women, while another study found that stimulating the body's production of growth hormone brought a youthful pep back to people in their 60s to 80s.

Both studies were presented Wednesday at the 6th International Congress of Neuroendocrinology, in Pittsburgh.

In the first study, Dr. Agnieszka Baranowska-Bik and colleagues from the University of Poland studied 133 women from 20 to 102 years of age, including 25 women who were 100 to 102 years old. The researchers were particularly interested in the women's levels of adiponectin.

Adiponectin is made by fat tissue and may be an important determinant of longevity. It is a peptide protein with anti-inflammatory properties that helps keep blood vessels clear of fatty deposits. Adiponectin also plays an important role in metabolism, particularly in the regulation of cholesterol and sugar.

Low levels of adiponectin may contribute to obesity, insulin resistance, diabetes or plaque deposits in the arteries. This combination of conditions is also called metabolic syndrome.

"We found significant differences in the centenarian women compared to other groups," Baranowska-Bik said. "We found that our centenarian women were healthier than the other women."

"The most important finding was that adiponectin levels were significantly higher in centenarian women," Baranowska-Bik added. "This may be connected with metabolic status and also with getting old and longevity."

The Polish team found that the "100-plus" group of women, in addition to having significantly higher levels of adiponectin, also had much lower levels of both insulin and the fat hormone leptin. They also scored better with respect to insulin resistance and total cholesterol.

Moreover, compared with the obese women, the oldest women had significantly fewer signs of high blood pressure and other symptoms of metabolic syndrome. "In addition, these women had significantly lower incidence of high cholesterol and insulin resistance, which are the symptoms of metabolic syndrome," Baranowska-Bik said.

The second study dealt with improving physical functioning in older adults by increasing the body's production of growth hormone.

Aging results in a lower level of growth hormone that, in turn, brings on steady declines in muscle mass, strength and exercise capacity. This can lead to a level of frailty that brings an end to independent living.

Lead researcher Dr. George R. Merriam, of the University of Washington/VA Puget Sound Health Care System, said his team sought to determine if hormonal and functional declines were related, and if boosting growth hormone levels might help halt or reverse that decline.

In their study, Merriam and his colleagues studied the effect of the growth-hormone stimulator capromorelin on 395 men and women 65 to 84 years old. Capromorelin is an investigational medication developed by the Pfizer drug company.

All of the participants had some mild limitation in their physical functioning. During the year of the trial, some patients

received capromorelin, while others were given a placebo.

Merriam's group found that, compared with a placebo, capromorelin, at any dose, caused an increase in growth hormone production. In clinical terms, this treatment resulted in an increase in muscle mass, improved heel-to-toe walking, and better stair-climbing ability.

"After six months people on the active drug showed improvement in tandem walking, and they continued to show improvement at 12 months," Merriam said. "At 12 months there was also a significant improvement in stair-climbing in the treatment group."

But whether capromorelin will be available commercially anytime soon is problematic, Merriam said.

"It's very difficult to get a drug for normal aging on the market, because the FDA does not consider aging to be a disease and therefore sets the bar very high," he said. "I would not consider these results conclusive. Drugs in this category may have hope for improving physical function and thereby hopefully prolonging older people's ability to live independently."

One expert is cautious about supplementing hormone levels to fight aging, because scientists simply doesn't yet understand the consequences of long-term use of these agents.

"The problems with all the hormones is that they have other effects," said Rafael de Cabo, an investigator at the Laboratory of Experimental Gerontology, part of the U.S. National Institute on Aging.

There can be many possible unintended effects, de Cabo said. "Before you can even think of giving these to humans, you have to be sure it is safe and doesn't have other implications," he said.

"Any time you try to tweak the neuroendocrine system, all the knobs are interconnected, so if you move one up or down there is an immediate response from the rest of them," de Cabo said. "It is not a golden bullet or an easy shot to fix the metabolism by a single compound."

More information

For more on healthy aging, head to the [**U.S. National Institute on Aging**](#).

SOURCES: Agnieszka Baranowska-Bik, M.D., University of Poland, Warsaw; George R. Merriam, M.D., University of Washington/VA Puget Sound Health Care System, Seattle; Rafael de Cabo, Ph.D., investigator, Laboratory of Experimental Gerontology, U.S. National Institute on Aging, Baltimore; June 21, 2006, presentations, 6th International Congress of Neuroendocrinology, Pittsburgh

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