Hormone Pill Touted as Life Extender

Animal studies set to test whether thyroxine can increase healthy lifespan

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A UK scientist says that a hormone already used in human treatments could extend lifespan by 30 extra years.

Credit: Tomasz Dobrowolski

Metabolism boost: A UK scientists says that the hormone thyroxine could extend lifespan by boosting metabolism

The hormone, thyroxine, increases metabolic rate. People lacking the hormone are treated with replacement therapy so they have a healthy metabolic rate.

Researchers at Aberdeen University have found in studies that mice with the highest metabolic rate live around 25% longer than mice with the lowest.

Professor John Speakman of Aberdeen and colleagues have now been awarded £450,000 by the UK Biotechnology and Biological Sciences Research Council to determine how thyroxine may beneficially affect metabolism rates and fight free radicals to extend lifespan.

Extra 30 years

Speakman, of Aberdeen's zoology department, says that if the four-year mouse study is successful and an appropriate dosage of thyroxine can be discovered, human trials could begin in the next decade.

"We have done work previously that had looked at mice and those with a higher metabolic rate they lived for a longer time," he says. "We have looked into the biochemistry of that and it seems to happen because they have a change in the mitochondria and that affects the body getting rid of free radicals."

The grant will allow the researchers to attempt metabolic tweaking by putting thyroxine in drinking water and determining its effect on lifespan.

"The difference between the age of a short-lived mouse and a long-lived mouse, converted into humans, we are looking at an increase in around 30 years," says Speakman. "It will be a healthy extension, nobody wants an extra 30 years in a nursing home. We are looking at giving people an extra 30 years of productive life."

Dangerous approach?

Critics have raised concerns about thyroxine as an antiaging drug, however, as people with excess thyroxine need medication to bring it to normal levels and avoid illness.

Furthermore, in an interview with BBC News endocrinologist Pierre Bouloux of Royal Free Hospital in London said that the research in mice would not directly apply to humans, as mice have a different metabolism.

Speakman, however, says it might be possible to find a dose of thyroxine that provides benefits without detrimental health effects. He also says that there are other molecules that could have similarly beneficial effects on metabolism.