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A lifespan-extending drug has limited effects on aging

July 25 2013

The immunosuppressive drug rapamycin has been shown to increase longevity in mice even when treatment begins at an advanced age. It is unclear if the extension of life also correlates with prolonged health and vigor.

In the current issue of the *Journal of Clinical Investigation*, Dan Ehninger and colleagues at the German Center for Neurodegenrative Diseases evaluated age-associated characteristics in mice treated with rapamycin. They found that rapamycin improved memory and spatial learning, reduced thyroid follicle size, and reduced body fat in older mice. However, many of these same attributes were also improved in young mice treated with the drug, indicating an age-independent drug effect.

The prevalence of cancer, a common cause of mouse mortality, was also decreased in older treated mice. The authors did find that rapamycin treatment had no effect on several age related symptoms, including cardiovascular and liver function, loss of muscle mass, strength retention, or balance.

These data suggest that rapamycin treatment may increase lifespan through reduction of cancer rates, and the drug may be useful for relief of some age related conditions.

In the accompanying commentary, Arlan Richards of the University of Texas Health Science Center at San Antonio suggests that clinical trials to study the effect of rapamycin on age related neurodegenerative

diseases of the elderly such as Alzheimer's disease should be considered.

More information: *J Clin Invest.* doi:10.1172/JCI67674