Energy demands lead to frailty in elderly, Tulane study says

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Keeping healthy in old age is a delicate balancing act, according to Tulane University researchers in a recent study in the *Journals of Gerontology*. S. Michal Jazwinski, lead author and director of the Tulane Center for Aging at Tulane University School of Medicine, says that declining health in the “oldest old” (people 90 years old or older) is associated with ever-increasing energy demands to maintain the body"s basic life-sustaining activities.

The total daily energy usage for a person can be divided into three parts: the resting metabolic rate, or RMR; the energy cost of physical activity; and the generation of heat within the body following the consumption of food.

The RMR is the amount of energy used by the body simply to support its basic life systems and organs, and it accounts for most of a person"s daily energy usageâ?? between 60 and 70 percent, according to Jazwinski.

Jazwinski"s team found that increases in the energy an elderly individual has to expend to maintain basic life processes are matched by greater frailty, signaling a decline in the individual"s health and a reduction in the energy reserve available for physical activity. This is connected to loss of muscle in women but not in men. Significantly, it is known that reduced physical activity lowers physical function ability.

“Lower energetic reserve leads to declining physical activity with age,” says Jazwinski, “This results in a vicious cycle, because physical activity is needed to preserve functional capacity and breaking this cycle may require different interventions in men and women. Regular exercise can benefit the oldest old as it does younger people. However, we are beginning to understand that it may have to be tailored differently to oldest-old men and women, striking the appropriate balance between strength and endurance.”