Turn Back Time

Look and Feel Younger - Exercise to Reverse the Signs of Age

By Jennifer Salter, MSW

Heart disease, diabetes, cancer, stroke and a multitude of other diseases are considered by most to be an inevitable consequence of the aging process. However, this accepted "truth" may not be true at all.

There is growing evidence that such health conditions are the result of poor lifestyle choices, including inactivity. From an evolutionary standpoint, our bodies are not meant to be sedentary – in times past, foraging and hunting meant that activity was a matter of pure survival. It is only in the last one hundred years that the daily life of most human beings has been devoid of physical activity. Our minds are firmly rooted in the knowledge economy, but physiologically we have thousands of years to catch up.

With this in mind, is there a fountain of youth? The answer to this ageold question is probably much simpler than anyone ever thought.

There is now genetic evidence that physically active individuals appear biologically younger than their inactive counterparts. A study published in the January 2008 issue of *Archives of Internal Medicine* sought to determine the effects on the internal aging system of sedentary versus active living. The authors measured leukocyte telomere length (LTL) – an established marker of aging – in 2401 white twins and found that those who participated in regular physical activity had longer LTL than inactive participants. The study \triangleright



Suggested Activities:

In accordance with the American College of Sports Medicine, (ACSM) Guidelines for Physical Activity Moderate Cardio (e.g. brisk walking) 30 minutes per day, 5 days per week OR



Vigorous Cardio (e.g. running) 20 minutes per day, 3 days per week



Strength Training 8 to 10 exercises (8 to 12) reps of each 2 times per week, to momentary muscle failure (when you can't do any more and must stop)

Adults Over 65

and those with medical conditions, should follow these guidelines as closely as they can. They should also include balance exercises if at risk of falling. authors state: "A sedentary lifestyle (in addition to smoking, high body mass index and low socioeconomic status) has an effect on LTL and may accelerate the aging process."

Resistance (weight) training also has an important role to play. Another study published in 2008 found that resistance training reverses aging in human skeletal muscle. It is known that loss of muscle and deficits in strength begin for most people around the age of 40. The study compared an older group (average age 68) with a younger group (average age 24). The authors of this paper found that resistance training in older adults twice a week for 26 weeks resulted in the reversal of gene expression of 179 genes associated with aging! Shockingly, the gene expression of the resistancetrained older adults was similar to the modestly active younger group.

In terms of cardiovascular fitness levels, it is well-established that a decline occurs with age. This drop takes place gradually after the age of 20 for men, and after age 35 for women. We now have evidence, however, that this decline is largely due to physical inactivity and an increase in body fat, as opposed to being an inescapable effect of aging! In fact, aerobic training for 24 to 52 weeks improves cardiovascular fitness, on average, by 16.9 percent! This is equivalent to gaining back 12 years of vigour. The authors of a meta-analysis of 30 studies on this topic state that, "progressive aerobic

training can boost the aerobic power of the elderly, potentially delaying the loss of independence by as much as 20 years."

What does this really mean in human terms? – It means the difference between developing health problems and losing independence at the age of 88, as opposed to 68.

Of course, some exercise is better than none at all, so don't stress if you find you cannot match the ACSM's guidelines– just do the best you can.

One more word of advice: Do not wait for intrinsic motivation to arise! It is very difficult to exercise when one is unfit and it can

"Lack of activity destroys the good condition of every human being, while movement and methodical physical exercise save it and preserve it."

> actually be uncomfortable. Instead, set weekly goals and work on achieving them, and be cognizant that it gets much easier with time. After three months of regular activity, most individuals will begin to derive enjoyment from their exercise sessions – which can then be harnessed for motivational purposes!

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