

**Exercise Really is the
Fountain of Youth!**



Change Your Exercise, Change Your Brain

- **Cognitive abilities best in those who exercise**
- **Improves brain blood flow**
- **Improves oxygen and glucose supply**
- **Increase in DNA cell repair**
- **Protect brain against things that hurt it, such as free radicals, high glucose levels, and high glutamate levels**

Exercise

- **After age 70, memory and other cognitive abilities are less likely to be impaired**
- **Improves brain metabolism of cholesterol and other lipids**
- **Improves insulin ability to regulate glucose**
- **Neuron response to stress is improved (especially in the hippocampus at least)**
- **Tone in blood vessels is improved because NO is enhanced**

Exercise

- **Lowers blood sugar**
- **Increases insulin sensitivity**
- **Helps reverse insulin resistance**
- **In a study, 40% of women were no longer insulin resistant after a week of moderate exercise of walking or cycling for an hour each day**

Hypertension, December 1997

Exercise Helpful For So Many Things

- ↑ **brain health**
- ↑ **metabolism**
- ↓ **new fat cells**
- ↓ **inflammation**
- ↑ **vitality**
- ↑ **agility**
- ↑ **bone density**
- ↑ **sense of well being**
- ↑ **longevity**
- ↓ **weight**
- ↑ **sexy**

Positive Effects on Mental Health

- **Improves cognitive function**
- **Enhance psychological well-being**
- **Decrease risks of Alzheimer's (AD) & dementia**
- **Promotes effects of antidepressants & anxiolytics**
- **Increase neurotransmitters afferent to hippocampus, including NE, S, Ach, GABA**
- **Up-regulates BDNF and neurogenesis**

Ma Q. Beneficial effects of moderate voluntary physical exercise and its biological mechanisms on brain health. *Neurosci Bull.* 2008 Aug;24(4):265-70.

Exercise Increases Average Longevity of Female Rats Despite Increased Food Intake and No Growth Retardation

- **Results show exercise improves average longevity of rats independent of decreased availability of energy for cell proliferation and growth.**
- **Also, provides evidence that an increase in food intake is not harmful when balanced by an increase in energy expenditure.**

Holloszy JO. Exercise increases average longevity of female rats despite increased food intake and no growth retardation. *J Gerontol.* 1993 May;48(3):B97-100.

But Not Too Much

- **DNA Damage After Exhaustive Treadmill Running in Trained and Untrained Men**
- **DNA damage in WBCs following exhaustive exercise.**
- **Induced by oxidative stress?**

Niess AM, Hartmann A, Grünert-Fuchs M, Poch B, Speit G. DNA damage after exhaustive treadmill running in trained and untrained men. *Int J Sports Med.* 1996 Aug;17(6):397-403.

Avoid Brain Injuries



Exercise

- **Table tennis**
- **World's 2nd most popular sport**
- **Aerobic chess**
- **Low brain injuries**
- **Upper and lower body coordination**
- **Cerebellar activity**

7 Reasons to Play Table Tennis



www.StrongCosmos.com

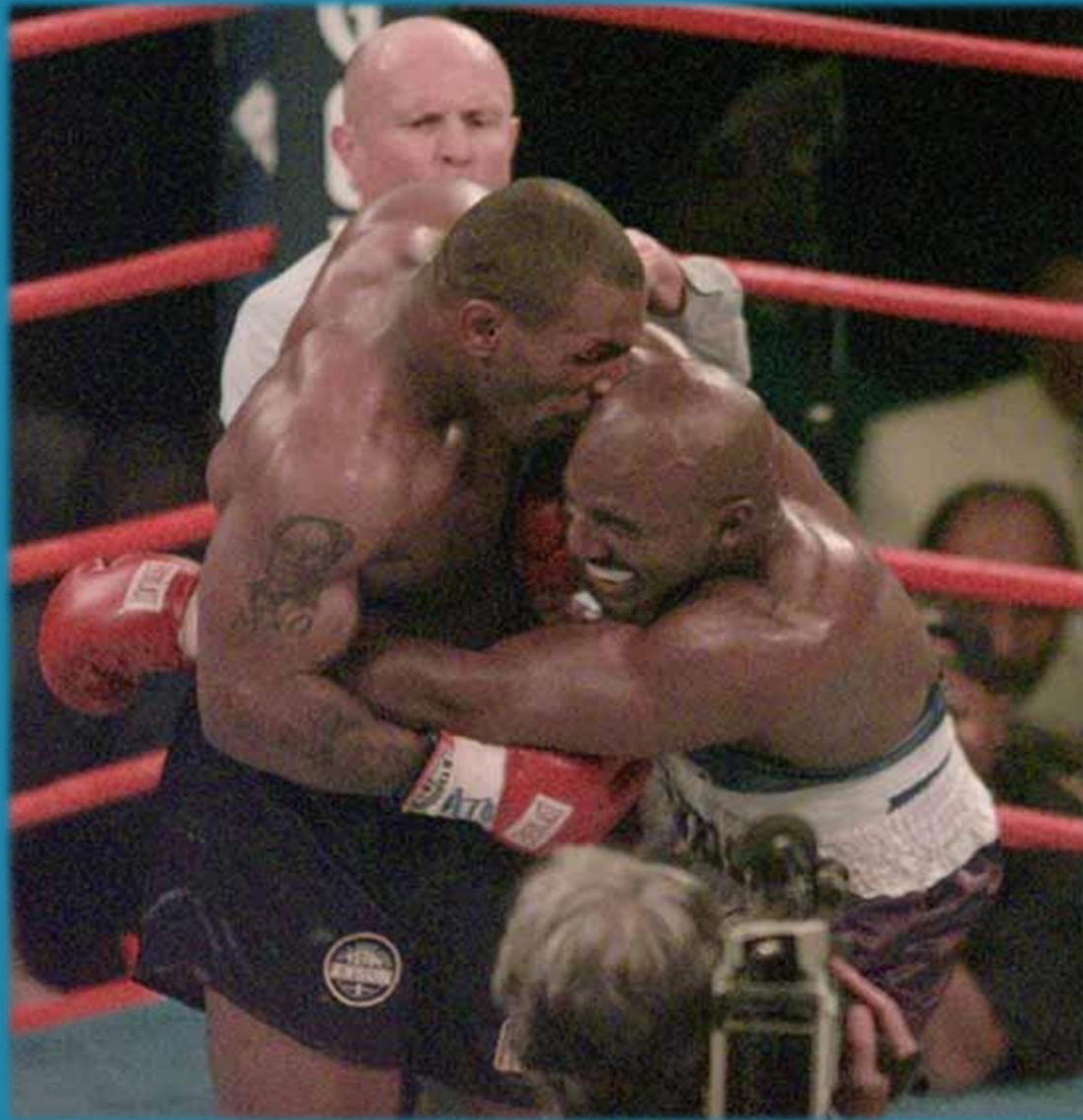
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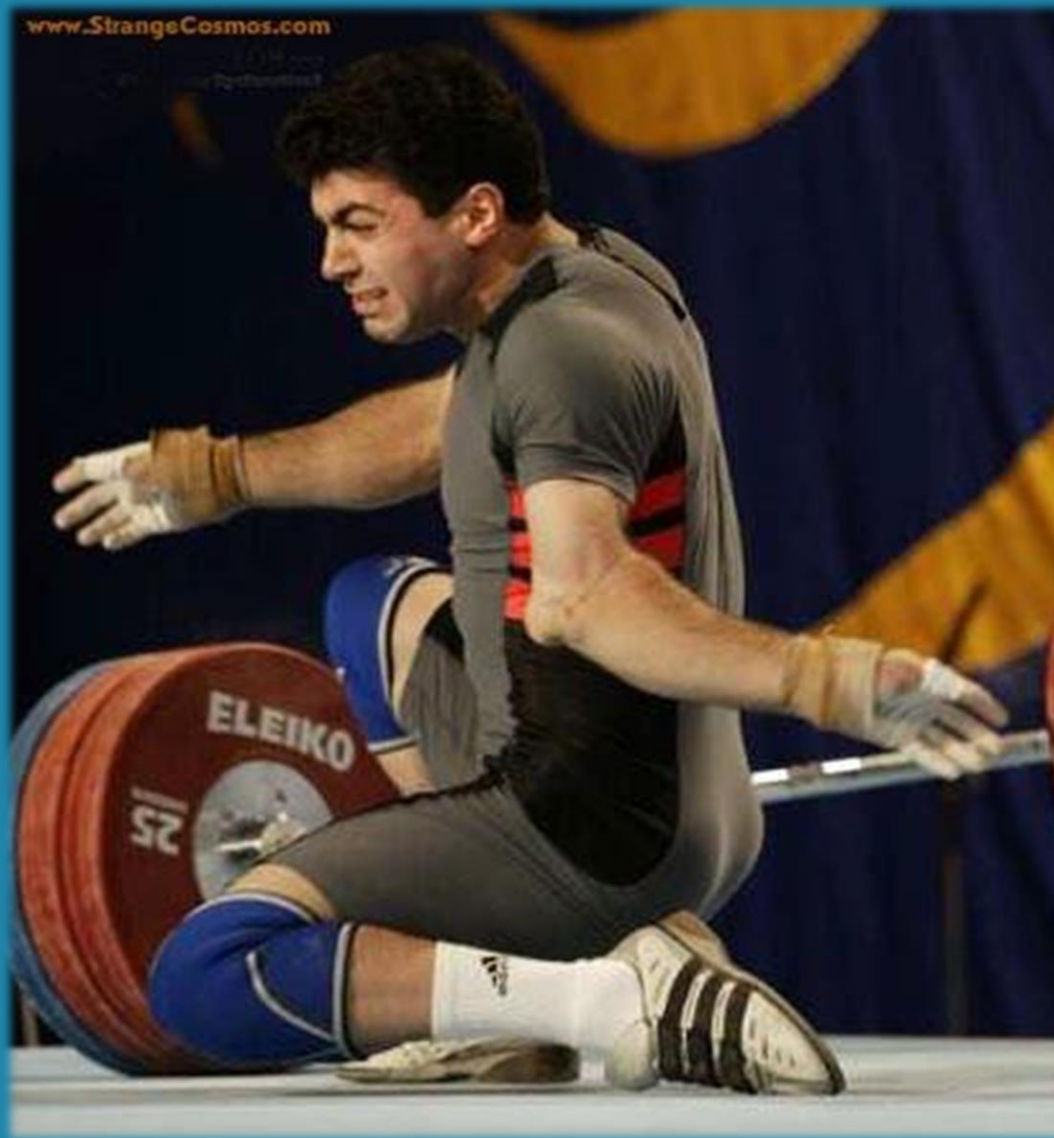
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