

# Scientific studies claim that laughter may help in the following manner:

Allow us to stress that “scientific” implies that there is a specific protocol (here all you have to do is laugh for a set amount of time on a regular basis) that anybody can apply, anytime, anywhere, and get the exact same outcome. This means that you yourself and all the people you know can have access to all of the benefits listed below if you laugh on a regular basis. Laughter Yoga helps you greatly with that. It is a form of cardio-vascular exercise that combines simulated laughter exercises with gentle breathing techniques. Limbs are inherently not required. All you need to participate is be able to breathe... Visit us online at [www.laughangeles.com](http://www.laughangeles.com) for more information.

## Boosts the immune system

Laughter appears to naturally boost the production of the following chemicals:

- Immunoglobulin A<sup>i\_ii\_iii\_iv\_v</sup>
- Other Immunoglobulins<sup>vi</sup>
- B cells<sup>vii</sup>
- Natural Killer Cells<sup>viii\_ix\_x\_xi\_xii\_xiii</sup>
- T-Cells<sup>xiv\_xv\_xvi</sup>
- Gamma Interferon<sup>xvii</sup>



Only a few studies have examined the duration of the immunoenhancement effects of laughter. The limited research along these lines suggests that a strengthened immune system is sustained for 30 minutes for IgA, IgG, number of B cells, activation and number of T cells, activation and number of natural killer cells, and gamma-interferon. The immunoenhancement effect was still present 12 hours later for IgA, IgG, number of B cells and gamma-interferon. No known attempt has been made to study durations beyond 12 hours.

## Improves heart function and boosts the circulatory system<sup>xviii\_xix\_xx</sup>

- Laughter may help protect you against a heart attack, according to a study at the University of Maryland Medical Center. The study, which is the first to indicate that laughter may help prevent heart disease, found that people with heart disease were 40 percent less likely to laugh in a variety of situations compared to people of the same age without heart disease.
- At a meeting of the American College of Cardiology, Dr. Wei Jiang of Duke University reported on how mood affected health. In a study of over 1,000 heart patients, Dr. Jiang discovered patients with mild depression had nearly twice the risk of death by heart failure than those with a more cheerful disposition.

## Enhances oxygen intake and stimulates the lungs

Frequent belly laughter empties your lungs of more air than it takes in, resulting in a cleansing effect – similar to deep-breathing. This deep breathing sends more oxygen-enriched blood and nutrients throughout the body.

- Dr William Fry in 1971 first demonstrated that laughter increases the heart rate, blood pressure, oxygen consumption, and works the muscles in the face and stomach. Shortly after, these levels drop, providing a relaxation response. While this is no substitute for real exercise, many seniors and bed-ridden patients don't have the option of other forms of physical exercise. For them, laughter is fundamental to good cardiac conditioning.
- Dr David Garlick of University of NSW School of Physiology & Pharmacology studies the effects of laughter on the respiratory system. Abdominal movements were measured during funny videos and documentaries. Laughter was followed by a long sigh and a large intake of breath, leading to better respiratory movement.

### **Relaxes muscles and promotes relaxation throughout the body<sup>xxi</sup>**

During laughter, various muscle groups are activated for periods of seconds at a time, while the period immediately after the laugh leads to general muscle relaxation. This post-laughter relaxation can last up to 45 minutes.

### **Just The Expectation Of A Mirthful Laughter Experience Boosts Endorphins<sup>xxii</sup>**

In a paper being presented in an American Physiological Society session at Experimental Biology 2006, Dr Lee S. Berk of Loma Linda University, reports that not only is there real science and psychophysiology, but just the anticipation of the "mirthful laughter" involved in watching your favorite funny movie has some very surprising and significant neuroendocrine/hormone effects. According to Berk: "The blood drawn from experimental subjects just before they watched the video had 27% more beta-endorphins and 87% more human growth hormone, compared to blood from the control group, which didn't anticipate the watching of a humorous video.

Endorphins are a natural painkiller as well as a "feel-good" hormone that help create a feeling of contentment and relaxation.

### **Relieves pain**

- In a study of 35 patients in a rehabilitation hospital, 74% agreed with the statement, "Sometimes laughing works as well as a pain pill." The patients had such conditions as traumatic brain injury, spinal cord injury, arthritis, limb amputations, and a range of other neurological or musculoskeletal disorders<sup>xxiii-xxiv</sup>.
- According to the New England Journal of Medicine, ten minutes of laughing can allow up to 2 hours of pain relief.

### **Balances blood pressure**

- Using laughter-provoking movies to gauge the effect of emotions on cardiovascular health, researchers at the University of Maryland School of Medicine in Baltimore have shown for the first time that laughter is linked to healthy function of blood vessels. Laughter appears to cause the tissue that forms the inner lining of blood vessels, the endothelium, to dilate or expand in order to increase blood flow<sup>xxv</sup>.
- Ten minutes of laughter drops 10-20mm in blood pressure (reference: America Medical Journal and AATH)



### **Improves mental functions (i.e., alertness, memory, creativity)**

- According to the American College of Cardiology, laughter stimulates the brain's reward center which releases dopamine and then stimulates the frontal lobe and enhances thinking.
- In a study of the effects of laughter on creative thought at the University of North Carolina (Barbara Fredrickson), the following results were given:
  - increased positive mental state
  - increased open mindedness
  - increased creativity
  - increased capacity to adapt to change
  - increased broad thinking
  - recommends a 3 to 1 ratio of positive comments to negative comments
- According to Robert Provine, a professor of psychology and neuroscience, most laughter is not about humor but about relationships between people. Mentally, laughter helps us cope with life by relieving our mental and physical tensions.

### **May increase lifespan**

- In a 20 year study at the Ohio Longitudinal Study of Aging and Retirement, results showed that a more positive view was connected to an increased lifespan of 7.8 years.
- In a study of patients with chronic kidney failure at the Norwegian University of Science and Technology & St. Olav's University Hospital, patients answered questions regarding age, gender, education, quality of life and sense of humor. If the patient belonged to the half that scored relatively high on sense of humor, the risk of dying within two years was reduced by 30 percent. The figures appeared after making considerations to aspects that could be caused by other health issues, the general quality of life, and other conditions. No other patient characteristics could predict life or death within two years as strongly as the score on the sense of humor.
- A study at the Norwegian University of Science and Technology (Sven Svebak) that included 54,000 Norwegians studied over a seven year period. Some of the results include:
  - adults who have a sense of humor live longer
  - in a study of a subgroup of 2015 people who had a cancer diagnosis, a great sense of humor cut chances of death by 70% as compared to people with a poor sense of humor
  - those diagnosed with a severe disease and a good sense of humor increased their survival rate by 35%

### **Laughter may also help to:**

- Reduce stress/tension<sup>xxvi</sup>
- Improve sleep
- Enhance quality of life
- Strengthen social bonds and relationships
- Produce a general sense of well-being



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