

# University and Journal Based Research on the Effects of Laughter

(These listings are in addition to those presented in the book *Teaching Is Too Important to Take Seriously!*)

## Education Topics

### American College of Cardiology

Laughter stimulates the brain's reward center which releases dopamine and then stimulates the frontal lobe and enhances thinking.

### ASCD Journal – Sheila Feigelson

Reasons (in 1991 high school study) for humor

- as a way of putting students at ease
- as an attention getter
- as a way to show teacher is human
- as important element of the collaborative environment

### Cal Tech – Allman and Watson

Studies showed that complex humor recalibrates our intuition, allowing us to make better social decisions.

### Cerebral Cortex – March Edition

In a study, the funnier subjects rated a cartoon, the harder the 2 hemispheres of the brain worked.

### Cornell University – Alice Isen

In a study of creativity, undergraduate students were divided into two groups. One group watched old TV comedies before being given a task, while the other group watched nothing before being given the same task. The task involved nailing a lit candle to a cardboard wall with a box of tacks. The group that watched the comedy shows was shown to be 3 times as likely to accomplish the task.

### Illinois State University

Bibliography on Humor and the Education of Adolescents and Adults provided by Don Nilsen, Arizona State University and Executive Secretary of International Society for Humor Studies – Revised October 2001

<http://www.cat.ilstu.edu/resources/teachTopics/biblHumor.php>

### Indiana University – Dolt Zillman

In a 22 year study, research showed humor can make the learning experience more pleasant. However, it must be tuned attuned to audience knowledge. It also showed that humor can be effectively used to enhance student attention, improve classroom environment and lower test anxieties.

### Johns Hopkins University – Ronald Berk

Through research Dr. Berk states that sharing a laugh helps students learn more. He states that to be effective, comedy must compliment, not distract from course material. This research was formally published in 2007 and in the book *Humor as an Instructional Defibrillator*.

### Johns Hopkins University Medical School

This study divided students taking a test into two groups. One group received a test with humorous instructions, while the other group received the exact same test, but without the humor. The group with the humorous instructions scored significantly higher than the other group.

### Middle Tennessee State

Two groups were given single sentences on the same topic. One sentence was humor, while the other was not. The students with the humorous sentence remembered the complete sentence and individual words better than the other group.

### National Research Council

Research shows students function more effectively when they feel respected and valued. Also they function poorly when disrespected and marginalized.

### NEA Journal – The Lighter Side of Laughter

Researchers believe that humor serves to arouse student interest and attention. This increase in turn motivates students and increases the likelihood they understand and retain information.

Beware – students laugh for a number of reasons. They might be amused but they might be unsure of what is going on, they might be following what others are doing, or it might be laughing because they're anxious and stressed.

### New Direction for School Development

Close relationships with teachers lead to higher levels of student engagement and achievement.

### New Horizons for Learning Quarterly Journal – Dee Dickinson

In looking at how to use laughter in multiple intelligence theory, Dickinson classified ways to use laughter in the following ways.

- Linguistic
  - Jokes, puns, satires, funny stories and anecdotes
- Mathematical
  - Humorous stories engage attention
  - Clarify meaning in non-threatening ways
  - Motivate previously fearful students to work more confidently
- Visual Spatial
  - Cartoons, witty posters, funny pictures
  - Also student cartooning
- Kinesthetic
  - Funny actions i.e. bodies into shapes of periods, commas and Question marks
- Musical
  - Funny songs, Musical puns, Funny Raps
  - Unexpected works best
- Interpersonal
  - Work in pairs, Creating skits
- Intrapersonal
  - Laugh at selves vs self deprecating

### Review of Educational Research – Osterman

Learning requires involvement and the best prediction of student effort and engagement in schooling is the relationships they have with a teacher.

### St. Norbert College – James Neuliep

The following are some comments from Neuliep about his study of high school teachers and the use of humor. "Between student and teacher there's a status differential in the classroom. Humor can help both the student and teacher cross the bridge together. How high school teachers use humor showed that they most frequently employ it as a way of putting students at ease, as an attention getter, and as a way to show students that the teacher is human. Humor, used appropriately, can help reduce the psychological distance between teachers and students, while inappropriate humor increases distance. In other words, humor directed at a student in the form of ridicule, sarcasm, and joking references to ethnic, racial, and gender differences are out."

### Sam Houston University

A study showed that students are more likely to recall lectures when it was interjected with jokes about relevant topics.

### University of California Riverside – Sonya Lyubomirsky

In a study of happiness, one of the biggest surprises was that in happiness, life events don't have much impact. A positive mood allows positive things to happen.

### University College of London

A study showed that hearing laughter and other positive sounds triggers a response in the area of the brain that's activated when we smile. Also, positive sounds appear to be more "contagious" than negative.

### University of Liverpool and Kent

Altruism improves with laughter. Two groups were shown either a funny or serious video before playing an altruistic game with strangers. The group that had seen the funny video was significantly more altruistic while playing the game. Researchers believe that it is possibly because of increased endorphins caused by laughter. They believe laughter may have evolved as a way to release positive emotion in order to deal with a hostile environment and to facilitate group bonding.

### University of North Carolina – Barbara Fredrickson

In a study of the effects of laughter on creative thought, 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

## **Health Topics**

### American Medical Journal and AATH

Ten minutes of laughter drops 10-20mm in blood pressure.

### Duke University – Dr. Wei Jiang

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.

### Indiana State University

In a study, two groups were divided in what they were given to watch. One group watched a travel film, while the other group watched a laughter video. After, the group that watched the laughter video produced significantly more killer T cells.

### International Journal of Psychiatry in Medicine

People with severe diseases increased survival rate by 31%, if they had a sense of humor.

### Journal of Psychosomatic Research

The beneficial effects of laughter on preventing the exacerbation of diabetic nephropathy are strongly suggested in terms of normalizing the expression of the prorenin receptor gene followed by reducing the level of blood prorenin

### Journal of Psychosomatic Research - Hajime Kimata

Breastfed babies with eczema experienced milder symptoms if their mothers laughed hours before feeding them. Kimata showed breastfeeding mothers either a feature length Charlie Chaplin movie or bland footage of weather information, and took samples of breast milk at regular intervals afterwards. Two milk feeds later, he also measured their babies' allergic reactions to dust mites and latex. Those infants whose mothers had laughed had markedly reduced reactions. Kimata also found significantly higher levels of melatonin in the laughing mothers' milk. The hormone is associated with relaxation, and levels are reduced in people with eczema.

### Massachusetts General Hospital – Dr. Darin Doughan

In a study, chronic excess anger was linked to a higher risk of hypertension, type 2 diabetes, and heart disease.

### Loma Linda University –Lee Berk and others

The following laughter results have come from research at Loma Linda University.

- increase levels of good hormones
- reduced levels of stress hormones, through decreased levels of cortisol and adrenaline
- improvement in the body's immune system, possibly by increasing the body's secretion of growth hormones
- increased endorphins to fight pain and depression

- increased beta endorphin blood levels, also known as the body's morphine
- effects lasts between 12 and 224 hours after the laughter event
- increased blood flow because of the dilation of the endothelium (inner lining of the blood vessel.)
- above effect could possibly reduce atherosclerosis or hardening of the arteries
- increased antibody levels especially NK cells (white blood cells), which are increased in number and activity
- 2001 research took 48 heart patients and divided them into two groups. One group watched 30 minutes of comedy everyday, while the other group watched none. Only 2 of the first group had a recurrent heart attack, while 10 did in the second group.

#### New England Journal of Medicine

Ten minutes of laughing can allow up to 2 hours of pain relief.

#### Norwegian University of Science and Technology & St. Olav's University Hospital

In a study of patients with chronic kidney failure, 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.

#### Norwegian University of Science and Technology – Sven Svebak

This study included 54,000 Norwegians studied over a seven year period. Some of the results are listed below.

- 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%

#### Ohio Longitudinal Study of Aging and Retirement

In a 20 year study, results showed that a more positive view was connected to an increased lifespan of 7.8 years.

#### Psychosomatic Medicine (Journal)

A study was done on 193 volunteers, who were asked to record their positive and negative emotions for two weeks. After this period, each was exposed to a cold or flu virus. A few results are listed below.

- fewer positive thinkers became infected
- positive thinkers who became infected had less pronounced symptoms
- 28% positive thinkers developed symptoms compared to 41% of negative thinkers

#### University of Kentucky

In a longitudinal study of a group of nuns, the following was reported.

- nine of the ten most positive 25% were still alive at age 85
- one out of three of the least positive were still alive at age 85
- a positive emotion correlated to a ten year increase in life span, which is greater than the difference between smokers and non-smokers

#### University of Maryland Medical Center – Dr. Michael Miller

The following laughter results have come from research at the University of Maryland.

- decreases blood pressure
- increases muscle flexion
- improves overall performance of heart's muscle function
- possibly wards off heart disease
- oxygenates your blood
- relieves stress
- increase blood flow through the expansion of the inner lining of arteries

- patients with heart disease are 40% less likely to laugh versus those without heart disease
- there was a 22% increase in blood flow after watching a comedy film
- Dr. Miller is quoted as saying, "Thirty minutes of exercise three times a week and 15 minutes of laughter on a daily basis is good for the vascular system."
- Additional Dr. Miller quote. "Patients who suffered heart attacks or had heart surgery were 49% less likely than healthy people of the same age to see the humor in daily life. Laughter should be incorporated into daily activities just like other heart protective measures, such as exercise."

Vanderbilt University – Maciej Buckowski

Ten to fifteen minutes of laughter burns approximately 50 calories.