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Therapeutic Benefits of Laughter

Dr. Lee Berk and fellow researcher Dr. Stanley Tan of Loma Linda University in California have been studying the effects of laughter on the immune system. To date their published studies have shown that laughing lowers blood pressure, reduces stress hormones, increases muscle flexion, and boosts immune function by raising levels of infection-fighting T-cells, disease-fighting proteins called Gamma-interferon and B-cells, which produce disease-destroying antibodies. Laughter also triggers the release of endorphins, the body's natural painkillers, and produces a general sense of well-being.

Following is a summary of his research, taken from an interview published in the September/October 1996 issue of the Humor and Health Journal.

Laughter Activates the Immune System

In Berk's study, the physiological response produced by belly laughter was opposite of what is seen in classical stress, supporting the conclusion that mirthful laughter is a eustress state -- a state that produces healthy or positive emotions.

Research results indicate that, after exposure to humor, there is a general increase in activity within the immune system, including:

- An increase in the number and activity level of natural killer cells that attack viral infected cells and some types of cancer and tumor cells.
- An increase in activated T cells (T lymphocytes). There are many T cells that await activation. Laughter appears to tell the immune system to "turn it up a notch."
- An increase in the antibody IgA (immunoglobulin A), which fights upper respiratory tract insults and infections.
- An increase in gamma interferon, which tells various components of the immune system to "turn on."
- An increase in IgB, the immunoglobulin produced in the greatest quantity in body, as well as an increase in Complement 3, which helps antibodies to pierce dysfunctional or infected cells. The increase in both substances was not only present while subjects watched a humor video; there also was a lingering effect that continued to show increased levels the next day.

Laughter Decreases "Stress" Hormones

The results of the study also supported research indicating a general decrease in stress hormones that constrict blood vessels and suppress immune activity. These were shown to decrease in the study group exposed to humor.

For example, levels of epinephrine were lower in the group both in anticipation of humor and after exposure to humor. Epinephrine levels remained down throughout the experiment.

In addition, dopamine levels (as measured by dopac) were also decreased. Dopamine is involved in the "fight or flight response" and is associated with elevated blood pressure.

Laughing is aerobic, providing a workout for the diaphragm and increasing the body's ability to use oxygen.

Laughter brings in positive emotions that can enhance - not replace -- conventional treatments. Hence it is another tool available to help fight the disease.

Experts believe that, when used as an adjunct to conventional care, laughter can reduce pain and aid the healing process. For one thing, laughter offers a powerful distraction from pain.

In a study published in the Journal of Holistic Nursing, patients were told one-liners after surgery and before painful medication was administered. Those exposed to humor perceived less pain when compared to patients who didn't get a dose of humor as part of their therapy.

Perhaps, the biggest benefit of laughter is that it is free and has no known negative side effects.

So, here is a summary of how humor contributes to physical health. More details can be found in the article, [Humor and Health](#) contributed by Paul McGhee

Muscle Relaxation - Belly laugh results in muscle relaxation. While you laugh, the muscles that do not participate in the belly laugh, relaxes. After you finish laughing those muscles involved in the laughter start to relax. So, the action takes place in two stages.

Reduction of Stress Hormones - Laughter reduces at least four of neuroendocrine hormones associated with stress response. These are epinephrine, cortisol, dopac, and growth hormone.

Immune System Enhancement - Clinical studies have shown that humor strengthens the immune system.

Pain Reduction - Humor allows a person to "forget" about pains such as aches, arthritis, etc.

Cardiac Exercise - A belly laugh is equivalent to "an internal jogging." Laughter can provide good cardiac conditioning especially for those who are unable to perform physical exercises.

Blood Pressure - Women seem to benefit more than men in preventing hypertension.

Respiration - Frequent belly laughter empties your lungs of more air than it takes in resulting in a cleansing effect - similar to deep breathing. Especially beneficial for patient's who are suffering from emphysema and other respiratory ailments.