



Clinical Group

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Short Communication

Psychoneuroimmunology (PS) Applied to Otolaryngology

Synopsis

We have long known that emotions can affect health. Depression, anxiety, stress, all these have an effect on health. Psychoneuroimmunology - PS - studies the precise chemical and neural connections that are effected [1].

PS developed when Norman Cousins, the editor of the popular *Saturday Evening Post*, was dying at the UCLA hospital. The doctors had given up. His friends hung a sheet, had him watch comedies, he laughed, and he got well. He then wrote, *Anatomy of An Illness*, and founded the field of Psychoneuroimmunology: how emotions affect the body [2].

There are 2,409 references on how emotions effect immunology in Pub Med [3].

PS has demonstrated, with PET Scans and biochemistry, that the brain functions in the health and healing process. Objectively, studies show that after three injections of Demerol or Morphine, on the fourth injection of plain saline, patient got total pain relief. On the fifth injection of saline, the relief was not as sufficient. Why did the saline work? Did the brain do it? Actually, yes, the endorphin that was produced was measured! [4].

Short Communication

In PubMed there are some 127,000 articles on why placebos work. Most of these articles utilize PET Scan and other objective findings to objectify that the brain is engaged.

Recent work in psychoneuroimmunology has demonstrated that stress delays wound healing. In addition, a second line of research has illustrated the adverse effects of pain on endocrine and immune function [5].

In one study of a standard orthopedic procedure, performed by several specialist in the same hospital, the Minnesota Multiphasic Test – the MMPI – predicted accurately which patients would have complications or excessive pain [6].

PS shows that the brain is engaged in healing. It may also be engaged in a negative way. When the red pill is completely effective is changed to a black pill containing exactly the same contents, the medication fails to work, fails to relieve the pain.

Hospital rooms at many hospitals have two comedy channels. Can laughing alter the immune system? PS shows that it can. Even just the act of smiling has been shown to prevent the common cold.

In every double-blind study, a percentage of the placebo patients get exactly the same result as the real pill. This can vary from study to study. It is felt that the instructions have a significant effect on these outcomes.

There are 2,409 references on how emotions effect immunology in PubMed.

After reviewing these PS studies, certain practices in therapy are recommended Reduce Stress.

Explain to the patient clearly what the therapy does, in language they clearly understand. You want the brain engaged in the healing

Give a set of actions to perform. When the patient follows take the red pill with 8 ounces of water before every meal, then the brain is engaged.

Encourage humor: watch comedies. Smile [7].

Most of these recommendations are made in the various therapy recommendations. For example, the Academy of Otolaryngology on Tinnitus, has guidelines that include

- Reduce Stress.
- Find a masking sound and use it (action)
- Cognitive therapy
- Improve sleep.

Applying PS to otolaryngology

Stress Reduction: There is no single stress reduction technique that must be used. Methods vary according to the physician's experience, the culture, and interest. Actions having to do with breathing are effective. Music, humor, exercise and smiling all have their advocates [8].

The method I use is counted breathing, using the mirror as a biofeedback device. Breathe in, count four, and out count six. The exact time is not important. What is important is that the exhalation is longer than the inhalation, and be a relaxation.

Do this in front of a mirror. SEE the face relax. See the jaw relax. See the shoulders relax [9].

Counting is non-stimulatory. The anterior lobe concentrates on the numbers, instead of anxiety subjects. In stress, the breathing quickens and there are shorter breaths. Because there is longer, a relaxed exhalation, this signals the Amygdala that there is no stressor, to stop putting out stress chemistry. I may ask the patient to do this for one minute every hour for four weeks to get them habituated to less stress physiology. (If patient is on anti-hypertensive medication, they must be monitored as the medication dose may need to be adjusted or even discontinued.)

Visualization

PS has demonstrated that when you visualize, using all your senses, that fun day at the beach, you tend to replicate some of the chemistry you produced that fun day.

Ellen Langer, the Harvard Psychologist, put a group of 70 year olds into an artificial environment of ten years ago. Newspapers, radio, television, food were all of a previous decade. In many physiologic measures, they replicated their age 60 chemistry. Her book, *Counter Clockwise* details the changes. This experiment was replicated in England [10].

The better the patient understands how the therapy works, the better the brain can be engaged in the healing. For example, the antihistamine blocks the release of histamine. A picture or diagram shows this. The more the patient can visualize this fact, the more the brain can aid the healing process.

Set of actions

Take one pill with 4 ounces of water before every meal.

Rinse your nose with distilled water and the saline packet twice a day

Drink hot coffee or tea before you get out of the warm bed.

Whatever the set of actions, when they are followed, this engages the healing mechanisms. The reverse of this:

At almost every local meeting of the American Tinnitus Association, a new member shows up who is distraught and often crying. They just had a Tinnitus evaluation and were diagnosed, Tinnitus, and told to just live with it. No set of

actions was recommended. This inadvertently increased stress to make the tinnitus worse. Contrast this with the patient in pain, who is told to apply cold (or heat) compresses to the area every two hours.

The practice

How does one doctor in a specialty group, consistently get better healing, faster recovery, needless antibiotics for infection? Yet, all the group doctors have best training and competence? Studies show:

Patients have less stress with this doctor.

Doctor gives patients a specific detailed program to follow.

Doctor adds humor to the therapy.

Doctor explains why medication works in simple terms that the patient can then visualize. (This antibiotic is like the Good Knight fighting the Bad Knight.

We have shown with Pet Scans, that placebos and visualization can alter the body chemistry. Scans show the area of the brain light up to produce the endorphins or other chemicals [6].

Pet scans show reduced stress areas when visualization for relaxation is effective. Otolaryngology is a surgical field. It is important to note that recent work in psychoneuroimmunology has demonstrated that stress delays wound healing. In addition, a second line of research has illustrated the adverse effects of pain on endocrine and immune function Kiecolt-Glaser.

With EEG biofeedback, patients can be taught to suppress the pre-epileptic EEG [11].

With EEG biofeedback, patients with PTSD (Post Traumatic Stress Disorder) can be taught to alter the EEG associated with PRSD.

In Pub Med there are 127,000 references under Placebo Effects. Most of these studies used objective and PET scan findings to indicate method of measuring the placebo effect.

Understanding the principles of the placebo effect, can be very useful when performing clinical studies. When I performed a study of using EMG biofeedback as a treatment for tinnitus, my staff were trained not to be unusually encouraging or supportive. Instead of the usual, "Good morning Mrs. Jones. How are you? Hope you are feeling better." Instead there was only "Jane will be with you shortly." During the 6-treatment trial, I limited my presence to simple exam and history. Otherwise, the study might have been flawed. Gtossan Tinnitus.

My friend, Dr. Olmstead is an oncologist. Thus, he is frequently asked to evaluate new medication. As a researcher, he is useless because all his patients feel much better after visiting him [12].

My therapy for the common cold? Netflix. Go home, turn on a comedy, drink lots of warm green tea with lemon and

honey. My patients report that this usually works. It follows the principles of PS, that humor increases immunity [2].

Conclusion

In no way am I recommending the use of placebos. But surely it is good medicine to use all the factors available to aid the patient's recovery and health.

We want our patients to get well with a minimum of medications. By applying the known established, proven methods of PS, we may significantly aid their healing process by recommending

- A form of stress reduction
- A clear explanation of the therapy
- Encourage a means of visualization
- A set of actions to follow
- Recommendation of adding humor

Certainly, knowing that these methods have been proven to aid healing and immunology, should encourage their application [13].

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