PROGRESSIVE MUSCLE RELAXATION

OVERVIEW

Progressive muscle relaxation (PMR) is one of the simplest and easiest relaxation techniques to learn and teach. It is a widely-used procedure that was originally developed by Dr. Edmund Jacobson in the early 1920s. He went on to publish his book detailing this method of relaxation involving alternately tensing and relaxing 14 different muscle groups.[1]

RESEARCH

PMR has been found to be helpful for treating tension headaches, migraines, temporomandibular joint disorder (TMJ), neck pain, tinnitus, cancer related pain and tolerance of chemotherapy, inflammatory arthritis, IBS, diabetic peripheral neuropathic pain, postoperative pain, insomnia, stress, anxiety, back pain, and high blood pressure.[2-19] PMR is a recommended practice to relax the body and mind at bedtime to fall asleep more easily and get a deeper night sleep. It was rated an effective nonpharmacologic treatment of chronic insomnia by the 1999 review of American Academy of Sleep Medicine and also shown to alter sleep architecture prior to overnight sleep or naps.[20,21] Relaxation techniques, such as PMR, are noted by the National Institute of Health to be helpful in the management of pain.[22] For more information, refer to "Power of the Mind".

WHAT IT IS

PMR is a two-step relaxation practice to reduce stress and build awareness of sensations of tension and deep relaxation in various muscle groups. The first step in this practice is to create tension in specific muscle groups and begin to notice what tension feels like in this body part. The second step is to then release this muscle tension and begin to notice what a relaxed muscle feels like as the tension drains away. By moving through the body by alternately tensing and relaxing different muscle groups in a certain order, one builds awareness of how to recognize and differentiate between the associated feelings of a tensed muscle and a completely relaxed one.

Often, it is recommended to create tension and relaxation several times in the same muscle groups, with diminishing degrees of tension, to deepen awareness and train the body to relax more deeply. Through repetitive practice, a person can then induce physical muscular relaxation at the first signs of the tension that accompanies stress. After the practice, there may be one or two areas that are still tense, requiring one to repeat tensing and relaxing that muscle group.

HOW IT IS TAUGHT

Progressive Muscle Relaxation

PMR can be done lying down or sitting. It is very important to not strain or overly tense the muscle. Just creating a little bit of tension is sufficient to cultivate greater awareness of tension in the body and the relaxation that occurs when contracted muscles are released. If any of the exercises cause discomfort or cramping, ease up, stop or skip this body part entirely so as not to exacerbate any pre-existing injury or cause pain.

Also, pay special attention to not holding the breath while tensing up muscles as this can inadvertently cause stress in the body. One way to avoid this is to synchronize the breath with movements in the body. That is, breathe in while creating tension and breathe out when releasing the tension. This rhythmic pattern of breathing and movement can enhance the feeling of relaxation throughout the body and help calm the mind. You might experiment with saying a phrase to elicit relaxation, such as the word "RELAX," each time you release a muscle group.

Though this technique is simple, it may take several sessions of practice before it is completely mastered. Once this practice is learned, an abbreviated version can be practiced by creating tension in certain muscle groups. For example, a shorthand method might include tensing only hands and arms or just the forehead, eyes and jaw. It is possible to become so proficient at PMR that it is only necessary to focus on one muscle group to produce these results. Tightening and relaxing the first muscle group for each area of the body, while saying the world "RELAX," is one way to shorten the practice with experience.

CONSIDERATIONS

If you find yourself to be very tense already, actively tensing your muscles may not be a helpful practice to deeply relax. Also, if tensing a muscle causes pain, cramping or discomfort, discontinue the tensing exercise. If these are the case, you might try passive progressive relaxation instead. It is recommended to consult with your physician before practicing PMR. This relaxation practice is not recommended if a person has a history of serious injuries, muscle spasms, or back problems, as the deliberate tensing of muscles could exacerbate any of these pre-existing conditions. Refer to "Progressive Relaxation".

PROGRESSIVE MUSCLE RELAXATION EXERCISE

PMR can be practiced in a comfortable position sitting or lying down in a place that you will be undisturbed for 10-15 minutes. Focus your attention on each of the groups of muscles in the list below and work through them one muscle group at a time. Tense each muscle group and notice how that muscle feels when it is tensed. Hold this tension for five seconds while breathing in. Then, release and relax that muscle all at once. Pay close attention to the feeling of relaxation when releasing the contracted muscle.

Practice tensing this same muscle group one or two more times but using less and less tension each time. This helps build awareness of tension in the body and improves the ability to differentiate between tension and relaxation in certain muscle groups.

Progressive Muscle Relaxation

Experiment with saying the word "RELAX" each time you release a muscle group to deepen the feeling of relaxation in the mind and body.

When you have a good sense of what it feels like to be relaxed in that area of the body, transition on to the next muscle group. Make sure to not hold your breath during this practice. If it begins to hurt, cramp, or feel uncomfortable while tensing a certain part of the body, reduce the contraction or stop and move on to the next muscle group. When going through the PMR exercise, it is recommended to start at one part of your body and move systematically. For example, some people start with the feet, others at the face. You may do one side of the body (hand, arm, leg, foot) at a time, or do both sides at the same time.

- Fists Clench both fists and hold
- **Biceps** Bend elbows, tense bicep muscles
- **Triceps** Straighten arms, tense muscles in back of arms
- Forehead Wrinkle forehead in a frown and hold
- **Eyes** Close eyes tightly and hold
- Jaw Gently clench jaw
- **Tongue** Press against roof of mouth and hold
- **Lips** Press together and hold
- **Neck** Gently press neck back and hold. Then bring head forward to chest and hold
- **Shoulders** Shrug shoulders as high as you can and hold stomach out as much as possible and hold
- **Lower back** Gently arch up
- Buttocks Tighten muscles in buttocks and hold
- Thighs Tense by lifting legs off floor and hold
- Calves Press toes downward, as if burying them in sand
- Shins and ankles Bend feet toward head and hold

RESOURCE LINKS

- "Power of the Mind": https://www.va.gov/WHOLEHEALTHLIBRARY/self-care/power-of-the-mind.asp
- "Progressive Relaxation": https://www.va.gov/WHOLEHEALTHLIBRARY/tools/progressive-relaxation.asp

AUTHOR(S)

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REFERENCES

- 1. Jakobson E (1929) Progressive Relaxation. University of Chicago Press, Chicago.
- 2. Gopichandran L, Srivastsava AK, Vanamail P, Kanniammal C, Valli G, Mahendra J, Dhandapani M. Effectiveness of progressive muscle relaxation and deep breathing exercise on pain, disability, and sleep among patients with chronic tension-type headache: A randomized control trial. *Holist Nurs Pract*. 2012;28.
- 3. Fristche G, Kröner-Herwig B, Kropp P, Niederberger U, Haag G. Psychologische therapie der migräne: Systematische übersicht [Psychological therapy of migraine: Systematic review]. *Schmerz*. 2013;27(3):263-274.
- 4. Ferendiuk E, Biegańska JM, Kazana P, Pihut M. Progressive muscle relaxation according to Jacobson in treatment of the patients with temporomandibular joint disorders. *Folia Med Cracov.* 2019;59(3):113-122.
- 5. Metikaridis TD, Hadjipavlou A, Artemiadis A, Chrousos G, Darviri C. Effect of a stress management program on subjects with neck pain: A pilot randomized controlled trial. *J Back Musculoskelet Rehabil.* 2016;20.
- 6. Lauche R, Materdey S, Cramer H, Haller H, Stange R, Dobos G, Rampp T. Effectiveness of home-based cupping massage compared to progressive muscle relaxation in patients with chronic neck pain—a randomized controlled trial. *PLoS One.* 2013;7;8(6).
- 7. Seydel C, Haupt H, Szczepek AJ, Klapp BF, Mazurek B. Long-term improvement in tinnitus after modified tinnitus retraining therapy enhanced by a variety of psychological approaches. *Audiol Neurootol.* 2010;15(2):69-80.
- 8. Danon N, Al-Gobari M, Burnand B, Rodondi PY. Are mind-body therapies effective for relieving cancer-related pain in adults? A systematic review and meta-analysis. *Psychooncology*. 2022;31(3):345-371.
- 9. Pelekasis P, Matsouka I, Koumarianou A. Progressive muscle relaxation as a supportive intervention for cancer patients undergoing chemotherapy: A systematic review. *Palliat Support Care.* 2017;15(4):465-473.
- 10. Tian X, Tang RY, Xu LL, Xie W, Chen H, Pi YP, Chen WQ. Progressive muscle relaxation is effective in preventing and alleviating of chemotherapy-induced nausea and vomiting among cancer patients: a systematic review of six randomized controlled trials. *Support Care Cancer.* 2020;28(9):4051-4058.
- 11. Kwekkeboom KL, Gretarsdottir E. Systematic review of relaxation interventions for pain. *J Nurs Scholarsh.* 2006;38(3):269-277.
- 12. Shah K, Ramos-Garcia M, Bhavsar J, Lehrer P. Mind-body treatments of irritable bowel syndrome symptoms: An updated meta-analysis. *Behav Res Ther*. 2020;128:103462.
- 13. Izgu N, Gok Metin Z, Karadas C, Ozdemir L, Metinarikan N, Corapcioglu D. Progressive muscle relaxation and mindfulness meditation on neuropathic pain, fatigue, and quality of life in patients with type 2 diabetes: A randomized clinical trial. *Journal of Nursing Scholarship.* 2020;52(5):476-487.
- 14. Bialas P, Kreutzer S, Bomberg H, Gronwald B, Schmidberger Fernandes S, Gottschling S, Volk T, Welsch K. Progressive Muskelrelaxation in der postoperativen Schmerztherapie [Progressive muscle relaxation in postoperative pain therapy]. *Schmerz*. 2020;34(2):148-155.

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- 15. Morin CM, Hauri PJ, Espie CA, Spielman AJ, Buysse DJ, Bootzin RR. Nonpharmacologic treatment of chronic insomnia. An American Academy of Sleep Medicine review. *Sleep.* 1999;22(8):1134-1156.
- 16. Corbett C, Egan J, Pilch M. (2019). A randomised comparison of two 'stress control' programmes: Progressive Muscle Relaxation versus Mindfulness Body Scan. *Mental Health and Prevention*, 15.
- 17. Manzoni GM, Pagnini F, Castelnuovo G, Molinari E. Relaxation training for anxiety: a ten-years systematic review with meta-analysis. *BMC Psychiatry*. 2008;2;8:41.
- 18. Qaseem A, Wilt TJ, McLean RM, Forciea MA, Clinical Guidelines Committee of the American College of Physicians, Denberg TD, Barry MJ, Boyd C, Chow RD, Fitterman N, Harris RP, Humphrey LL, Vijan S. Noninvasive Treatments for Acute, Subacute, and Chronic Low Back Pain: A Clinical Practice Guideline From the American College of Physicians. *Ann Intern Med.* 2017;4;166(7):514-530.
- 19. Rainforth MV, Schneider RH, Nidich SI, Gaylord-King C, Salerno JW, Anderson JW. Stress reduction programs in patients with elevated blood pressure: a systematic review and meta-analysis. *Curr Hypertens Rep.* 2007;12;9(6):520-528.
- 20. Morin C, Hauri P, Espie C, Spielman A, Buysee D, Bootzin R. Nonpharmacologic treatment of chronic insomnia. An American Academy of Sleep Medicine review. *Sleep.* 1999;22(8):1134-1156.
- 21. Simon K, McDevitt E, Ragano R, Mednick S. Progressive muscle relaxation increases slow-wave sleep during a daytime nap. *J Sleep Res.* 2022 March. Online ahead of print.
- 22. Integration of Behavioral and Relaxation Approaches into the Treatment of Chronic Pain and Insomnia. NIH Technol Assess Statement 1995 Oct 16-18:1-34.