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Movement as Response to Pain from Muscles, Tendons and Joints in Sedentary Persons

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Abstract

Musculoskeletal pain can arise from trauma to joints, muscles, tendons, ligaments, bursae, or nerves. The group of people who are more likely to joint, tendon, and muscle problems are the ones who do not move much for lengthy stretches of time. The current work addresses the pain and remedies for this group of people, who could be mostly senior citizens. It does not matter whether these individuals are retired in their own homes, or put into nursing homes by their loved ones who no longer can care for them. The kind of chronic pain experienced by seniors with sedentary life styles, can be greatly improved by movement. This movement includes stretching exercises (from yoga, tai chi or other exercise program). Sedentary office workers in cities may also benefit from the exercise advice in this work.

Keywords: Stretch; Contract; Tension; Muscles

Background

Older studies on the forces in muscle include [1,2]. More recent studies on the relation between tension and stretching in muscle include [3-6]. Some of the difficulty of getting a general principle out of these studies for physical exercise purposes is that most of these studies performed are animal studies. Of the references cited, only [4] was done with human athletes. It is clear from basic physiology though, that stretching and contracting the muscles constitute exercise for the different muscle groups. The purpose of the current work is to help clear the myth that in senior citizens, the therapy for chronic musculoskeletal aches and pains is rest, recovery and less loading on the muscle groups.

Some Types of Musculoskeletal Pain and Physical Remedies

Musculoskeletal pain can come after trauma to muscles, tendons, and joints [7]. Pain from muscles, tendons, and joints can arise from injury to joints, muscles, tendons, ligaments, bursae, or nerves. Rest and non-movement combination is not the best therapy for this kind of pain. Movement is the correct response to this type of pain in older individuals [8-10]. The pain can be relieved (by over-the-counter pills, etc.) However, the muscles and tendons need to be strengthened to prevent further pain when stressed to similar levels the next time. Strengthening of muscles and tendons can be achieved by slow stretching. The successful practices recommended in this work include the following [7]:

a. Decreasing workload and growing the rest times

b. Strengthening and acclimatizing exercises

c. Stretching exercises.

Persons who are more prone to joint, tendon, and muscle difficulties are the ones who tend to maintain minimal-motion positions for long periods of time [11] (such as sitting in a chair or standing) like many senior citizens, retired in their own homes or institutionalized homes.

Balance in exercise is as important as it is in nutrition [8]. If one gets too much exercise, the muscles might get compressed and stressed too much, causing pain. In addition, the joints may get worn out by too much use by persons owing to repetitive motion (e.g. factory workers). This kind of problem, if severe enough, could lead to a joint replacement like a knee replacement or a hip replacement. Too little exercise, as in the case of sedentary seniors and office workers, the muscles become weak. In sedentary seniors, rather than younger office workers, the muscles could have actually atrophied. The muscles become too weak to support the frame or bones of the body, and may become traumatized. In such a condition, the remedy is to

stretch, maintain body poses to help strengthen the muscles. It requires repetition, and daily devotion to this regimen of exercises. The best recommendation is for a complete full body motion exercises to be performed daily, following the tradition of yoga, tai chi, qigong or other proven exercise program. This daily prescription is so that the muscles have no chance of going into atrophy again.

The foregoing exercise advice may also be suitable for younger office workers. However, atrophy may not have set in yet for younger adults since the chances for activity in a modern active life are available. This precautionary statement is made here because if musculoskeletal chronic panic occurs in more youthful adults, there are also diseases that need to be ruled out beforehand. An assumption that slow stretching and holding poses for strength (for example, as in yoga) would cure chronic musculoskeletal pain should not be made hastily.

Discussion and Conclusion

Even in the absence of accidents, and a sudden overload on a particular muscle group (as in the case of furniture movers, for example), pain can develop among sedentary people. In their case, it is very similar to overloading a specific muscle group, but a muscle group that has atrophied from not being utilized in a long time (compared to an unusual muscle group in movers). Because of this atrophy, it is common to come across such feeble muscle groups in older persons who do not move around much. It is easy to see how pain can come from these feeble muscle groups, because the threshold for pain for them is quite low. The consequence is the occurrence of chronic musculoskeletal pain that often occurs among sedentary seniors.

The purpose of the work is to advice about moving purposefully for sedentary persons, especially the sedentary seniors. The older the senior, the more important the instruction to move, in general. Of course, there are exceptions where the senior person is very healthy and do not have any musculoskeletal pain. The reason would probably be because such a healthy senior person is an active person who moves around a lot every day, thus exercising all the muscle groups regularly. For all of us, it is necessary to move in every direction possible. The objective is to keep the muscles strong enough to support the skeletal system of the body.

There are about 640 to 850 muscles in the human body [12,13] (the difference in numbers is a result from the controversy regarding the definition of muscle groups), the three types of muscles being skeletal, visceral, and cardiac. The skeletal muscles are voluntary and the visceral muscles are involuntary. It is necessary to slowly exercise the muscles on a daily basis [14]. The various and chronic musculoskeletal pain experienced by seniors arise from weak muscle groups that have not seen enough exercise in recent times. Alleviating of work load as one gets old is not the same as not moving the muscles at all. “Use it or lose it” becomes more poignant in the sunset of one’s life.

Acknowledgement

This work is dedicated to all our ancestors, who have passed on while suffering from chronic musculoskeletal aches and pain, because they did not have the benefit of modern science to provide guidance.

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