

Muscle Control

Introduction:

One of the symptoms of IBMPFD (see www.ibmpfd.com for more information) is the significant atrophy of the voluntary muscles, i.e., those that perform conscious or reflex movements, not those such as the heart. As the muscles atrophy, movement becomes increasingly difficult due to loss of strength and stamina. An additional symptom appears to be the loss of normal autonomous muscle group control, i.e., an activity that uses the automatic (no conscious direction) coordination of groups of muscles does not occur naturally.

Description:

When one attempts an activity, e.g., standing up, a wide variety of muscles in the legs, arms, and torso automatically coordinate to efficiently use the necessary muscles. As some muscles atrophy, other muscles replace their function, e.g., one naturally uses more arm strength more when the leg muscles atrophy first. However, in some cases the muscles that are not performing automatically actually are still capable of some activity. One must exert a conscious directive to use those muscles, albeit at a lower performance than before the onset of atrophy.

Mechanism:

Muscles have a signaling method with the nervous system and the brain. Apparently, with these muscles that have atrophied (from IBMPFD, possibly other causes), the signals to the nervous system and brain are not functioning correctly. The purpose of the signals is to inform the nervous system and brain that the muscles are available and capable of some level of activity. When the signaling does not function correctly, the brain automatically directs the nervous system to not use those muscles, meaning one does not even “feel” like attempting the activity.

However, one can consciously direct the brain to attempt to use those muscles, within the strength and stamina capacity of the muscles. This conscious effort seems to “wake up” the signaling system and/or muscle group to perform at some level of functionality.

Mitigation Methods:

Consciously directing a muscle group is not a purely natural activity. One can try:

1. Performing some exercises (typically stretching) that use both the normally functioning and the “asleep” muscles in any given portion of the body;
2. Doing a form of isometric exercise such as partially putting some weight on the legs;
3. Mentally visualizing using the affected muscle groups to perform some portion of the intended activity, e.g., by consciously trying to use one’s legs to stand while still using one’s arms.
4. Regular exercise, particularly stretching that uses the affected muscles, appears the duration of the sleep periods. The regularity of the movement is typically measured in hours, i.e., one should try to do something with the affected muscles every few hours.