Pelvic Stability... A Question of Balance

Since developing Fitter seven years ago, I have observed tens of thousands of people using it at consumer and medical conferences around the world. During the past three years I have been surprised to observe that approximately one in five people who step on Fitter have a problem with muscle imbalance in trunk, hip and lower back areas.

Often, these individuals display a lateral weight shift that involves significant rotation in the lower back and pelvic region. From conversation with them, I have learned that them I have learned that the majority of them have previously experienced some level of trauma to the ankle, knee or hip on the involved side. It has been my observation that this pelvic rotation generally stems from a muscular adjustment made in the trunk region to accommodate the non-weight bearing phase following a lower extremity injury.

The goal of this article is to outline some methods of using Fitter to help identify and possibly correct this situation, especially in cases where the knee and ankle are normal.

After my own experience of rehab from knee and foot surgery (1979, 1983) and as a member of the Canadian National Speed Skiing Team (1992), I personally know that pelvic muscular imbalance can lead to improper weight shift when turning on skis. For most skiers this rotation increases the difficulty in turning because they tend to rotate forward and lean back on the tail of the edging ski. This stance uses less gluteas medius muscle activity and more of the hip flexors. It also requires a contraction of the lower back muscles on the opposite side to balance the movement. Many skiers complain of a weak turning side and of lower back pain. I believe that pelvic rotation and muscular imbalance may be part of the problem.

After observing thousands of Fitter users, it is clear that the majority of people who show pelvic rotation have experienced a previous trauma to the lower extremity on the involved side. Secondly, many of the subjects also indicated that they have experienced regional pain in the lower back on the opposite side. There is ongoing evidence that suggest that Fitter helps train the trunk and hip girdle muscles to participate in proper stabilization while exercising the lower extremities. With a focus on muscular balance and strength, using Fitter may help achieve improved pelvic posture while decreasing the frequency of regional pain syndromes.

In a general patient population, Fitter can easily be used with or without balance aids to evaluate and improve this situation. With your Fitter, try the following steps on a number of your patients and see what your test results suggest:

1. To begin, observe the patient while he is using the Fitter for the first time. Encourage proper foot placement and an upright stance (Figure 1). Watch for any postural reactions that may indicate muscular imbalance (figure 2). It is common to see any or all of the following:
    - tilted/rotated head and shoulder positions
    - rotation and over compensation of upper body movement

- aggressive use of balance aids when shifting to the involved side
- rotated and tilted trunk and pelvic girdle to the involved side
- instability in the ankle and;or knee on the involved side

2. On an easy tension, have the patient perform 8-15 power thrust exercises on each side while observing for the above indications (Figure 3). Muscle fatigue may become a factor with this exercise and cause the patient to adjust his pelvic position even further to the rear on the involved side. At this point you will have gathered enough information on the patient's movement patterns to determine which involved muscles require strengthening and which are currently being overused. Other concerns that require further investigation may also be identified.

Now you can assign the patient exercises such as power thrust variation (Figures 3-6). Position the trunk in such a way that the correct muscle groups can be strengthened while minimizing the involvement of the overused muscle groups. I hope that this process will give you an additional method to help evaluate muscular strength in the pelvic region. These exercises will help improve the patient's natural muscular movement patterns while giving you some useful new ideas for ways to use your Fitter. You may even notice a decrease in the frequency of regional pain syndromes.


Fig1. **Correct Posture**


Fig.2 **Incorrect Posture**


Fig.3 Power Thrust


Fig.4 Forward Rotation


Fig.5 Rear Rotation


Fig.6 Ab/Aduction