# Balance **Extreme Exercise** with **Mindful Movement**

**by the Merrithew Health & Fitness™ Team**

The days are getting shorter and colder so every year around this time you probably see an increase in clients that are returning to the gym and bringing their training indoors for the winter. The warm weather of summer encourages more outdoor activities and for enthusiasts, this can include endurance activities like running, biking and swimming. Over the past number of years, marathons, half-marathons, long distance cycling events and triathlons have steadily increased in popularity--even with individuals who had never pushed these physical limits before or weren't previously fitness enthusiasts. Perhaps this season is the time to remind our clients about striving for balance with a well-rounded workout routine that includes both strength training and endurance exercises.

## Extreme endurance activity—too much of a good thing?

Only recently have studies shown that this move toward extreme endurance sports may be detrimental to our health. Increased levels of free radicals, damage to DNA, myocardium and muscles, as well as drastic hormonal reactions, have all been noticed in those who engage in this type of long duration exercise for extended periods of time. There may even be a link between extreme exercise and abnormal heart rhythms (Wilson, O'Hanlon 2011).

Some researchers are suggesting we rethink how we push our bodies and the outcomes we hope to achieve. A team of scientists

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in Britain maintains that engaging in "chronic extreme exercise appears to cause excessive 'wear and tear' on the heart" (O'Keefe, Lavie 2012). They go on to say that regular but moderate exercise may be the best alternative to maximize health and longevity benefits. This exercise regimen can and should contain a healthy combination of both cardio and endurance type training with strength training.

## Pilates—the perfect mix

Why not add STOTT PILATES® over a standard weight lifting program for your clients? The Mayo Clinic (MayoClinic.com) describes pilates as "a method of exercise that consists of low-impact flexibility and muscular strength and endurance movements".

It is widely accepted and there is extensive research showing that resistance training can increase lean muscle mass and bone density. It can provide improvements to postural realignment, movement efficiency, joint fitness and appearance. Some studies even tout enhancements to circulation, digestion, balance, agility, flexibility, and energy levels. A well-designed pilates program is going to work a variety of muscles concentrically, eccentrically and isometrically through a three-dimensional range of motion.

Since one of the most important factors in achieving the desired gains from a strength training program is performing exercises correctly, STOTT PILATES' attention to detail is a definite bonus. The

method features a concentrated focus on correct form, movement efficiency and muscle recruitment patterns, and the controlled systematic and repetitive movements throughout provide the stimulus to illicit the early neural responses recognized as gains in a strength training program. These adaptations relate to the recruitment of motor units and the learned recruitment of additional units. And the advantages can be noticed in both a Matwork based program, or one performed on pilates apparatus like the reformer.

When specifically looking at the core, pilates exercises provide the constant abdominal stabilization often cited as one of the most effective ways to activate the deepest layers. Movements that recruit torso rotation, flexion and stabilization significantly up the rewards, particularly when performed correctly. This focus on ideal execution also ensures that accessory muscles are only recruited when necessary and don't end up performing a compensatory role. The ACSM (Odar, 2011) reports that pilates Matwork exercises performed with a small degree of torso flexion, like the "hundred", single leg stretch and obliques, actually recruit the deeper abdominal muscles, including the transversus abdominis and internal obliques more effectively than other moves. While this was only credited with creating the appearance of a flatter abdomen, the functional benefits of increased endurance for the inner core muscles should not be overlooked. Strengthening and increasing endurance of these muscles effectively stabilizes and protects the lumbo-pelvic region. Other Matwork staples like the "roll up" or "roll over", which require full spinal flexion, place more emphasis on recruiting the rectus abdominis and external obliques, both of which are crucial for developing increased force and torque.

Progressively increasing the loads for the duration of a strength-training program is necessary to continue to see results. Traditionally this would be accomplished by increasing weight, reps and sets. However, STOTT PILATES takes a slightly different approach. Once individual moves have been learned and mastered in a Matwork routine, the intensity of the workout can be increased by adding external resistance or balance challenges. How? Try using peripheral weight, like medicine balls, hand weights or toning balls or flexible resistance from strength tubing or flex-bands. Stability cushions, stability balls or a BOSU® can also dramatically alter the demands placed on the mobilizing and stabilizing muscles. Each of these will add a degree of overload and amplify the strength gains. Although few reliable studies exist that demonstrate that the hypertrophic phase is achieved with a pilates-based routine, participants routinely report increases to muscle tone and definition.

On a reformer, spring resistance is the simplest way to modify the exercises, but it is not the only one. Since you won't find sets and reps in this kind of workout, it doesn't easily fit it into a traditional strength training model. Rather, altering the angle of resistance, base of support or range of motion provides the desired challenge. Muscle groups are worked in a variety of exercises, each designed to provide a unique range, joint angle, accessory muscle recruitment and torso stabilization requirements.

## Pilates for maintaining cardiovascular fitness

When it comes to improving endurance, STOTT PILATES can also play a part. Researchers studying the potential cardiovascular fitness benefits of mat-based workouts have found that intermediate to advanced programs using bodyweight alone could raise the heart rate well above resting levels. They compared the results to lower-impact activities like walking. More intriguing however, was that the cardio stimulus was provided in a more interval-like way. This is notable since this type of training is beginning to be recognized as a more effective mode of improving endurance. Moderate levels of resistance exercise have also been shown to increase blood flow to the periphery more effectively than aerobic exercise, and that the associated decreases in blood pressure may remain for a longer period of time. Although much more investigation is necessary to substantiate these claims, the results bode well for pilates practice.

Average pilates Matwork routines may not evoke dramatically elevated heart rates for sustained periods, however, accessories to the reformer, like the Cardio-Tramp™ rebounder, can achieve the desired results. The trampoline-like surface of the Cardio-Tramp facilitates rebounding activities, but on a horizontal plane. Exercisers report being able to 'jump' for a longer period of time than on a solid surface because of the decreased impact on the joints. So, you can design either a sustained cardio set or an interval type program that intersperses upper body, lower body and core strengthening exercises with aerobic segments to maximize aerobic benefits. Also, because the carriage is guided by spring resistance, the intensity of the program can be increased. More tension on the springs requires a more explosive push off and that much more control is needed on the return. Beyond the aerobic benefits, the horizontal orientation of the body forces awareness of constant torso stabilization through the placement of the pelvis, ribs, shoulders as well as the position of the legs.

The evidence clearly points to the value of STOTT PILATES as an adjunct to established training programs. Results-driven exercisers can feel confident that this expansive body of protocols will help them reach their goals. Muscle strength and endurance, flexibility, balance, core strength and stability are just the tip of the iceberg when it comes to the effects of pilates, and a balanced workout schedule will keep clients engaged, challenged and conditioned right through until the spring.