INTRODUCTION

There is considerable research available suggesting that regular exercise has both physical and psychological benefits. In general, physicians see exercise as having many benefits, including the potential to help the patient control weight, lower blood pressure, reduce total blood cholesterol levels, improve respiratory functioning, reduce the risk of heart attack, and improve sleep [1]. Mental health professionals have recently promoted exercise as a way of elevating mood, enhancing self-esteem, providing a sense of mastery and control, dealing with mild depression, and reducing state anxiety [2]. While this research clearly indicates that exercise is something most of us should practice on a regular basis, there are also indications that exercise may have a “dark side” and can be taken to an extreme. The dark side of exercise has been referred to as exercise addiction, compulsive exercising, obligatory exercising, fitness fanaticism, and most recently as exercise dependence [3]. The purpose of this paper is to introduce exercise addiction as an issue that sports medicine professionals can play a significant role in identifying, managing, and preventing.

Definition

A number of different definitions have been proposed but no universally accepted definition of this phenomenon exists. Hausenblas and Symons Downs [4] systematically reviewed the research on exercise dependence and proposed that exercise dependence be defined as a maladaptive pattern of exercise resulting in both negative physical (e.g. tolerance, withdrawal) and psychosocial (impairment of social and occupational functioning) consequences. They recommended using the DSM-IV criteria for substance dependence as a means of defining exercise dependence. Three or more of the following would be necessary for the diagnosis to be made: (1) tolerance: where over time people began to show an increased need for more and more exercise in order to get the same effects they were receiving earlier with much less exercise; (2) withdrawal: symptoms of withdrawal including irritability, guilt over missed workouts, anxiety over losing conditioning, gaining weight and depression; (3) intention effects: where the individual often exercises in larger amounts or over a longer period of time than was intended; (4) a persistent desire to cut down or unsuccessful efforts to cut back or control exercise behavior; (5) a great deal of time is spent in activities necessary to obtain exercise (e.g. signs up for road races on both Saturdays and Sundays whenever possible); (6) person feels compelled to exercise even if interference with job, family, or friends; (7) persistent exercise even in the face of significant physical (continuing to exercise with heel spurs) or psychosocial (spouse is threatening divorce because of the impact exercise is having on the marriage) problems. Terry, Szabo, and Griffiths [5] have developed a six item inventory designed to measure the risk of exercise addiction. Sports medicine professionals dealing with
the possibility of a client experiencing exercise dependence issues may want to include the use of this inventory in their workup.

**Signs of Addiction**

One of the most common signs mentioned in the literature includes the experience of withdrawal symptoms if exercise is prevented for some reason and relief from withdrawal symptoms when exercise is resumed. Withdrawal symptoms include tension, irritability, anger, guilt over missed workouts, anxiety over losing conditioning or gaining weight, depression, resentment from missed work-out sessions, restlessness, stress, lack of energy and decreased self esteem [6-9]. Blumenthal, O'Toole, and Chang [10] reported that 86% of a group of obligatory runners felt guilty if they missed a scheduled run and 72% reported feeling tense, irritable, or depressed if unable to run. The need to exercise appears to control the individual's behavior and he or she must exercise regardless of the negative social consequences to self, family, occupation, and lifestyle [11]. Such consequences include neglect of work responsibilities, marital difficulties, divorce, the neglect or loss of shared interests [12], and ignoring friendships [13, 14]. Common medical complaints of excessive physical activity include: stress fractures, knee injuries, tendonitis, menstrual dysfunctions, constant fatigue, insomnia, repetitive injuries, hematuria, frequent colds or flu, and other illnesses [15].

Exercise dependent individuals present special problems when tired, ill or injured as they frequently will ignore pain or signs of impending injury. They continue to exercise even though it is medically contraindicated and are very reluctant to implement any treatment recommendation that requires limiting their exercise behavior [16]. One author has suggested that the best way to identify exercise dependent patients is by noting persistent sport injuries [17]. In addition, they are more likely to resume a full exercise regime prior to what is recommended clinically [7]. These behaviors put exercise dependent people at high risk of repetitive injury. Over time people who become exercise dependent began to show increased tolerance to the amount of exercise they needed to do in order to feel good. These individuals also started to develop a subjective awareness of their compulsion to exercise and feel a need to make up missed exercise [18]. They also started and developed concerns about weight that lead many of them to diet in order to improve performance [19,20]. Cockerill and Riddington [21] have suggested that exercise dependent people organize their life around exercise while non-dependent exercisers will organize exercise around their life. Exercise always comes first and then only if time remains will they pay attention to work, love, and friends [22].

**Management of Exercise Dependence**

The following steps presented do not represent a formal approach to treatment. Instead, they include practical suggestions that can be used by sports medicine professionals dealing with the issue of exercise dependence.

For individuals who already meet the criteria for exercise dependence the following steps are recommended:

1. Explore how important a role exercise plays in the patient’s life. If their identity is largely tied up in their exercise behavior, simply telling them to stop exercising is not likely to have any effect whatsoever. If exercise is the primary way that an individual maintains and enhances their self-esteem, the likelihood that they will stop exercising based on recommendations from sport medicine professionals is unlikely. Thus, as with other behavioral addictions, utilizing abstinence as a treatment can present difficulties [23]. People who become exercise dependent either have given up activities that were formally used to help define their identity or have always used exercise as a primary way of defining themselves. Individuals in the former group need to be encouraged to resume previous activities while patients in the second group need to be encouraged to go out and try new ways of maintaining and enhancing self-esteem. The development of new friendships is often necessary since exercise dependent individuals usually have developed a tendency to hang out and interact with other exercise dependent individuals [24].

2. Try to get them to understand that the problem is the nature of their involvement with exercise, not the exercise itself. A failure to make this distinction allows the patient to conclude that you are blaming exercise per se and that contradicts everything they have heard or read about the value of exercise. Discuss with individuals that we know about exercise dependence, including the signs of dependence. General questions you could ask at this point include: Do you choose to exercise or do you feel compelled to exercise? If you are not able to exercise, how do you feel? Do you or anyone close to you feel that your level of exercise has become a problem?

3. Provide education about the eventual impact of repetitive injuries and likely outcomes. People who are exercise dependent gradually begin to think of themselves as invulnerable to medical problems. The reality of Achilles heel injury, stress fractures, knee injuries, tendonitis, hematuria, constant fatigue, and increased risk of colds and flu need to be spelled out in some detail. Specifically, the dangers of resuming exercise before the injury is fully healed needs to be emphasized. Recurrent injuries to the same area should be a red flag when dealing with exercise dependent individuals.

4. Help them acquire stress management skills so they are not solely dependent on exercise to manage stress. If exercise is their only way of coping with stress, then telling them to cut back is not likely to have any impact, especially if their life is filled with stressful events. Signing up for a stress management workshop, reading self-help books on dealing with stress, purchasing relaxation tapes, or joining a yoga class are examples of things that can offer the individual alternate ways of dealing with stress.

5. If possible, put them in touch with other people who have experienced exercise dependence and have successfully overcome it. These people may be able to share experiences and perspectives that can be beneficial. These success stories may also serve as models for the person to learn from. Simply having someone share similar experiences will allow the person to not feel isolated, odd, or weird.

6. Consider referring the individual to other health professionals who have expertise in treating addictions. People trained in working with substance abuse are knowledgeable in the implementation of specific treatment programs. They may also have greater knowledge about the symptoms of dependence,
such as tolerance and withdrawal. Specifically, those trained in Motivational Interviewing and Cognitive Behavioral Therapy, approaches that have proven useful in the case of other addictive behaviors, may be of particular help [24].

Prevention of Exercise Dependence

For individuals at risk for developing exercise dependence, the following steps are recommended:

1. Discuss the possible negative effects of exercise including both psychosocial and physiological consequences. Make sure to emphasize that the symptoms of exercise dependence fall into both categories. Many people have a tendency to focus on the negative biomedical consequences of their exercise behavior. Therefore, if they are not physically hurt, there is not a problem. This type of dichotomous thinking can be very detrimental to prevention efforts.

2. Describe some of the danger signs that they should be monitoring. Emphasize that strains upon one's relationships and the tendency to leave responsibilities unfulfilled are significant warning signs that need to be addressed. These behaviors are often neglected and underemphasized in comparison to the more pervasive physical symptoms on the part of both the patient and their physician.

3. Emphasize the importance of keeping their exercise program within limits. Inform them that the body often stops making significant physiological gains after a specific period of time. Individuals who are exercise dependent often believe that “more is better”. This result not only in excessive amounts of time spent on exercise, but increases the risk of overuse injuries as well [25].

4. Encourage patients to use a hard/easy training schedule (e.g., take rest days). Having them draw up a year long schedule with built in down periods may be an effective first step. It is important that they understand it is not the exercise per se that is detrimental, it is their level of involvement. Emphasize that recovery should be a part of any exercise program. It gives muscles, tendons, and the aerobic system time to heal and regenerate, and thus be better prepared for the next workout [26].

5. Deemphasize “no pain – no gain”. Point out that pain is usually a message that something is wrong. Emphasize that chronic pain is an evolved communication device that signals when the body is under an inappropriate amount of stress. Pain receptors are there for a reason, and certainly should not be ignored [27].

6. Regularly assess injured athletes for the presence of risk factors for exercise dependence. Injuries that should be healing properly in a shorter amount of time with less physical distress are signs to be wary of. Also, it may be important to highlight at risk populations (i.e., athletes who spend an above average time in the weight room). A simple one-on-one conversation highlighting the symptoms may be enough to address a problem before it starts.

SUMMARY

The message to exercise along with the claims that exercise is beneficial suggests that an increasing number of people are exercising regularly. As information on exercise dependence becomes more available to physicians, the sport medicine professional will likely receive more requests for help with this problem. Additionally, the sport medicine professional will see an increasing number of injured athletes for psychological rehabilitation. A certain percentage of this group will either be at risk or already be exercise dependent. Sports medicine professionals are in a position of identifying this group and presenting ways of either aiding the at risk individuals from progressing into full blown dependence or helping individuals who are already dependent to manage their exercise dependence in such a way as to minimize the negative physical and psychosocial consequences described above.

REFERENCES


