

Debunking the Myths Surrounding Exercise and Older Individuals

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Between 2010 and 2030 the "baby boom" generation will reach 65 years of age. Research has predicted the U.S. population of individuals 65 years of age and older will rise from 35 million in 2000 to 40 million in 2010 (a 15% increase) and onto 55 million by 2020 (a 36% increase for that decade) (USDHHS, 2009). Longevity of this population is also on the increase as a result of the improvements in modern medicine, public health reform, health education, and improvements in socioeconomic conditions over the last 25 years. However, health care costs are considerably higher in older individuals. For example, the average health-care expenses paid by older individuals in 2006 was \$4,631 compared to an average "out-of-pocket" expense of \$2,853 in the general U.S. population. On average these estimated expenses included approximately \$859 for medication, \$844 for medical services and \$159 for medical supplies (USDHHS, 2009). In dealing with the health concerns of an older population, alternative strategies to improving overall health emphasizing behavior modification strategies, such as increasing physical activity levels, have become increasingly popular over the past 25 years.

The history of physical activity shows participation dating back to prehistoric times (although involvement came more from a need for hunting and overall survival than for health improvement). The emergence of exercise for the purposeful attainment or maintenance of health and fitness is thought to have occurred through the 18th century and with advancements in medicine and science, gathered speed through the 19th and 20th centuries (Coakley, 2008). Overall physical activity participation in adults increased throughout the 1960s, 1970s, and 1980s (Stephens, 1987), along with what many consider the emergence of the "fitness craze". During this period, a multitude of literature on the latest, greatest exercise approaches and techniques was published by a diverse array of people, both credentialed professionals and non-professionals, facilitated by a growth in media outlets such as infomercials, exercise magazines,

and electronic media (videos and later DVDs). These increases have contributed to the rapid growth and distribution of exercise-related material over the last 30 years, but this has included both credible, research-supported information as well as misleading or inaccurate information that may promote improper practice or various exercise myths.

Research has supported the potential for regular physical activity to significantly reduce disease risk, improve mental (decrease anxiety and depression) and physical health (increase muscle strength, improve cholesterol and blood glucose profiles), and increase in functional capacity (e.g., the ability to complete activities of daily living with undue fatigue or compromise) (Fern, 2009; Ory, Hoffman, Sanner & Mockenhaupt, 2003). Despite this evidence, less than 40% of individuals over 65 years of age exercise on a regular basis (Brown, Yore, Ham, & Macera, 2005). Common myths concerning exercise and older adults include, but are not limited to suggestions that older individuals are too frail to partake in resistance training for fear of breaking already frail bones, and that older adults can only attain minimal health benefits from physical activity due to their advanced age. For older adults, debunking common myths concerning exercise, as well as reeducation on the appropriate exercise approaches, can have important repercussions for facilitating regular and safe physical activity participation. This paper will elaborate on these myths, provide the science behind corrections to these fallacies, and further discuss the character and goals of fitness programs targeting older individuals that have been shown to promote adherence, health benefits, and enjoyment.

Common Exercise Myths for Older Adults

While numerous myths exist concerning exercise, the following statements are common myths specific to older adults. The following section will elaborate upon the myth and discuss the science behind the correct interpretation of each statement as it pertains to older adults.

Myth 1: Older adults should not follow the same physical activity or exercise guidelines as younger adults. In 2008, the first federally issued physical activity guidelines (USDHHS, 2008) were released with the intent of providing comprehensive recommendations on physical activity to assist health providers, practitioners, and policy makers in responding to the pressing health issues now facing the U.S. population. These guidelines suggest that older adults (65+ years) should engage in "... at least 150 minutes (2 hours and 30 minutes) a week of moderate-intensity, or 75 minutes (1 hour and 15 minutes) a week of vigorous-intensity aerobic physical activity ..." (USDHHS, 2008, p. 30). As with adults under the age of 65, participation in physical activity above and beyond this level will potentially lead to further health benefits, however accommodations may need to be made for adults *or* older adults presenting any form of contraindication to exercise. Additionally, adults and older adults should "... do muscle-strengthening activities that are moderate or high intensity and involve all major muscle groups on 2 or more days a week ..." (USDHHS, 2008, p. 30). However, exercise professionals working with older adults may need to be more cautionary at the onset of a new exercise regime, and pay specific attention to older adults' needs and current fitness status (Fern, 2009; USDHHS, 2008). Exercise modifications for adults with various exercise limitations are well documented (Fern, 2009; USDHHS, 2008).

Any adult with a chronic condition or has been inactive for a prolonged period of time, must be made aware of how their condition or lack of fitness may impact their exercise response and how an exercise program should be modified accordingly to increase safety and maintain adherence. The same guidelines can be used to identify appropriate types of aerobic exercise activities. The USDHHS (2008) suggests activities such as walking, swimming, cycling, tennis or golf may be popular for older adults and of sufficient intensity level. It should be noted though

that these precautions are important for all ages – adults with contraindications to exercise should seek physician approval before beginning an exercise program, start with shorter and less intense exercise bouts, and develop the program in a gradual and progressive manner (Thompson, 2008).

Myth 2: Older adults should not exercise without supervision from a physician. According to the American College of Sports Medicine, adults who do not have a diagnosed disease condition and do not have symptoms of a condition, do not need approval from a physician or healthcare provider prior to beginning an exercise program, unless the intended program is high-intensity (an unlikely scenario with older adults) (ACSM, 2009b). As with any adult, if a disease condition or symptoms are present, healthcare provider consultation is suggested. However, while not required, for some older adults supervision by an exercise professional may provide a sense of safety, especially if the adult is previously inactive, recovering from an adverse event (such a fall or fracture), or engaging in a form of exercise program new to the individual. However, a complete medical history and informed consent should be conducted on any adult prior to exercise program initiation (ACSM, 2009b). Potential risk of injury or an adverse exercise response should be minimized when working with older adults by having an emergency action or procedures plan in place (whether in the community or exercise facility), and any exercise program should be designed to accommodate any existing exercise limitations – if necessary initiate the program from a low intensity and incorporate higher intensity and complexity in a progressive manner (Cress et al., 2006).

Myth 3: Aqua-based exercise is the most appropriate form of exercise for older adults. Activities such as swimming or water-aerobics may be suitable exercise alternatives for adults of any age for many reasons. For example, swimming provides a sense of buoyancy and support which minimizes injury risk, an important consideration for those with compromised function –

arthritic conditions, joint replacements, high blood pressure, or even adults exhibiting uncoordinated movement patterns (due to a disease condition or simply lack of muscle strength) (ACSM, 2009a; Bryant & Green, 2005). Anecdotal reports have suggested older adults lean towards aqua-based activities because they provide a safe, familiar, and often easily accessible form of activity that can yield many of the same physical and mental benefits as land-based activities. However, most older adults are capable of doing any aerobic or muscle-strengthening activities engaged in by younger adults, even if the intensity needs to be adjusted (USDHHS, 2008). As with swimming, many land-based activities (walking, cycling, or even gardening) can be easily modified by older adults to fulfill their own manageable exercise goals. Therefore, while aqua-based activities are appropriate for older adults, the likelihood of adherence will improve if the choice of activity is based upon personal as opposed to presumed preference.

Myth 4: Older adults are too frail to participate in regular resistance training. On the contrary, strength training – whether a purposeful training program or part of a rehabilitation or therapy program – can help decrease the risk of debilitating falls in older adults. Research has shown that even adults with existing disease conditions, orthopedic concerns, or muscle atrophy are capable of engaging in muscle-strengthening exercises, provided the prescribed program developed by the therapist, physician, or fitness professional incorporates appropriate exercise selection, intensity, and progressions (ACSM, 2009b). Strength training for older adults should involve exercises that target all the major muscle groups in the body, are of at least a moderate level of intensity, and work the muscles above and beyond the requirements of the given adults' everyday activities (Ball & Gammon, 2009). As with all adults, the amount and type of muscle-strengthening activity should be dictated by each adult's capabilities and individual need (Brandon et al., 2000). Depending upon current fitness level and functional capacity, activities

such as heavy gardening, tai chi, resistance band programs, calisthenics, and weightlifting are appropriate muscle-strengthening activities for all adults (Thompson, 2008; USDHHS, 2008).

Age-related decreases in muscle mass can be offset by regular strengthening activities. Research has suggested that increases in strength in older adults are primarily due to increases in muscle mass, as opposed to neurological stimulation as in children and younger adults (ACSM, 2009b). When strength training is accompanied by exercises that focus on improving balance and flexibility, research suggests there is decreased risk of falls and greater improvements in quality of life as a result of increased functional independence and muscular endurance (ability to complete activities of daily living) (Brandon, Gaasch, Boyette, & Lloyd, 2000).

Myth 5: There is minimal physical or health benefit for older adults engaging in regular exercise or physical activity. Older adults may feel that their advanced age means they have reached the point of no return – no further improvements in health can be attained without the help of medication. Regular and appropriate exercise can help improve muscular strength and endurance, which will promote the maintenance of functional independence (Ball & Gammon, 2009; Cress et al., 2006; USDHHS, 2009). Older adults also tend to exercise with other people, whether due to lifestyle or convenience, encourages socialization. These benefits alone can have subsequent positive effects on self-esteem and self-confidence, manage symptoms of depression, decrease risk of Alzheimer's disease, and promote or maintain good mental health and cognitive function (Cress et al., 2006; Fern, 2009; USDHHS, 2008).

Regular exercise (aerobic and muscle-strengthening) in older adults may lower risk of various disease conditions (hypercholesterolemia, stroke, diabetes, high blood pressure), and maintain body weight (reduce risk of hypokinetic disease) (USDHHS, 2008). Research has also suggested that active older adults have a lower risk of various cancers (colon, breast, lung, and

endometrial), greater bone mineral density (not necessarily gains), and better sleep patterns than their inactive counterparts (USDHHS, 2008).

Myth 6: Older adults should not participate in exercise involving stability balls. As mentioned earlier in this paper, older adults have a greater risk of falls due to imbalance, accident, poor or compromised movement patterns. The use of stability balls as training modalities has increased considerably over the past few years, and has often been coupled with core training programs to enhance stability and balance (Schlicht, 2002). Many questions have been raised concerning safety issues with older adults using stability balls to improve functionality, balance, and strength. Is the risk of falling when using a stability ball greater than the benefit associated with training in this manner? Current reports suggest that the risk of falling is minimal for healthy older adults and that training that incorporated stability ball may improve various everyday functional tasks. However, as the researchers pointed out, the study design made it difficult to make a direct association between the training and outcome (Nichols, Medina, & Dean, 2001). Consequently, this remains a debatable issue. While perhaps not appropriate for frail older adults or *any* adult with orthopedic conditions or vertigo (for any reason), stability ball training is not necessarily contraindicated for older adults provided certain safety considerations are observed (Schlicht, 2002). Such considerations may include, but are not limited to 1) appreciating the limitations with stability ball use, 2) progressive, gradual familiarization for new users, 3) using tools such as placing the ball close to or against a wall to prevent excessive rolling, and 4) choosing appropriate and safe exercises for use with a stability ball (Schlicht, 2002). Minimal reports, anecdotal or research-based, have discussed the use of other unstable apparatus, such as BOSU balance domes and pads, with older adults.

Motivating Older Adults to Exercise

Regular physical activity has many physical, social, and mental benefits for all adults. However ensuring adherence to any form of exercise or physical activity program involving older adults is a challenge that often poses different obstacles and strategic processes to that of younger adults. Several formal and informal studies have suggested that social support (and the opportunity for socialization) is one of the leading factors influencing exercise participation within a strengthening and/or aerobic exercise program (Brandon et al., 2000; Fern, 2009). The elements contributing to this trend may include the opportunity to form new friendships, and experience enjoyable interactions with other individuals of a similar age and level of exercise competency (with subsequent decreases in sadness or depression) (Fern, 2009). Improvements in depressive symptoms may also come about through simple involvement in the distractive experience that is exercise (Brosse, Sheets, Lett, & Blumenthal, 2002). Given the important motivational role that social interaction plays for older adults, an exercise class that incorporates some aerobic and muscle-strengthening exercises may appeal more to this population than one-on-one personal instruction with a trainer.

A second factor influencing participation for older adults is perceived health benefit. Adherence tends to be longer if the adult recognizes the potential health benefits they could obtain through regular involvement, and appreciates these benefits as a personal, intrinsic motivator that could enhance quality of life (Sanders, 2005). For the healthcare practitioner or exercise professional, this is where education, such as dispelling the myths discussed earlier, can prove imperative. The exercise environment is another important factor for older adults. Exercise conditions and environment, both inside and outside, impact comfort level and enjoyment. Features that often concern older adults include room temperature, safety (adequate and

professional supervision), lighting, cleanliness, and opportunity for socialization (Schlicht, 2000).

Additional factors that have been shown to influence adherence include appropriate long- and short-term goal setting, and the complexity of exercise routines incorporated into the program. As indicated earlier, social support and interaction are possibly the most prominent reasons for continued participation by older adults, not the challenge of completing a complex task or outdoing a younger counterpart. However, as with adults of all ages, if a task is too complex (resulting in ongoing failure or exhaustion), dropout is probable (Schlicht, 2000). Appropriate and measurable goals designed to achieve specific health benefits or behavior change in a realistic timeframe will help maintain, as opposed to discourage, many older adults (Fern, 2009). However, given that older adults may choose to adopt an exercise program to address health concerns or increase feelings of youthfulness and independence, there may be a tendency for setting unrealistic goals in a given timeframe. If these desired outcomes – whether health or cosmetic – are not observed within a short period following program initiation, older adults may feel deflated and despondent, and adherence may become a problem.

The aforementioned factors influencing older adult participation are not the only obstacles for healthcare practitioners and exercise professionals to overcome. As with adults of any age, older adults may be reluctant to engage in regular physical activity for a variety of different reasons. Older adults are often hesitant to engage in regular physical activity or contemplate addressing health issues through exercise due to lack of self-belief and doubts over their own inability to physically complete the physical movement and effort involved. A lack of knowledge or an exercise history of sporadic exercise habits or contraindicative (incorrect and unadvisable) exercise approaches (e.g., ballistic calisthenics), may lead to a mismatch in

perceived costs and benefits of exercise participation. This may increase potential for dropout or even injury. Research suggests that a therapist or exercise professional may encourage adherence in older adults by providing assurances of safety, positive reinforcement, facilitating successful exercise experiences, providing opportunities for social interaction and support, and promoting commitment to an exercise or activity program through health contracts or written agreements (Cress et al., 2006).

However, the immediate physical impact of an exercise program on a previously sedentary or low-level activity older adult, such as mild aches or muscle soreness, may be a deterrent if not addressed or anticipated by the exercise professional or therapist. This is a concern in most adults of any age, especially if the exerciser is unaccustomed to the exercises or machines being used. Therapists or trainers could select apparatus that decrease the potential for muscle soreness in older adults (Bryant & Green, 2005), such as hydraulic or fluid-based fitness machines that do not have an eccentric loading component (do not exert load or tension on the muscle while it is lengthening), which is a movement pattern with a greater likelihood for evoking muscle soreness.

Conclusions

Current guidelines for older adults recommend a multidimensional exercise prescription that includes aerobic, muscle-strengthening, and flexibility exercises, as well as activities to enhance balance if necessary. However, to facilitate initiation as well as adherence to a purposeful physical activity or exercise regime, the program needs to be tailored to older adult needs, preferences, and incorporate educational components that debunk many of the myths mentioned previously. These elements can be overcome by effective and strategic communication with older individuals to rectify and re-define their capacity (and need) for

regular physical activity. Health and fitness practitioners need to be aware of the potential obstacles they may face when working with older adults, and utilize the ever expanding guidelines and growing body of research (Fern, 2009; USDHHS, 2008) highlighting successful and appropriate approaches for facilitating regular exercise and physical activity.

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