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EDITORIAL

Integrating functional fitness into rehabilitation: The science of high-intensity functional training

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Regular exercise leads to various physiological adaptations that enhance exercise capacity and improve overall health, irrespective of age, gender, or the presence of chronic conditions.(1) Engaging in exercise serves as a primary prevention strategy for addressing physical inactivity related chronic diseases.(2) However, participation in combined exercise programs poses challenges as many individuals within the general population report barriers to meeting the recommended guidelines for both aerobic and resistance training.(3) Two major participation barriers include time limitation and a lack of enjoyment of certain exercise intensities or modalities.(4) Hence, developing exercise interventions or programs that integrate multiple exercise modalities into a time-efficient and enjoyable framework should be a key focus for promoting physical activity and public health improvements.(2)

Keeping in view, the design and programming of exercise have continually evolved in order to align with the developing needs and trends.(5) Over the years, various high intensity training programs have gained popularity as leading trends in fitness. Amongst these is high-intensity functional training (HIFT) or functional fitness training, which has emerged as a prominent regime in the health and fitness industry. HIFT is a training approach that combines functional, multimodal movements, which are performed at a relatively high intensity and are aimed at enhancing over all physical fitness and performance.(6) This functional and competitive exercise style utilizes multiple energy systems by incorporating both aerobic and resistance exercises along with plyometric and gymnastic movements performed over varying durations.(7)

Conventional rehabilitation programs typically focus on isolated muscle strengthening and low-intensity cardiovascular training. Although effective, but these methods may lack the functional integration required for everyday activities. Whereas HIFT is characterized by strenuous exercises mimicking everyday movements (such as push-ups, lunges or squats) interspersed with short rest intervals.(6) Unlike traditional high-intensity training, which tends to focus on a single motor skill (e.g., cycling or running to improve endurance), HIFT integrates cardiovascular, muscular and neuromotor efforts. This is achieved through strategies like integrating whole-body exercises to maximize oxygen consumption, performing movements at high speeds, and optionally using scalable weights such as resistance bands, dumbbells or medicine balls etc.(8)

High intensity functional training can be adapted to different fitness levels and promotes greater muscle engagement. The primary advantage of HIFT lies in its ability to involve multiple body systems within a single session, potentially enhancing aerobic power, anaerobic capacity, muscular endurance, power and strength, while also improving body composition and overall work capacity.(6,9) Moreover, high intensity functional training is gaining recognition in rehabilitation settings for its multiple benefits. Several studies have been conducted examining the effects of HIFT across populations, including healthy adults, obese individuals, athletes, as well as patients with chronic conditions such as type-II diabetes mellitus, multiple sclerosis and even cancer. Literature supports the safety and effectiveness of HIFT in these groups, reinforcing its value in rehabilitation settings.(10-14) The growing popularity of HIFT may also be attributed to its unique exercise programs and the social and psychobiological aspects it offers. Evidence highlights the psychological and motivational benefits, as well as the competitive performance advantages associated with HIFT.(15)

High intensity functional training or functional fitness training represents an exciting fusion of fitness trends and rehabilitation science. By focusing on functional movements and high-intensity effort, it aligns with the broader goal of rehabilitation i.e. to restore and improve an individual's quality of life. Despite its growing popularity, further research is needed to

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establish standardized protocols for prescription of functional fitness training into rehabilitation regimes. The long term effects of HIFT particularly on musculoskeletal and cardiopulmonary health must also be explored. Moreover, incorporating multidisciplinary teams comprising of healthcare professionals such as physiotherapists, nutritionists, psychologists etc., can also enhance the efficacy of HIFT-based rehabilitation programs.

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