



Exercise for Cardiovascular Disease Patients: The New Normal Life in COVID-19 Pandemic

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Dear editor,

In December 2019, the first report of the new Coronavirus disease 2019 (COVID-19) was received, with over seven hundred thousand deaths worldwide to date. Many of the patients with chronic illnesses, cardiovascular disease (CVD), are at risk of higher mortality and morbidity (1). In addition, the World Health Organization (WHO) has suggested that people should avoid unnecessary outdoor activities and keep a social distance of at least 6 feet from other people and stay at home, especially for people with underlying chronic diseases (2). A significant problem with this approach, however, is the harmful effects of physical inactivity that may cause psychological and physical issues, especially in CVD patients. It has been established that beneficial metabolic and CV adaptations in response to exercise can be lost only after two weeks of inactivity and can lead to a decline in functional capacity and have detrimental effects on risk factors for coronary artery disease. There is an uncertain future about how long COVID-19 will be there. Therefore adaptation to this situation is an important consideration (3). This is a brief look at what could be a new way to approach having a healthy lifestyle, as well as safe alternatives to cardiac rehabilitation centers at these trying times.

The new normal life for CVD patients

A more active life:

A wide range of illustrated exercises such as videos or mobile applications for aerobic, strengthening, core stability, and balance exercises are available throughout the Internet. However, the safety of these exercises should be

considered by health care providers before their prescription to CVD patients (Table 1). The outcomes of exercise are not limited to better functional capacity. It also helps the patients in maintaining a positive mood, better stress control, reducing CVD risk factors, and a higher quality of life (3). In order to enable patients to keep active, we recommend low-intensity exercises that are defined as a metabolic equivalent (MET) of less than 3, as well as a rating of perceived exertion (RPE) of between 8 - 10 of 20 or 1 - 2 of 10 scales. Slow walking, bird watching, watering plants, Hatha yoga and stretching exercises, darts, billiard, and fishing are proper examples for this aim (4). Considering CV diseases and other comorbidities, it seems that stable CVD patients can freely perform the suggested activities without any restriction.

Moving towards a more physically active life from home:

What is the solution for CVD patients looking for a more active lifestyle while staying at home? It could be the home-based cardiac rehabilitation strategy previously stated as a practical solution for mild to moderate risk CVD patients by the American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR), American Heart Association (AHA), and American College of Cardiology (ACC) (5). We suggest a virtual consult for risk stratification (5,9) to find out the level of risk, comorbidities, drug history, and physical activity profile. While the patients rated as low to moderate risk for cardiac rehabilitation are recommended to begin home-based protocols, high-risk patients need to exercise more cautiously; performing

Table 1. Safety Considerations for Home-Based Exercise in CVD Patients

Safety	Values
E-learning	Registration of consultant; Proficiency of consultant; Face to face education/consultation; Illustrated exercises (photo/video) (5, 6)
Assessment of patients	Risk stratification: Online form (7, 8); Phone/video call (5)
Environmental	Proper place for exercise; Clean facilities; Avoiding extreme weather (hot and humid) (5)
Intensity of exercises	Using RPE instead of heart rate-based intensity prescription; Teaching warning signs to stop the exercise (exertional chest pain, excessive fatigue, shortness of breath, lightheadedness) (6)
Medical issues	Drug history; Past medical history; Diagnoses and comorbidities; Physical activity profile (5)
Remote support	Virtual and real-time monitoring; Telemetric portable recording devices; Mobile apps (5)

only supervised exercises according to AACVPR considerations for resuming in-center Cardiac and Pulmonary Rehabilitation Program Services (10).

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