Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Letter to the Editor

HIIT: A potential rehabilitation treatment in COVID-19 pneumonia with heart disease

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Dear Editor,

Recently, Keech and his colleagues provided a clinical trial that High-intensity interval training (HIIT) could reduce the cardiovascular risk of coronary artery disease (CAD) patients during cardiac rehabilitation and may improve the quality of life of such patients in the long term [1].

Way et al. [2] also believed that low-volume HIIT could improve cardiovascular health in patients with type 2 diabetes. HIIT has been shown to promote the formation of coronary collateral circulation, enhanced mitochondrial muscle function, repaired vascular endothelial cells and reduced chemokine chemotaxis [3]. It not only relieved the prognosis of CAD patients but also reduced the occurrence of angina pectoris. Exercise-induced myocardial protection could promote nitric oxide signal transduction and ATP-dependent potassium channel function, increase the activity of endoplasmic reticulum stress protein and myocardial COX-2 [4]. Besides, the latest research found that HIIT could cause elevated plasma and myocardial Klotho protein levels, by reducing myocardial TRPC6 expression, enhancing antioxidant defense, promoting myocardial protection, and reducing myocardial ischemia-reperfusion injury [5]. It has illustrated scientific evidence for HIIT.

The outbreak of COVID-19 has brought significant medical challenges in the world. Many infected patients suffered severe neurological, psychological and cardiac disabilities due to the virus. HIIT may be a potential beneficiary of cardiac rehabilitation therapy for patients with COVID-19 infection after discharge from the hospital, which would improve the quality of life in survivors and improve long-term prognosis. These patients will participate in social activities at an early date.

Declaration of Competing Interest

None.

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