

# The Danger of Sedentary Lifestyle in Diabetic and Obese People During the COVID-19 Pandemic

Michael Anthonius Lim  and Raymond Pranata 

Faculty of Medicine, Universitas Pelita Harapan, Tangerang, Indonesia.

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CORRESPONDING AUTHOR: Michael Anthonius Lim, Faculty of Medicine, Universitas Pelita Harapan, Tangerang 15811, Indonesia. Email: lim.michael.a@gmail.com

To the Editor,

The incidence of Coronavirus Disease 2019 (COVID-19) is growing worldwide and people with certain health conditions are likely to develop more severe infections.<sup>1–9</sup> Individuals with underlying comorbidities and/or having excessive body mass index typically have chronic low-grade inflammation which predisposes them to a higher risk of infections, with more adverse outcomes.<sup>10,11</sup> Obesity-induced systemic inflammation negatively influences innate and adaptive immunity in the same way as influenced by immunosenescence.<sup>12</sup> Furthermore, obesity considerably increases the risk of diabetes, hypertension, and cardiovascular and cerebrovascular diseases, which are among the most significant risk factors for severe COVID-19.<sup>1–3,13–15</sup>

Another important issue among obese patients is physical inactivity. There is an evident relationship between the lack of physical activity (sedentary behavior), obesity and metabolic syndrome, and aging with diminished immune and viral defenses. Currently, the preventive measures adopted to lower the risk of COVID-19 transmission include mitigation approaches and living physically active lifestyles. Mitigation activities include social distancing, personal protective measures, and environmental and surface cleaning.<sup>12</sup> Exercising in moderation, while avoiding overtraining and heavy exertion, is associated with an enhanced immune response and a decreased risk of illness.<sup>16,17</sup> Adoption of physically active lifestyles can delay the aging of the immune system, and minimize the risk of contracting communicable and non-communicable diseases.<sup>18,19</sup>

Exercise is one of the main interventions for people with diabetes and obesity, along with appropriate dietary habits and in case of diabetes, the use of oral anti-diabetic drugs or insulin.<sup>20</sup> Diet and physical activity are not only aimed at losing weight but also at boosting immunity (immune activation, immunosenescence, and vaccination efficacy) and metabolism (obesity, diabetes, and metabolic syndrome).<sup>21</sup> Despite their inability to go outside due to widespread restrictions by the governments, keeping a physically active lifestyle is indeed recommended for the population in general. Performing moderate-intensity training for 150 to 300 minutes/week or routine aerobic exercise, like 30 to 60 minutes of brisk walking, is linked to enhanced immunosurveillance and reduced risk for respiratory illness.<sup>12,19</sup>

Sedentariness is a global trend and is likely to continue even after the return to normal life conditions following the COVID-19 era.<sup>22</sup> Hence, the number of non-communicable diseases, such as diabetes and coronary heart disease, are expected to rise significantly.<sup>23</sup> Since vaccines and therapeutics are under development, preventive approach needs to be primarily focused on health promoting behaviors and implementation of hygiene measures. Recently, the use of telehealth in many medical specialties has become increasingly visible and this could be a promising option for continuity of care for high-risk individuals during the current pandemic.<sup>24,25</sup> Technological advancements will undoubtedly lead to an extensive use of virtual gyms or training sessions to help during such unusual circumstances. Therefore, maintaining a physically active lifestyle is no longer a hobby of a few, but has become necessary for all, and this requires the attention and support from all parties.

## ORCID iDs

Michael Anthonius Lim  <https://orcid.org/0000-0001-7631-6835>

Raymond Pranata  <https://orcid.org/0000-0003-3998-6551>

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