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Letter to Editor

COVID-19 and Cardiovascular Disease in the Global Chronic Disease Epidemic

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The COVID-19 epidemic and global chronic disease epidemic is expected to cost billions of dollars in the next 20 years. The role of various chronic diseases such as NAFLD, diabetes, cardiovascular disease and neurodegenerative disease research may now be relevant to the COVID-19 pandemic with the anti-aging gene repression connected to mitophagy [1,2] and the severity of the COVID-19 and heart disease. The role of critical anti-aging genes such as Sirtuin 1 (Sirt 1) have attracted interest in cardiovascular disease with a critical role of Sirt 1 in the determination of cell death and survival involved with the severity of cardiovascular disease [3,4]. Sirt 1 is a NAD(+) dependent class III histone deacetylase (HDAC) protein involved in transcriptional regulation to determine gene expression with relevance to insulin resistance and various chronic diseases. Research studies now have reported an association between COVID-19 and cardiovascular disease [5]. Interests in COVID-19 and Sirt 1 have accelerated since Sirt 1 repression may determine the effects on cellular gene expression with effects on mitophagy and cardiovascular disease. Mitophagy and cardiovascular disease are closely connected and are of major relevance to cardiology and cardiac surgery [6,7]. The role of Sirt 1 on mitochondrial survival is now important to cardiovascular disease and the effects on cardiac function and therapy. The effect of COVID-19 on inactivation of Sirt 1 [8] may lead to mitophagy and programmed cell death with relevance to myocardial infarction and ischemic heart disease. Individuals from the global chronic disease epidemic [9-11] with COVID-19 may now be extremely susceptible to cardiovascular disease and heart failure. The consumption of Sirt 1 activators [12,13] in COVID-19 heart disease individuals is critical to delay the severity of cardiovascular disease. Sirt 1 inhibitors should be avoided to improve cardiac function and rehabilitation. Low calorie diets, lifestyle changes and

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exercise will increase plasma Sirt 1 levels [14] to prevent chronic disease and cardiovascular disease in COVID-19 individuals.

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