The Effect of Physical Exercise Type, Duration, Frequency, and Intensity on Aging and Longevity

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The use of physical exercise to stay healthy throughout an individual's lifetime is key to maintaining their physical capabilities as they get older. A sedentary lifestyle can increase mortality from cardiovascular disease, neurological disease, diabetes, and cancer. The type, duration, and intensity of physical exercise are important considerations for good cardiovascular fitness and strength. Physical changes of aging can be seen at the organismal level through to the molecular level, including changes in appearance, activity levels, organ function, cellular growth, and metabolic gene expression. In this literature review, we examined the effects of physical exercise on long-term health, delayed mortality, and longevity, focusing on how often exercise should be performed, for how long, and at what level of intensity. Physical exercise, in the form of moderate-to-vigorous cardiovascular exercise or vigorous resistance training, performed for 75-150 minutes a week, was shown to reduce all-cause mortality, reduce disability, and improve the individual's quality of life. Physical capabilities decrease as we get older, but exercise can ensure that the effects of aging are less severe. Those who take part in regular physical exercise live more years without neurodegenerative disease and preserve mental capabilities. This review is significant because it shows ways to use physical exercise to live a longer, healthier, more capable life by reducing the risk of major causes of death. This review also shows areas of research that have yet to be explored such as how certain exercises affect aging, and longevity, and how exercise influences cellular aging.