

Exercise, healthy diet in midlife may prevent serious health conditions in senior years

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Following a routine of regular physical activity combined with a diet including fruits, vegetables and other healthy foods may be key to middle-aged adults achieving optimal cardiometabolic health later in

life, according to new research using data from the Framingham Heart Study published today in the *Journal of the American Heart Association*, an open access journal of the American Heart Association.

Cardiometabolic health risk factors include the metabolic syndrome, a cluster of disorders such as excess fat around the waist, insulin resistance and high blood pressure. Presence of the metabolic syndrome may increase the risk of developing [heart disease](#), stroke and Type 2 diabetes.

Researchers noted it has been unclear whether adherence to both the U.S. Department of Health and Human Services' 2018 Physical Activity Guidelines for Americans and their 2015-2020 Dietary Guidelines for Americans—as opposed to only one of the two—in midlife confers the most favorable cardiometabolic health outcomes later in life. The [physical activity guidelines](#) recommend that adults achieve at least 150 minutes of moderate or 75 minutes of vigorous physical activity per week, such as walking or swimming. The [dietary guidelines](#), which were updated in January 2021, offer suggestions for healthy eating patterns, nutritional targets and dietary limits.

In an analysis of data from participants of the Framingham Heart Study, which began more than 70 years ago in Framingham, Massachusetts, investigators examined data from 2,379 adults ages 18 and older and their adherence to the two guidelines. They observed that meeting a combination of the two recommendations during midlife was associated with lower odds of metabolic syndrome and developing serious health conditions as participants aged in their senior years in 2016-2019 examinations.

"Health care professionals could use these findings to further promote and emphasize to their patients the benefits of a healthy diet and a regular exercise schedule to avoid the development of numerous chronic health conditions in the present and in later life," said corresponding

author Vanessa Xanthakis, Ph.D., FAHA, assistant professor of medicine and biostatistics in the Section of Preventive Medicine and Epidemiology at Boston University School of Medicine in Boston. "The earlier people make these lifestyle changes, the more likely they will be to lower their risk of cardiovascular-associated diseases later in life."

Study participants were selected from the third generation of the Framingham Heart Study. Participants (average age 47, 54% women) were examined between 2008 and 2011. Researchers evaluated physical activity using a specialized device known as an omnidirectional accelerometer. The device, which tracks sedentary and physical activity, was worn on the participant's hip for eight days. Researchers also collected dietary information from food frequency questionnaires to measure the kinds and levels of food and nutrients consumed.

In this investigation, researchers observed that among all participants, 28% met recommendations of both the physical activity and dietary guidelines, while 47% achieved the recommendations in only one of the guidelines. Researchers also observed that:

- participants who followed the physical activity recommendations alone had 51% lower odds of metabolic syndrome;
- participants who adhered to the dietary guidelines alone had 33% lower odds; and
- participants who followed both guidelines had 65% lower odds of developing [metabolic syndrome](#).

"It is noteworthy that we observed a dose-response association of adherence to diet and physical activity guidelines with risk of cardiometabolic disease later in life," Xanthakis said. "Participants who met the [physical activity](#) guidelines had progressively lower risk of cardiometabolic disease as they increased adherence to the dietary guidelines."

All study participants were white adults, therefore, the findings cannot be generalized to people in other racial or ethnic groups. Additional studies with a multiethnic participant sample are needed, researchers said.

More information: *Journal of the American Heart Association* (2021).
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