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NEWS

RSNA Press Release

MRI Helps Identify Older Athletes at Risk for Heart Attack

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At A Glance

- Older endurance athletes show increased weight in the left muscle of the heart.
- It is difficult to distinguish an "athlete's heart" from a diseased heart.
- Radiologists can use magnetic resonance imaging to identify cardiovascular disease that is not yet causing symptoms.

CHICAGO — A magnetic resonance imaging (MRI) study of healthy marathon runners over age 50 showed that cardiovascular disease occurs among seemingly healthy endurance athletes and may be difficult to distinguish from the effects of training the heart muscle. The findings were presented today at the annual meeting of the Radiological Society of North America (RSNA).

"Radiologists can use MRI to identify cardiovascular disease that is not yet causing symptoms," said Torleif A. Sandner, M.D., radiologist at University Hospital, Munich University in Germany.

The study, performed at University Hospital in Essen, Germany, involved 110 male volunteers between the ages of 50 and 72, all of whom had completed at least five marathons in the last three years. The endurance athletes had no current symptoms or known history of cardiovascular disease or diabetes.

The MRI scans revealed that, although cardiac chambers were not enlarged, left ventricular mass (LVM) in the marathon runners was significantly higher than in the general population. LVM is the weight of the muscle of the left ventricle, the main pumping chamber of the heart. The marathon runners had an average LVM weight of 141 grams compared to a normal weight of approximately 77.5 grams.

"The change in the heart mass is the way the body reacts to the endurance training," Dr. Sandner said. "However, in some runners, it may also be an early sign of cardiac disease."

"It is difficult to differentiate an athlete's heart from one that has disease," added Stefan Möhlenkamp, M.D., Ph.D., cardiologist and principal investigator of the study. "Establishing criteria for what is normal in marathon runners of advanced age is one of the team's research goals."

The number of older adults participating in marathon running has risen dramatically in the

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past decade. But according to Dr. Möhlenkamp, pre-training screening of new endurance athletes doesn't typically account for problems specific to advanced-age runners.

"Conventional screening includes a blood pressure check, questions about heart disease in the family or chest pain, listening to the heart and lungs and possibly doing an echocardiogram," he said. "But these techniques can miss early potentially life-threatening cardiovascular disease."

"Exercise is the best thing anyone can do to prolong and improve the quality of life," said Dr. Möhlenkamp. "As physicians, we need to determine how to safely declare an individual of advanced age fit for marathon running."

Co-authors are Joerg Barkhausen, M.D., Kai Nassenstein, M.D., Peter Hunold, M.D. and Frank Breuckmann, M.D.

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RSNA is an association of more than 40,000 radiologists, radiation oncologists, medical physicists and related scientists committed to promoting excellence in radiology through education and by fostering research, with the ultimate goal of improving patient care. The Society is based in Oak Brook, Ill.

Editor's note: The data in these releases may differ from those in the printed abstract and those actually presented at the meeting, as researchers continue to update their data right up until the meeting. To ensure you are using the most up-to-date information, please call the RSNA Newsroom at (312) 949-3233.

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