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# Scientists find a reason for arm-swinging as you walk

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SYDNEY (Reuters Life!) - Ever wondered why you swing your arms in opposition to your legs when you walk? Scientists have come up with the answer -- it makes walking more efficient and easier.

The typical arm swinging movement had baffled scientists as it played no obvious role which prompted some researchers to suggest it was an evolutionary relic from our ancestors being on all fours with little or no purpose.

But researchers from the U.S. University of Michigan and Delft University of Technology in the Netherlands decided to find out exactly what arm swinging did or did not achieve.

They built a mechanical model to get an idea of the dynamics of arm-swinging and also recruited 10 volunteers who were asked to walk with a normal swing, with their arms tied at their sides or held there, and with arms swinging in synchrony with each leg.

The researchers found holding the arms still while walking required 12 percent more metabolic energy than swinging.

An anti-swing walk, in which the left arm moves with the left leg and right with right, was found to use 26 percent more energy as the muscles had to fight to keep this going, according to the findings published on Wednesday in Proceedings of the Royal Society B, the biological research journal of the Royal Society.

Swinging the arms also counteracted the twisting motion or "torque" of the body created by the movement of two legs along a straight path and smoothed the motion of walking, creating less of an energy drain on the leg muscles.

"Although arm swinging is relatively easy to achieve, its effect on energy use during gait is significant," the researchers wrote in their report.

"Rather than a facultative relic of the locomotion needs of our quadrupedal ancestors, arm swinging is an integral part of the energy economy of human gait."

(Reporting by Belinda Goldsmith, Editing by Sugita Katyal)

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