

Swinging arms as we walk 'helps preserve energy'

The mystery of why we swing our arms as we walk may have been solved, after scientists discovered that it is more energy-efficient than holding them still.

By Matthew Moore

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Experts have long been baffled about why humans move the arms when strolling, since they play no obvious role in helping propel the body forward.

But a modelling experiment carried out by researchers in the US and Netherlands has found that the movements actually provide considerable hidden benefits.

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Not only does it take 12 per cent more energy for muscles to keep the arms straight than letting them sway freely, but swinging arms also makes life easier for the legs.

The force of a walker's contact with the ground increases by 63 per cent if their arms are not in motion, the scientists found.

"Although arm swinging is relatively easy to achieve, its effect on energy use is significant," wrote Stephen Collins of the Delft University of Technology and the University of Michigan, one of the study's co-authors.

"Arm swinging can reduce ground reaction moment requirements, leading to overall decreased energy expenditure, perhaps in the muscles of the lower limbs."

The study, *Dynamic Arm Swinging in Human Walking*, is published in the journal *Proceedings of the Royal Society B*.

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