

# Migrating birds chill to fatten up

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Marathon runners are famed for pasta packing in the days before a big run but when tiny passerine birds set out on their epic migrations, the distances are too great to cover on the energy reserves with which they embark. Michał Wojciechowski and Berry Pinshow explain that most birds stop off en route to their destination to refuel.

One of the Eurasian blackcaps' preferred refuelling stops is Midreshet Ben-Gurion, Israel, where the birds fill up on fruit and insects before setting off again. Knowing that birds expend twice as much energy during stopovers than they use in transit, the duo wondered whether the tiny aviators drop their body temperature at night during stopovers to save energy and build up their reserves faster. They publish this discovery on 11 September 2009 in *The Journal of Experimental Biology*.

Collecting migrating blackcaps at their stopover site on the Sede Boqer Campus of Ben-Gurion University and near Toron, Poland, Wojciechowski and Pinshow weighed the birds and monitored their body temperatures and metabolic rates as the birds stocked up on fruit supplemented with mealworms. During the day the birds' body temperatures hovered around 42.5°C, but as dusk fell, their temperatures began to drop. The average normal body temperature at night was about 38.8°C, while one particularly skinny individual's temperature plummeted to 33°C. And when the team plotted the birds' body masses against their nocturnal temperatures, the smaller birds' (

Finally, the team looked at the relationship between the birds'

temperatures and their metabolic rates and found that the heavier birds dropped their metabolic rates least, while the lightest birds dropped their metabolic rates most. Some conserved a remarkable 30% of their energy by becoming hypothermic.

Knowing that small birds also conserve energy by huddling together for warmth, Wojciechowski and Pinshow suggest that migrating birds may combine both strategies to shorten refuelling stopovers to fatten up fast before hastening on their way.

More information: Wojciechowski, M. S. and Pinshow, B. (2009). Heterothermy in small, migrating passerine [birds](#) during stopover: use of hypothermia at rest accelerates fuel accumulation. *J. Exp. Biol.* 212, 3068-3075. [jeb.biologists.org](http://jeb.biologists.org)

Source: The Company of Biologists ([news](#) : [web](#))

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