Scans capture spider's heart beat

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Intricate scans of tarantulas reveal for the first time in detail how their hearts beat.

The MRI scans, which show blood flowing in and out of a spider's heart, suggest the way in which a spider's heart functions is much more complex than previously thought.

Insight from images

University scientists used the scans to look at heart rate and blood volume, enabling a better insight into the workings of a spider's heart.

The images will help give greater insight into the unique evolution of spiders.

The latest scans could also help inform wider research that might explain how spiders differ genetically from other species.

Evolution

They will help in understanding how the species evolved differently from other animals.

Unlike most other invertebrates, spiders - like humans - have more centralised organs such as the heart and the brain.

Further research

Researchers are now looking at using the same scanning techniques to better understand how spiders' brains work.

The team aim to track the expression of chemicals in the brain as the spiders react to different environmental conditions, giving insight into a spider's intelligence.

The research, carried out in collaboration with the University of Glasgow, was presented at the annual Society for Experimental Biology conference.

"These specialized MRI scans have given us in-depth images to provide a much better insight into how a spider's heart works. Further scans will help us gain new evolutionary information and identify not only the similarities that we share with spiders, but also how and when they acquired them independent of ourselves," said Gavin Merrifield, Department of Medical Physics.

Provided by University of Edinburgh