Most stretchable spider silk reported

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The egg sac silk of the cocoon stalk of the cave spider *Meta menardi* is the most stretchable egg sac silk yet tested, according to a study published Feb. 8 in the open access journal *PLoS ONE*.

Spider silk is of broad interest for its strength, extensibility and toughness and possible applications for material science and biomechanical engineering, and there are many different types of silk from many different spider species. In the current study, the authors, led by Nicola Pugno of Politecnico di Torino in Italy, collected egg sacs from caves in Piedmont in northwest Italy and tested their response to

mechanical strain.

They found that the egg sac silk of the cocoon stalk was more stretchable than any previously tested egg sac silk. These results may partly reflect the fact that the silk was collected from its natural habitat rather than produced in a lab, the authors write.

"This observation paves the way for better understanding super-stretchable biological materials and also for a more rational design of the related bio-inspired nanomaterials", says Dr. Pugno.

More information: Lepore E, Marchioro A, Isaia M, Buehler MJ, Pugno NM (2012) Evidence of the most Stretchable Egg Sac Silk Stalk, of the European Spider of the Year Meta menardi. *PLoS ONE* 7(2): e30500. doi:10.1371/journal.pone.0030500

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