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Phoneutria nigriventer, the Brazilian wandering spider. The huge fangs are red

Nature's Viagra: Spider Venom Induces Erection

It acts on initiating the erection

Girls, do not be so afraid of spiders! They can be your best friend. Researchers have known for long that the powerful venom of the Brazilian wandering spider (*Phoneutria nigriventer*) does more than sending you to a hospital: it induces hours-long erection. The toxins provoke general pain and higher blood pressure, but also this uncomfortable erection. "We're hoping eventually this will end up in the development of real drugs for the treatment of erectile dysfunction." said Romulo Leite of the Medical College of Georgia, co-researcher in a team that has detected the chemical responsible for the erection. In US alone, about 18 million men experience erectile dysfunction. In one third of men suffering from mild or moderate impotence, Viagra does not work; Levitra or Cialis sometimes have an effect; in the severe cases, the situation is even worse. The active compound was a peptide (short protein) named Tx2-6. When injected in rats, the animals experienced a significant raise in penis blood pressure and nitric oxide levels within corpora cavernosa, the two main cylinders made of spongy tissues running along the penis. The nitric oxide is implied in the neuronal pathway of an erection. In the end, the cGMP enzyme makes the smooth muscles of the penis' corpora cavernosa, so that the blood fills up this tissue resembling a honeycomb, expanding it (till about 10 times more in humans). "They (corpora cavernosa) need to relax so the blood will come inside and that's how you get an erection, because the blood gets trapped into the penis." said Leite. But the PDE-5 breaks down the cGMP, putting an end to the fiesta: the smooth muscles contract and the blood goes out of the penis, which turns back to its limp state. Viagra, Cialis and Levitra act against PDE-5. But Tx2-6 works differently: it acts in the first steps of the erection initiation, raising the nitric oxide levels. Combining Tx2-6 with Viagra would satisfy the needs of many more erectile dysfunction patients. "So the combination of the two drugs could be even more efficient in patients that don't respond well to Viagra," Leite said.