

Inside scorpion venom: A future Rx for arthritis?

Millions of people live with the pain and physical limitations of arthritis. Steroids can offer relief, but they typically cause a host of serious side effects when administered systemically. Non-steroid arthritis treatments also carry serious toxicity risks.

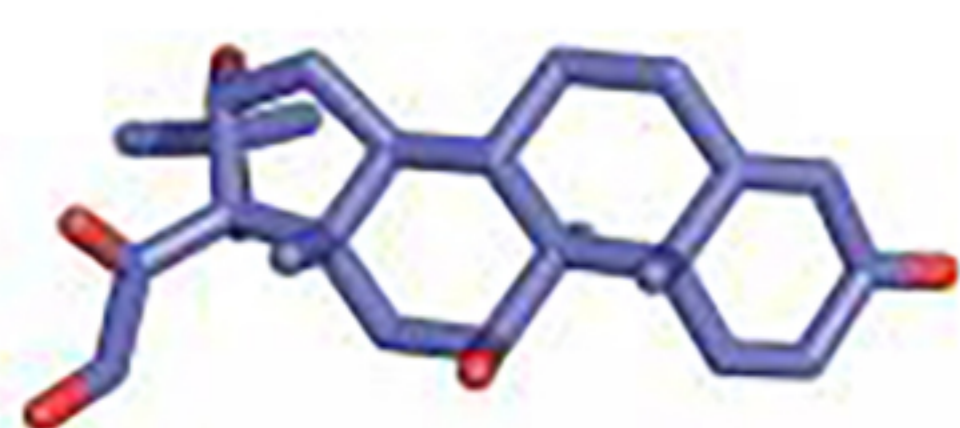
A scorpion-derived mini-protein could one day deliver effective drugs to multiple joints while nearly eliminating side effects.

Scientists at Fred Hutch have identified tiny proteins in scorpion venom that rapidly accumulate in cartilage. In preclinical studies, they linked these mini-proteins with steroids and showed that the combination accumulates in cartilage, the steroids are slowly released, joint inflammation completely resolves, and there are no detectable side effects. The researchers now want to build on that work and develop drugs for patients that could potentially avoid the body-wide toxicities and infection risks caused by nontargeted steroid treatment.

AREAS MOST COMMONLY AFFECTED BY ARTHRITIS



IMPROVING STEROID SAFETY

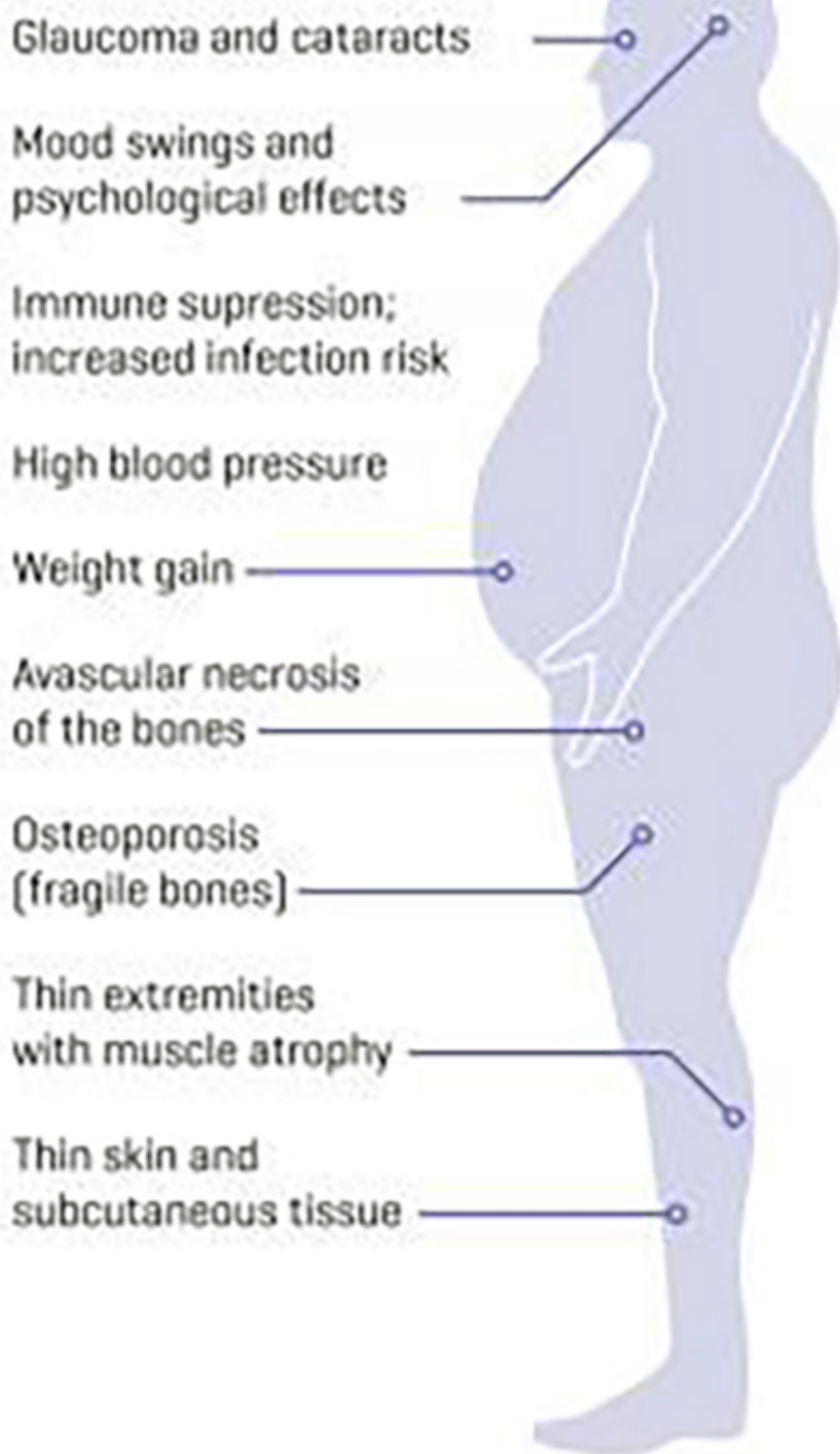


STERIOD ALONE: In standard nontargeted treatment, steroids travel throughout the body. Only a tiny amount gets to the joints because cartilage lacks blood vessels.



Brief arthritis relief

Serious long-term toxicity



PEPTIDE-STERIOD: The peptide-steroid conjugate accumulates in cartilage, where steroids are slowly released into the joint. Any steroid released into the bloodstream rapidly becomes inactive.



Prolonged arthritis relief

Minimal systemic toxicity

