

New Cure for 4-Hour Erections?

Orphan Drug Stops Priapism, Reverses Penis Damage in Mice

By [Daniel J. DeNoon](#)

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Reviewed by [Louise Chang, MD](#)

Nov. 4, 2009 -- Men suffering [penis](#) pain and damage from erections lasting longer than four hours may benefit from an orphan drug used to treat severe "bubble boy" immune deficiency, mouse studies suggest. The condition, called [priapism](#), seems funny only to those who have never suffered it. More than 40% of men with sickle-cell [anemia](#) suffer priapism. It also strikes some men with [diabetes](#) and can be a side effect of erectile dysfunction drugs -- particularly those injected into the penis. It's not a joke -- it's a medical emergency.

Swelling from priapism can be exquisitely painful. But that's not the worst of it. Erections lasting longer than four hours cut off the supply of fresh blood to the penis. The result: [Penile fibrosis](#), the formation of scar tissue in the main body of the penis. This often means permanent erectile dysfunction.

Perhaps not any more. While studying mice missing the gene that malfunctions in kids with severe combined immune deficiency (SCID), Yang Xia, MD, PhD, and colleagues at the University of Texas, Houston, noticed that the mice suffered priapism and penile fibrosis.

Replacing the enzyme made by the gene -- adenosine deaminase -- not only relieved priapism, but markedly reduced the animals' penile fibrosis.

"We identified a new application to treat priapism with a drug that is commonly used to treat SCID," Xia tells WebMD. "When we treated the mice, we do not see any side effects or any abnormality. Actually, the mice look better. We can quickly correct the priapism and prevent and treat penile fibrosis."

Current [treatments for priapism](#) are not optimal, says Harinder Juneja, MD, a University of Texas hematologist who treats many patients with sickle-cell disease.

If drug injections can't tighten the muscle that controls blood flow to the penis, the excess blood must be withdrawn from the main body of the penis. To do this, doctors may withdraw the blood with a needle or surgically install a shunt to divert blood flow from the penis. Aside from being painful, these treatments often fail to prevent penile fibrosis.

Now Xia and colleagues have found that priapism and penile fibrosis result from excess amounts of adenosine in the blood.

"The discovery of excess adenosine as the causative factor for both prolonged penile erection and penile fibrosis in mice opens up the possibility of treating and even preventing this painful and dangerous disorder," they conclude.

Juneja says he's trying to get a clinical trial under way. The good news is that the treatment, PEG-ADA, is already known to be safe in humans. The bad news is that it is very rarely used. As a consequence, it's an extremely expensive "orphan drug" produced with government assistance.

"This will take a while to get to the stage of a treatment," Juneja warns.

Xia and colleagues report their findings in the Oct. 26 issue of *The FASEB Journal*.