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## 2008 Young Innovator

# Jeffery Karp, 32

*Harvard-MIT Division of Health Sciences and Technology*  
Gecko-inspired surgical tape



Credit: Stemgent

### Multimedia



View a detailed illustration and photos of Karp's gecko-inspired

Bioengineer Jeffrey Karp may finally have found a noninvasive alternative to the sutures and staples that have long been a mainstay of surgery and emergency medicine. Using a biodegradable elastic polymer, Karp and his colleagues have created a surgical tape that is covered with nanoscale pillars akin to the gripping structures on geckos' feet. Coated

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tape.



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with a sugar-based glue, the tape securely closes a surgical incision and then degrades completely over time. Karp can adapt the polymer to suit different applications: a patch for the heart, for example, would need to be more stretchable than one for the liver, while one to close cuts on the skin would need a different pattern of pillars. The polymer can also release drugs to help tissue heal. More than two dozen companies are interested in licensing the tape, which has shown promise in early animal tests. If all goes well, gecko tape could enter clinical trials within five years. --*Katherine Bourzac*

with a sugar-based glue, the tape securely closes a surgical incision and then degrades completely over time.

Karp can adapt the polymer to suit different applications: a patch for

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