

Growing our own bones: Another step in regenerative medicine?

[Nina] Tandon is co-founder and CEO of [EpiBone](#), a company working on custom-growing bones using patients' own stem cells. In a talk at Singularity University's Exponential Medicine in San Diego [November 4-7], Tandon shared some of her company's work and her insights into regenerative medicine, a field with tremendous promise for improving human well-being.

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[W]e're learning how to fix and rebuild our own bodies using, well, our own bodies. Some examples include [CAR-T therapies](#), which fight cancer using a patient's own cells; regenerative medicine, which uses [stem cells](#) to repair body parts or make new ones; and [microbiome analyses](#), which use our gut bacteria to fashion personalized dietary treatments.

Tandon's expertise, though, is in personalized bones.

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Here are some details of their method.

First, patients undergo a CT scan to determine the size and shape of the bone they need. Stem cells are extracted from the adipose (fatty) tissue in the abdomen. A scaffold model of the bone is created, as is a custom bioreactor to grow the bone in.

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When they're ready, the stem cells are infused into the bone scaffold, and a personalized bone graft grows in the bioreactor in just three weeks. When the new bone is implanted into the patient's body, the surrounding tissue seamlessly integrates with it.

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Epibone is hoping to start human clinical trials next year.

Read full, original post: [Custom-Grown Bones, and Other Wild Advances in Regenerative Medicine](#)