

## Blood Vessels Grown From Skin

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Two kidney dialysis patients from Argentina have received the world's first blood vessels grown in a laboratory dish from snippets of their own skin, a technique that doctors hope will someday offer a new source of arteries and veins for diabetics and other patients.

Scientists from Cytograft Tissue Engineering Inc., a small biotechnology company in Novato, Calif., reported the tissue-engineering advance on Tuesday at the annual conference of the American Heart Association here.

Dr. Elizabeth Nabel, director of the National Heart, Lung and Blood Institute, which has spent \$2.5 million to finance the company's work, called the new method "extraordinarily promising."

Because it uses the patient's own tissue, the technique steers clear of the political and ethical debate surrounding embryonic stem cells.

Like many patients in dialysis, the two Argentines, a 56-year-old woman and a 61-year-old man, were faced with the prospect of running out of healthy blood vessels. To grow new ones, doctors took a small piece of skin and a vein from the back of the hand, and nurtured them in a laboratory dish with growth enhancers to help produce substances like collagen and elastin, which give tissues their shape and texture.

The process produced two types of tissue: one that forms the tough structure or backbone of the vessel and one that lines it and helps it to function.

The feel of the new tissue "was very similar to the other vessels" that were present from birth, said Dr. Sergio Garrido, the surgeon who implanted it in the two patients.

The woman's new vessel has withstood needle punctures three times a week for six months and the man's for almost three months.

In the future, doctors hope the homegrown vessels will prevent amputations in diabetics who suffer from poor circulation, and give heart-bypass patients new veins or arteries to detour around blocked vessels. The method may also hold promise for children born with defective blood vessels.