



From The July 1998 issue of Nutrition Science News

science briefs

How Aloe Heals

Thousands of years after aloe (*Aloe vera*) was first used to treat burns, frostbite and wounds, researchers are beginning to understand how the herb heals. Two studies headed by P. Chithra at the Central Leather Research Institute in Madras, India, confirm the wound-mending abilities of aloe and hint at its cellular workings.

In the first study, researchers investigated the effect of aloe gel on glycosaminoglycans, skin components that influence wound healing. They prevent blood clotting, regulate inflammatory cell function, and form a scaffold for the collagen and elastic fibers that "knit" skin together.

Researchers divided wounded rats into three groups receiving placebo, topical aloe or oral aloe. After treatment, tissue levels of several glycosaminoglycans rose significantly in the treated rats. For instance, uronic acid was 49 percent higher in the group receiving topical aloe and 43 percent higher in the group receiving oral aloe--each compared with placebo. It seems that aloe improves wound healing by increasing synthesis of glycosaminoglycans.

In the second study, researchers looked at aloe's effect on wound healing in diabetic rats, specifically its effect on collagen content. Connective tissue abnormalities, such as diminished collagen content, are largely responsible for diabetics' poor wound-healing abilities.

Researchers again divided animals into three groups: those receiving placebo, topical aloe and oral aloe. Compared with the placebo group, tissue collagen content increased 89 percent in the rats treated with topical aloe and 83 percent in rats receiving oral aloe. The treatment groups also displayed increased cellular collagen synthesis, quicker skin growth and faster wound closure. Compared with the placebo group, the tensile strength of the wounds treated with aloe nearly doubled.

The authors speculate that aloe gel might accelerate wound healing by lowering blood glucose levels (shown to improve wound healing in diabetics) or by stimulating the function of fibroblasts, the cells that make collagen.