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Mechanical Leech  
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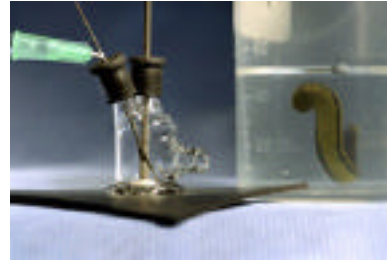
Leeches are found all over the world in most fresh water. In the past as late as Five thousand years ago, Egyptian medics believed that by letting a leech suck a patient's blood it would help cure everything from fevers to flatulence. In medieval Europe, leeches were used so much that doctors were called leeches themselves.

In the 20th century doctors turned away from the leeches. A few physicians, however, saw that leeches play a special role in certain kinds of surgery by helping promote blood flow to damaged tissue.

A leech has natural anticoagulants in its saliva, and through its constant sucking keeps blood flowing. Once bitten, victims can bleed for hours, allowing oxygenated blood to enter the wound area until veins re-grow and regain circulation.

Today the leech is invaluable in microsurgery when reattaching minute veins. These leeches have saved lives and limbs, reducing severe and dangerous venous engorgement post-surgery in fingers, toes, ear, and scalp reattachments; limb transplants; skin flap surgery; and breast reconstruction.

Leeches do have their downsides. They slip off patients and reattach themselves in unwanted places. Some patients simply can't stomach the thought of a Leech on them. They live up to 10 days out of their environment. They only consume as much blood until they are full. Leeches are not sterile and can cause bacterial infections.



A mechanical leech works just as well as the real thing.

A team at the University of Wisconsin developed its own sterile and efficient version of the leech.

This device is used to treat a condition called venous congestion, which is a complication of reconstructive surgery. Arteries pump blood into the reconstructed tissue, but the associated veins don't let the blood flow out. This is because the veins have become clotted, the excess blood in the tissue, if severe enough, that it deprives the tissue of oxygen and other nutrients and can cause it to die.

The mechanical leech delivers and disperses the anticoagulant better than the parasite. It can remove more blood from a larger area of tissue with its 8 mm incision for the injection of the anticoagulant.

- *Mechanical leech therapy to relieve venous congestion, J Reconstr Microsurg. 1995 Jan;11(1):51-5. PMID: 7714880.*
- *Development of a mechanical device to replace medicinal leech(Hirudo medicinalis) for treatment of venous congestion. Journal of Rehabilitation Research and Development Vol. 39 No. 4, July/August2002*
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