Regrowing lost limbs

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Another option may be on the horizon for patients who lose limbs due to war, accident, or disease. Instead of using artificial legs or arms, patients actually may regrow their own missing limbs. An article in the current issue of Chemical & Engineering News (C&EN), ACS' weekly newsmagazine, focuses on research efforts to turn the long-standing dream of human limb regeneration into reality.

C&EN Senior Editor Sophie Rovner notes that salamanders, flatworms, and certain other creatures can easily regrow lost body parts, including organs, nerves, and muscle. But regenerative capabilities are rarer and much more limited among humans and other animals. People can grow new skin and nerves, for instance, but regrowing an entire arm or leg seems like pure science fiction.

The article describes how salamanders — which can regrow an entire limb — and other animals are providing clues to regenerating human limbs. Scientists, for instance, have discovered certain proteins and genes with key roles in regenerating lost body parts. Environment also may be an important factor in regeneration. Certain chemicals in the amniotic fluid that cushions and protects fetuses prior to birth may help promote regeneration in adult mammals. There are other hints that electricity might be used to help jump-start regeneration.

More information: "Recipes for Limb Renewal", This story is available at pubs.acs.org/cen/science/88/8831sci1.html

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