

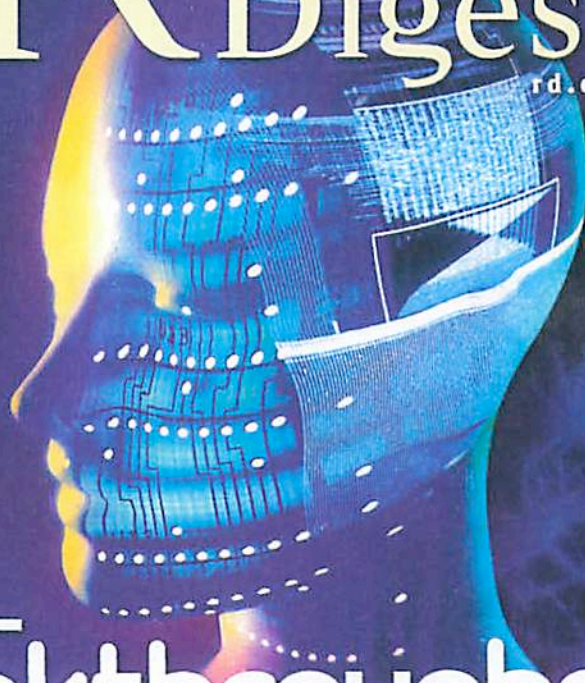
TAP YOUR BRAIN'S HEALING POWER



Ellen Pompeo
Anatomy of
A Hospital
Drama

Reader's Digest

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STOP AN EPIDEMIC!

SOON THERE may be a way to fight a pandemic before it has time to spread. The Hemopurifier, designed by Aethlon Medical, a small biotech company in California, is a blood-filtering device that removes viruses and toxins before infection attacks organs, using a method similar to dialysis.

The cool part: Treatment can begin without first identifying the infectious culprit. The

blood cleaner comes in two sizes and is used with portable pumps or dialysis machines. The smaller version is the size of a large pen. It can be attached to an artery in the arm by emergency medical personnel, using only needles, tubing and tape. After filtering of the blood is complete (within a few hours), researchers can begin to identify the germ or toxin from blood samples. Aethlon's CEO,



James A. Joyce, points out that it took about 90 days before the SARS virus was identified. With the Hemopurifier, you won't lose valuable time—and lives—while scientists in the laboratory try to figure out what they're dealing with.

» 1-2 YEARS

SUSAN DOREMUS

BONE BUILDER?

If Spider-Man had gone to medical school, he could have made a fortune in orthopedics. That's because new research by Tufts University bioengineers shows that spider silk, combined with tiny glass beads called silica, creates a new material that could one day be used in growing and repairing human bones.

Spiders usually use their silk to make webs and catch prey, and scientists have long studied the benefits of the flexible, strong fibers. The new "fusion" material promises to improve the quality of bone implants in surgery. Earlier research on spider silk suggests it can be used in many products, including surgical sutures, body armor and even artificial ligaments for people with knee injuries.

» 5+ YEARS

NEENA SAMUEL

ILLUSTRATED BY HEADCASE DESIGN

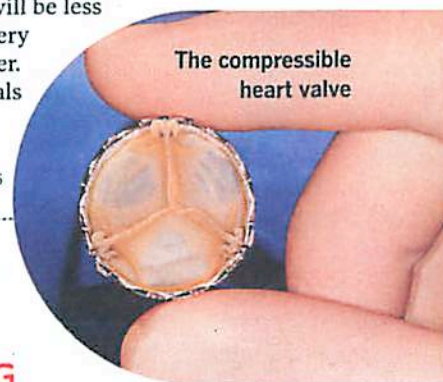
(TOP) VEER JOHN CHURCHMAN/PHOTONICA/GETTY IMAGES; (RIGHT) EDWARDS LIFESCIENCES

EASIER HEART SURGERY

NEARLY 100,000 people undergo chest-cracking open-heart surgery to replace heart valves each year. But a less invasive technique may become the new standard. As with angioplasty, doctors enter the body through a groin vessel, thread tools and devices into the heart (the valve itself compresses to the diameter of a pencil), and operate while watching live images from an echocardiogram and x-ray machine. The procedure will make valve repair or replacement feasible for sick patients who can't handle the stress of open-heart surgery (as well as those reluctant to undergo it the old-fashioned way), possibly doubling the number who can be helped. It will be less painful, and recovery time will be quicker. Investigational trials are under way.

» 4-5 YEARS

LISA FIELDS



The compressible heart valve

BETTER BREAST CANCER SCREENING

A NEW ultrasound technique lets radiologists distinguish between malignant and benign breast lesions. By using elasticity imaging, researchers accurately identified harmless and cancerous lesions in almost all of the 80 cases studied. An estimated 213,000 women are diagnosed with breast cancer in the

U.S. annually, and early detection is their best hope. "If our results can be reproduced in a large multicenter trial," says Richard G. Barr, MD, of Northeastern Ohio Universities College of Medicine, "this technique could significantly reduce the number of breast biopsies required." » 1 YEAR

FRAN LOSTYS