

# Brain-blood booster

**The ResQPod helps to increase blood circulation, and it may be used on astronauts today after the Atlantis space shuttle lands. Low blood pressure is a common problem for astronauts after reentry.**

By BRADY AVERILL • baverill@startribune.com

**W**ASHINGTON—A Minnesota-made device may help Minnesota astronaut Heide Stefanyshyn-Piper get back on her feet more easily today.

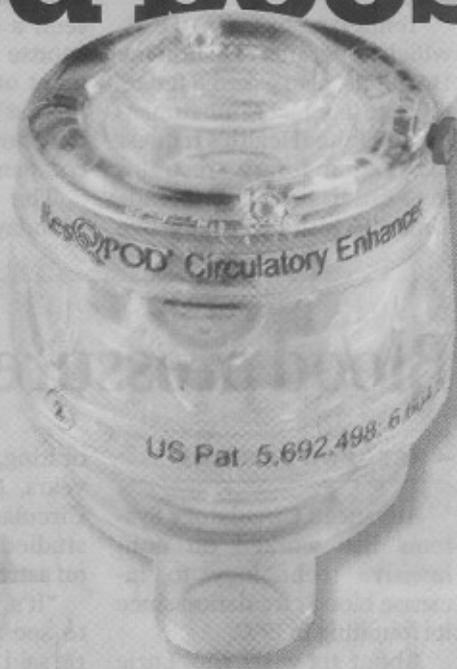
After the space shuttle Atlantis lands, physicians will have ready a device called the ResQPod, which increases blood flow to the heart and brain, if astronauts develop low blood pressure.

Low blood pressure is a common symptom when astronauts are reintroduced to gravity, according to Advanced Circulatory Systems Inc., maker of the device. They can become lightheaded; in the past, some have fainted.

"We just think it would be a nice way for our company to contribute to this program, especially to help a native Minnesotan who is also an astronaut," said Dr. Keith Lurie, creator of the device used by NASA and chief medical officer of Eden Prairie-based Advanced Circulatory Systems.

A mouthpiece would be attached to the golf ball-sized device, into which astronauts can breathe for 30 to 60 seconds to boost blood circulation. The ResQPod typically is used during CPR in ambulances and emergency rooms, connected to a face mask or a breathing tube, said Lurie, who also is a University of Minnesota professor.

**ResQPod continues:** NASA studied the device for five years. **D2 ▶**

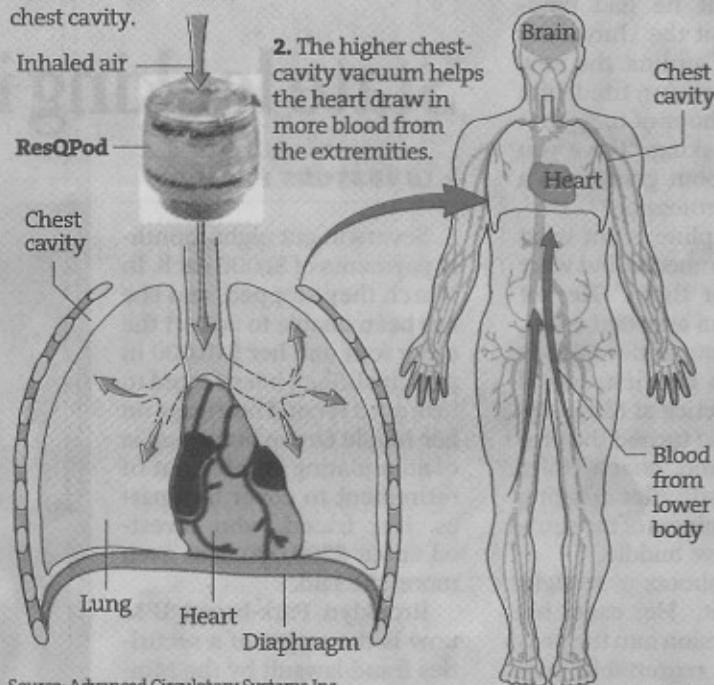


The ResQPod is attached to a mouthpiece or face mask to create low chest-cavity pressure so the heart pumps more blood to the brain.

## MINNESOTA-MADE DEVICE HELPS NASA

The ResQPod device will be available to Atlantis space shuttle astronauts after reentry today. It's common for astronauts to develop low blood pressure when their bodies are reintroduced to gravity. The device helps increase blood flow quickly to the heart and brain.

1. The ResQPod slightly restricts the intake of air, causing a higher-than-normal vacuum in the chest cavity.
2. The higher chest-cavity vacuum helps the heart draw in more blood from the extremities.
3. Then the heart contracts, sending the larger-than-normal volume of blood to the brain.



Source: Advanced Circulatory Systems Inc.

Star Tribune

# Blood pressure is a NASA problem

## ◀ RESQPOD FROM D1

Advanced Circulatory Systems has worked on non-invasive technology to increase blood circulation since its founding in 1997.

About six years ago, Lurie talked about the technology with a colleague at the American Heart Association who then was involved in NASA launches and landings. Lurie knew that for years, NASA had been trying to counter the low blood pressure problem.

They talked about collab-

orating, and for the past five years, NASA and Advanced Circulatory Systems have studied the ResQPod for use on astronauts.

"It's been very exciting to see this all develop," Lurie said.

It's possible the device would be used for subsequent shuttle missions.

"If someone uses it and they feel better, they'll continue to use it," said Dr. Victor Convertino, who used to work at NASA and has studied the device. Convertino continues

to study the ResQPod at the U.S. Army Institute of Surgical Research and its use on injured soldiers who've lost a lot of blood.

In the past, NASA has given astronauts salt and fluids shortly before reentry to counter the problem of low blood pressure, Convertino said.

NASA physicians were not available for comment.

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