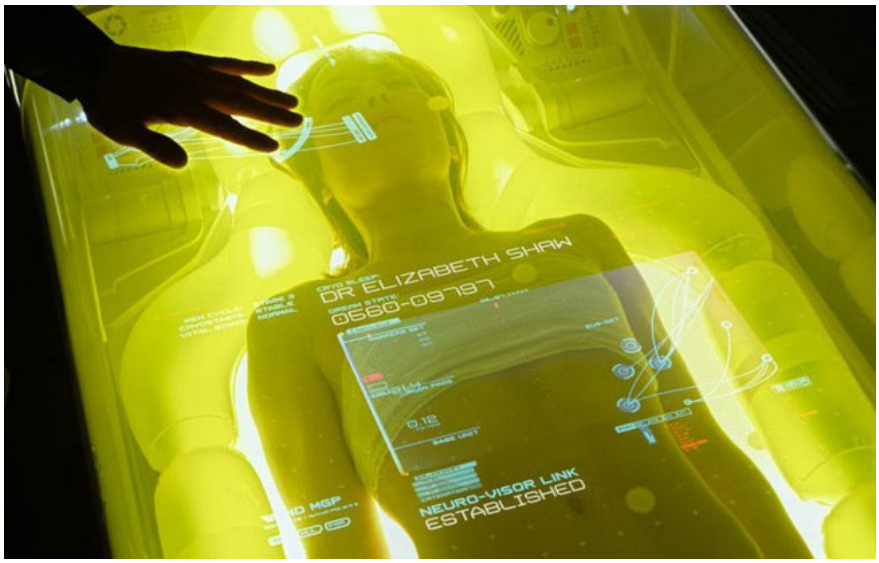
The first human being had a biological pause to extend life, literally 'switched off and on'

With a biological pause, doctors will have about 2 hours to save a patient's life instead of a few minutes in a normal situation.

Doctors in the US for the first time brought a patient into suspended animation - biological pause. The entire physiological function of this patient's body is slowed down to almost stopping so that the doctors have enough time to save their patients' lives. Instead of having a few minutes if emergency patients are in a normal state, with a biological pause they will have about 2 hours.

This bio-pause test has been approved by the US Food and Drug Administration (FDA). From now until the end of 2020, Dr. Samuel Tisherman, a scientist from the University of Maryland Medical School will conduct a biological pause for at least 10 to test this method.



Biological suspensions are referred to as the term "emergency maintenance and resuscitation" (EPR) and will be assigned to cardiac patients who have stopped beating due to an acute injury such as a stab or gunshot.

Normally, when a heart patient has stopped beating, doctors will only have a few minutes to save them from the door to life and death to close. 95% of patients in such cases will die.

With EPR technology, patients who have stopped beating will have a better chance of living. Through a special technique, the patient's body will be quickly cooled to about 10 - 15 ° C. The patient's entire blood will be drained outward, and the doctor will transfuse into a cold saline solution.

Since that time, the patient's brain has almost completely stopped all activities. The connection between the brain and the body's cooling system is disconnected. If the patient is not yet considered dead, the surgeon will perform surgery.

EPR, doctors will have an additional 2 hours to handle and overcome the injury that patients experience instead of a few minutes with natural cardiac arrest. The blood will then be transferred to the patient's body, warmed up and finally, the doctors will restart their hearts.

EPR is currently recommended for patients with acute cardiac arrest.

At normal body temperature - about 37 ° C, to create energy the cells need a constant supply of oxygen. When the heart stops beating, the supply of oxygen to the cells is cut off. Without oxygen, our brain can only survive for about 5 minutes. After that, each part of the brain is destroyed and cannot be recovered. However, all the chemical reactions in our cells will slow down or pause when our body and brain temperatures drop.

From now until the end of 2020, EPR technology will be tested on 10 patients. The U.S. Food and Drug Administration (FDA) has authorized Tisherman and doctors to perform EPR on severely injured patients who can lead to death and no alternative treatment available without Consensus of the patient.

However, Tisherman and the team want to respect patients' decisions. They described the EPR method and their intentions in the mass media, meeting and discussing with the local people. A website has been created so that people can enter their name if they do not want doctors to perform EPR on their body in all situations.

The EPR will keep the patient's vital door open for another 2 hours, giving the surgical team more time to deal with and repair the trauma that the patient has.

The EPR method has obtained positive results when tested in animals. Doctors had enough time to treat wounds, wake and recover for pigs suffering from acute trauma that was cooled for 3 hours.

Tisherman said he and his colleagues are trying to buy more time for themselves to be able to save patients previously thought to be unsaved.

How long can EPR last and keep the patient's life window open?

There is no clear answer to this question yet. During the process of returning blood, the patient's cells are reheated, they may be traumatized by a series of chemical reactions. The longer the time without oxygen, the patient's body will face more damage.

Tisherman said his team has yet to identify all possible causes of injury during reperfusion. But he can give a patient a glass of medicine to extend the length of time the body is suspended and minimize injuries.

Tisherman described the entire working principle of EPR and the plan to test it on humans at a symposium held at the New York Academy of Sciences.

1. The cause of electrostatic shock when it is cold and how to prevent it
2. The mistake when drinking milk turns it into a poison in the body