

# INTRODUCING CRYONICS AND CRYONICS-UK

## What is Cryonics?

Cryonics is the preservation of a person's body, after death, in the hope that it will be possible to reanimate the person at some time in the future. This is achieved by keeping the body immersed in liquid nitrogen at about  $-190^{\circ}\text{C}$ , at which temperature no decay takes place.

The main aim is to preserve the brain with as little damage as possible, to preserve memories and personality traits. It is presumed that the remainder of the body would be restored or replaced.

## What are the main steps in the cryo-preservation process?

To maximise the chances of being re-animated, it is vital to minimise brain damage due to the chemical changes that take place on death, especially due to ischemia - lack of blood flow. This means that the body should be prepared for cryo-preservation immediately after death. The main steps in the process are to:

- make prior arrangements for appropriate end-of-life care so that verification of death can be rapid, and some limited treatment to reduce ischemic damage can be given after death and prior to its verification;
- arrange for a stand-by team to be ready at the time of death so that treatment can be started with minimum delay - ideally within five minutes of death;
- cool in water and ice with chest compressions and administration of medications, to slow down the process of decay before significant damage has occurred;
- perfuse the head with a cryo-protectant solution to inhibit ice crystal formation during freezing, leading to damage of the tissue structure;
- cool the body with dry ice (frozen carbon dioxide) to about  $-70^{\circ}\text{C}$  and transport at this temperature in a specially insulated container to a cryonics provider; who will
- cool the body further, with liquid nitrogen to about  $-190^{\circ}\text{C}$  and store it indefinitely in liquid nitrogen until, hopefully, it can be re-animated.

## Who are Cryonics-UK?

WE ARE a self-help organisation whose aims are to provide a team of trained individuals who are able to give full, professional-standard stand-by services on the death of a member, to ensure that the body is quickly cooled and suitably treated to minimise damage due to decay and freezing.

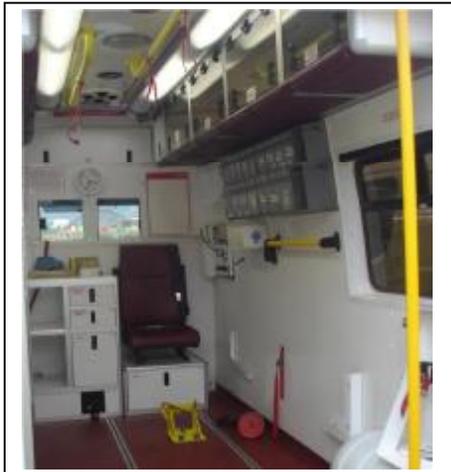
WE ARE NOT a commercial organisation, and our stand-by teams are made up of members who have given their time to undergo training and to help with the running of our organisation, and whose fees pay for our equipment and running costs. As such, we are a non-profit organisation and are a registered charity.



Cryonics-UK's specially equipped ambulance

**WE OPERATE** throughout the UK and will consider sending teams to Europe, subject to individual members being available and willing to go.

## **Who should join Cryonics-UK, and why?**



**Inside the ambulance**

Cryonics-UK is aimed at people who want to be cryogenically preserved and have a contract with a cryonics storage provider, currently either Alcor in Arizona or the Cryonics Institute in Michigan, USA, both of whom provide indefinite storage in liquid nitrogen.

In order to maximise the chances of reanimation at some future date, it is essential that the body is quickly cooled immediately after death. Alcor will provide a standby team once death is anticipated but this will be mobilised in the US, so relies on a fairly accurate prediction of when death will occur; something of a tall order. The Cryonics Institute do not arrange for standby or transport to their premises.

This means that people in the UK wanting to be cryogenically preserved when they die need to make their own arrangements for initial cool-down on death if they are to avoid significant deterioration of the body tissues.

In addition, there is the problem of the time taken to transport a body to the US. This will normally take a minimum of two or three days from time of death, which risks significant deterioration even if the body is transported in water ice to keep it just above freezing. A much better solution is to cool down the body and transport with dry ice (frozen carbon dioxide), at about  $-70^{\circ}\text{C}$ . The problem with this is that cooling the body below freezing point causes ice crystals to form which results in severe disruption to the tissues. To avoid this, at least for the all-important brain, tissues need to be treated with a special solution, called a cryo-protectant, which inhibits the formation of ice crystals.

It is because of these problems, and the lack of any organisation to provide a standby, treatment and cooling service, that Cryonics-UK was set up.

## **What services do Cryonics-UK provide?**

Our members meet for training sessions that are held four times a year, where they can discuss issues and seek advice related to cryo-preservation. Members are encouraged to attend at least two sessions a year, preferably more initially so that, when one of our members dies, we have sufficient trained members to form a team who will carry out:

- Ø **STANDBY** at the member's home, hospital or nursing home, including liaison with relatives and medical staff to ensure they understand our aims and the reasons for our procedures, including the need to act quickly on death;
- Ø **COOL-DOWN** immediately on pronouncement of death, by transferring the member to an ice bath, including administration of chest compressions to keep blood flowing and lungs oxygenated, and the administration of medications to prevent blood clots and damage due to lack of oxygen;



**Members undergoing training**

- Ø PERFUSION OF THE HEAD, which consists of replacing the blood with a cooled cryo-protectant solution that permeates tissue and inhibits damage due to ice crystal formation;
- Ø INITIAL FREEZING to about -70°C using dry ice, and preparation for transport to Alcor or the Cryonics Institute using our specially insulated container; then finally
- Ø HANDOVER TO A FUNERAL DIRECTOR who is aware of our aims and needs and who will arrange transport to the cryonics provider.



Special transport box for shipment to the US on dry ice

## What are the costs?

The main costs of being cryogenically preserved are: the cryonics storage provider's fee; the funeral director's fee, including transport costs; and the costs of initial preparation of the body immediately after death. Individuals will need to assess their own needs but Cryonics-UK can give guidance of the various options. Broadly, current costs total about: £170,000 for Alcor whole body storage; £80,000 for Alcor neuro (head only) storage; and £50,000 for the Cryonics Institute (whole body). Funding is normally by means of a life assurance, and the sum assured should normally be in excess of these amounts, depending on an individual's age and health, to allow for inflation and variations in the pound-dollar exchange rate.

In addition to these, CRYONICS-UK'S MEMBERSHIP FEES are:

- one adult attending training\* £15 per month; or
- a family with at least one adult attending training\* £25 per month.

*\*attendance at two or more of four training sessions per year, with a commitment to attend call-outs whenever reasonably possible.*

For members who are unable or unwilling to attend training, an additional £5 per month is charged on the above fees. However, members are encouraged to attend training and be available for standby wherever possible – if nobody volunteers for training and standby commitments, there can be no standby, whatever the fees!

## The sooner the cooler, the better...

Your standby arrangements are a critical part of your cryonics plan. Without rapid intervention, brain biochemistry quickly deteriorates after death. With rapid and timely intervention from Cryonics-UK you can minimise this deterioration and increase your chances of being brought back to life in the future.

Further information is given in the articles, “*Ten things to do before you die*”, and “*End of life care and verification of death*”, which are posted on the Cryonics-UK web site.

Anyone who is considering the cryonics option but is not yet signed up with a cryonics provider is welcome to attend Cryonics-UK meetings without joining the group. For more information go to [www.cryonics-uk.com](http://www.cryonics-uk.com) or email any of the following members: [tim.gibson@cryonics-uk.org](mailto:tim.gibson@cryonics-uk.org); [ghipkiss@hotmail.com](mailto:ghipkiss@hotmail.com); or [vicstevens@hotmail.co.uk](mailto:vicstevens@hotmail.co.uk)

Emergency Phone numbers 07905371495/07752251564/01287669201

Note: if you leave joining Cryonics-UK until the last minute you may be subject to a late lifetime membership payment of several thousand pounds, to help pay for our expensive equipment. At worst, we may not be able to act at very short notice, since we are a self-help group and members have other commitments.