

1 Can You Really Be Cryogenically Frozen? Why The Sci-Fi Fantasy May Be More Science Than 2 Fiction

3 It's a nice thought, **avoiding** death by getting frozen **indefinitely**. You can wait out your time inside a
4 chamber cooled to a chilly 321 **degrees** below zero, until humans find a way to **cure** whatever **illness** or
5 **treat** whatever **condition** you have, even old age — at which point you can **emerge** with your outdated
6 haircut and weird clothes. Sounds appealing, right? You're basically a time traveler. A quick warning:
7 Being cryogenically frozen doesn't mean just being dropped into a vat of liquid nitrogen. **Cells** are mostly
8 **made up of** water, and water expands when it freezes. (If you've ever taken chicken out of the freezer to
9 **thaw**, you know what I'm talking about.) Basically, your cells would shatter and die.

10 Getting frozen forever (or until science can **revive** your frozen self) — a process **formally** known as
11 “cryonics” — **requires substances** called cryoprotectants. Think of them like the antifreeze you put in your
12 car. So far, our greatest **leap** forward in preserving our own species and bringing it back to life is on the
13 **tissue** level, and small ones at that. These **include** ovaries, embryos, plant seeds, blood, and semen. Larger
14 tissues, such as hearts and livers, let alone **entire** bodies, require loads more cryoprotectants and, thus, are
15 harder to **preserve**. Still, the effects can be mind-boggling. In May 2006, the second of two twin girls was
16 born 16 years after her sister. After a long battle with pregnancy complications, including 10 miscarriages,
17 the girls' parents decided to delay fertilizing the second of the twin embryos. When the **initial** sibling
18 embryo fertilized, and **eventually** grew up into a healthy teenager, the family decided in 2005 to repeat the
19 process.

20 But what about a person seeking immortality through cryogenics? Enter Robert Ettinger. **Besides** being the
21 106th person to be cryogenically frozen at the Cryonics Institute in Clinton Township, Mich., he also
22 happens to be the Institute's **founder**. Ettinger first became fascinated by cryonics after reading about it in a
23 science-fiction novel as a boy, and it was a fantasy he **refused** to **give up** as an adult. Inside the building,
24 over 100 people **float** limply inside large white drums, including Ettinger's mother, his wife, and his second
25 wife. And when nature takes its course on Ettinger's son, David, he too will take the hopeful plunge. "He
26 believed like a lot of people do that in the future we're going to have **significantly** better medical
27 technology," Ettinger told ABC News of his father. "The question is how do you get them from here to
28 there? Cryonics is kind of like an ambulance to the future."

29 That ambulance is **certainly** complex. Pay \$200,000 for a full-body preservation, or \$30,000 for just your
30 head, Ted Williams-style, and you're entitled to a full verification process. Scientists sap your body of its
31 natural water **contents** and **replace** it with a sort of “solid liquid” that keeps your cells in suspended
32 animation and ice crystal-free. Critics uninterested in living forever, or at least in spending so much money
33 to do so, happily point to the zero frozen patients that science has managed to revive. Keeping a person at
34 the **appropriate** temperature is expensive, and many people quit funding the endeavor before any scientific
35 **advance** quits it for them. This leads many people to question the true intention of companies like Cryonics
36 Institute. But then again, if you have \$200K to blow, why not live forever?

37 Adapted from [Medical Daily](#)