



Cryonics Signup Guide

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Cryonics signup guide #1: Overview

This is the introduction to a sequence on signing up for cryonics. In the coming posts I will lay out what you need to do, concretely and in detail. **This sequence is intended for people who already think signing up for cryonics is a good idea** but are putting it off because they're not sure what they actually need to do next. I am *not* going to address the question of how likely cryonics is to work – that's been [covered extensively elsewhere](#).

If you have no idea what cryonics is, or if you want a thorough refresher, I recommend WaitButWhy's [Why Cryonics Makes Sense](#).

Biases

This sequence is US-focused, since I went through the process in the US. It's also somewhat Alcor-biased, since I chose Alcor quite early on in the process. However, I've collaborated with both non-US cryonicists and people signed up with the Cryonics Institute, so I'm confident there will be useful information no matter where you are or which institution you choose to keep you in a vat of liquid nitrogen.

Epistemic status

I approached all questions in good faith and have documented my reasoning to the best of my ability, but I don't have a high level of confidence in my conclusions. Commenter Josh Jacobson is signed up with the Cryonics Institute and [had a very different experience](#) than the one outlined in this sequence, and I don't think I have any special knowledge or abilities that he doesn't. My recollections of the research that led to these posts has also faded with time.

Caveats

This sequence was researched and written in late 2020, and just two years later, it seems that the landscape has already changed significantly. For example, Alcor has changed their membership options, their fee structure, and their payment options, and they've also introduced an online signup flow that I have no experience with. As such, please be aware that some of the logistical advice in this sequence may be outdated. I have tried to update the sequence where possible, but I'm not going to go through and overhaul it.

Acknowledgements

Thanks to Connor Flexman, Daniel Filan, Gordon Worley, Mati Roy, Seraphina Nix, and nameless others for letting me ask them endless questions. Thanks also to Eli Tyre and [Oge Nnadi](#) for their previous writeups on this topic, from which I borrowed liberally.

Summary of the process

The first thing most people probably want to know is: What do I do now? It turns out to be really hard to figure this out, and I think unnecessarily so – the information is out

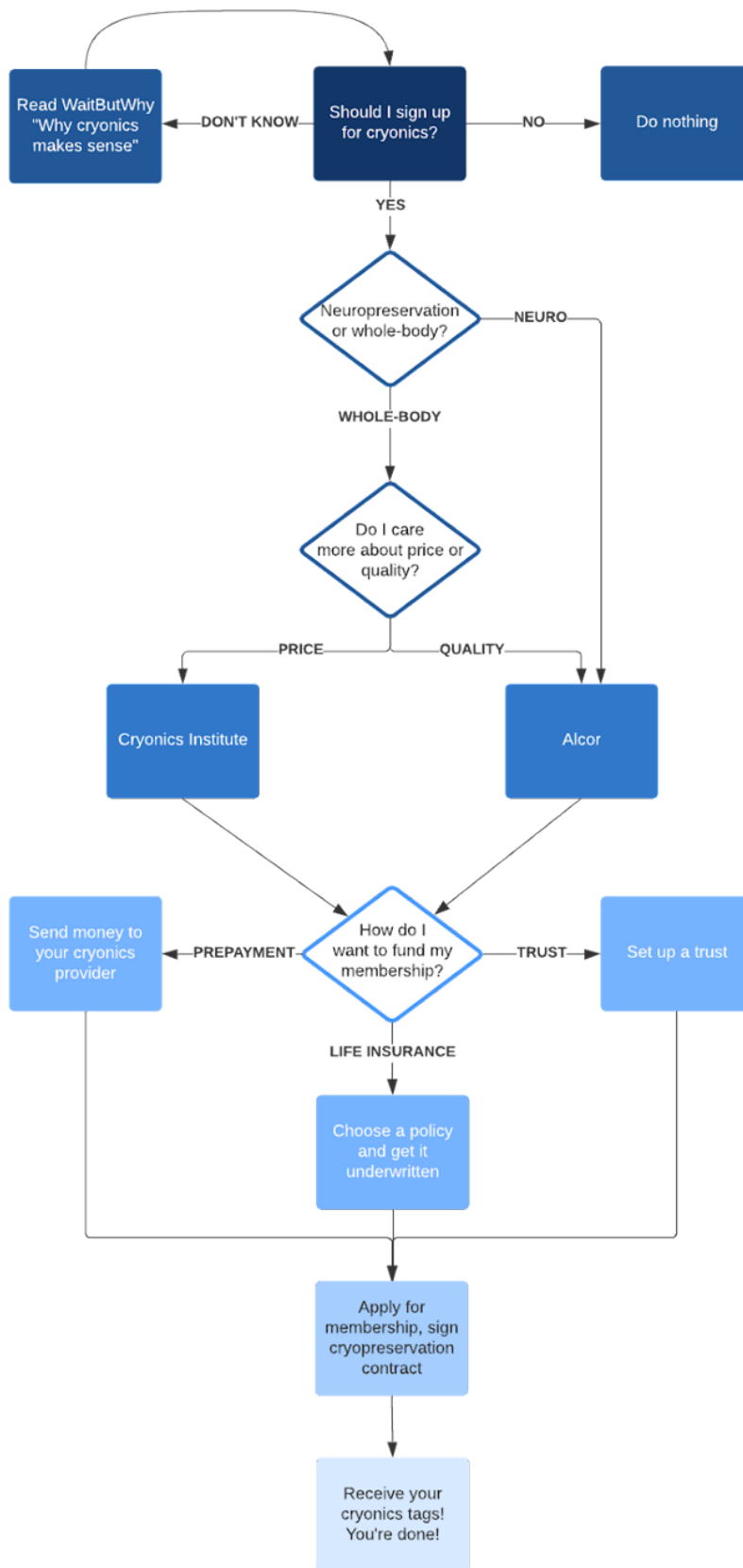
there, but it's not all written down clearly in one place. This sequence is my attempt to rectify that.

Basic process overview

Here is a basic overview of the cryonics signup process from start to finish:

1. Preliminary decisions
 1. Neurocryopreservation vs whole-body cryopreservation
 2. Cryonics Institute vs Alcor
2. Contact an agent to get life insurance
3. Fill out and submit cryonics membership application
4. Sign cryopreservation contract
5. Optional additional paperwork
6. Keep your policy and membership up-to-date forever
7. Be cryopreserved upon your legal death

For those who want to get oriented visually, here's a flowchart covering the basics:



Sequence outline

And here is the outline of this sequence:

1. Introduction (*you are here!*)
2. [Neurocryopreservation vs whole-body cryopreservation](#)
3. [Cryonics Institute vs Alcor](#)
4. [Intro to life insurance for cryonics](#)
 1. [Types of life insurance](#)
 2. [Cryonics-friendly life insurance carriers](#)
 3. [Cryonics-friendly life insurance agents](#)
 4. [The insurance underwriting process](#)
5. [Making it official](#)
6. [Optional additional steps](#)
7. Actually putting someone in cryostasis (possibly forthcoming late 2022)
8. [Appendices](#)

You may notice similarities to the process overview above, with the main difference being an outsize focus on paperwork, and particularly life insurance. This is because life insurance is a cesspool of bureaucratic bloat, and I wanted to lay things out really clearly so that you can navigate it without crying as much as I did. Once you've secured your funding method (whether that's life insurance or something else), the rest of the process is very straightforward!

I think the preliminary decisions – on whole-body vs brain and which provider to use – merit a fair amount of consideration as well. I've already made my decisions there, but you may have different cruxes than I do; the questions raised can get pretty philosophical.

What I chose

If you just want to offload all of the complex decision-making to me (the person who spent several months writing this sequence but has no other relevant qualifications), I chose Alcor neuropreservation, which I funded by a \$200,000 indexed universal life insurance policy from Kansas City Life, with help from the insurance agent David Donato. I made these choices as a fairly well-off 25-year-old female US citizen with no major health problems and no history of drug use. If you are in a substantially different situation but still want to defer to my judgment, send me a DM and I can help you figure out what's right for you.

Should I sign up?

Even though this sequence assumes you think cryonics is a good idea in the abstract, you might be wondering if you, personally, should actually sign up for it, and if so when. Below I'll discuss a couple factors that might help you make that decision.

Costs

Monetary cost

Cryonics is not just for rich people. It does cost money, but it's really not exorbitant, especially if you're young and healthy. There's a wide range of possible costs (corresponding to different choices of cryonics provider or life insurance policy type) that bottom out around \$25 a month. I personally (25-year-old female, who did not make decisions primarily based on price) pay about \$240/month.

For most people, I think this cost is probably worth a small (but not infinitesimal) chance at immortality. Sure, if it's a choice between paying life insurance premiums and having enough to eat, feed yourself first. But if you're at all financially secure, and you think cryonics is a good idea but just haven't gotten around to signing up, I don't think you should view the cost as a major deterrent.

Time cost

Signing up for cryonics takes a fair amount of time, even if you come in understanding exactly what to do, and also offload the paperwork to an insurance agent. So if you're busy with something very urgent – like, if you've been spending all your mental energy this year advising national governments on their pandemic response measures – then now is indeed probably not the best time to sign up. But if it's been like five years and you *always* feel too busy to get around to it, I recommend just biting the bullet and doing it now.

If you're not price-sensitive, you could pay someone to do nearly all of the work for you, but you'd still have to hire that person, provide them with your personal information for filling out forms, look over their decisions, sign papers, and potentially submit to a medical exam. My guess is it'd be hard to get it below ~10 hours total.

If you're not willing or able to pay someone to go through the signup process for you, expect more like ~40 hours. That's a significant chunk of time, but not an unmanageable one.

Attention cost

The signup process just takes a while, even if you do everything right ([Oge reports](#) 11 weeks between seeking out a life insurance policy and receiving his medallions), and so there's a sustained back-of-the-mind attention cost until it's over. Being signed up for cryonics also requires a bit of ongoing maintenance (something I'll cover in a later post), but not much more than, say, taking out a rental insurance policy does.

Now vs later

I know someone who signed up with Alcor in their twenties, and then the next year was diagnosed with potentially fatal cancer. If they had waited any longer, they would have been uninsurable, or in the best case, their life insurance premiums would have been crazy, unaffordably high. As it turned out, they remain insured, grandfathered in at their previous price. Sure this is just an anecdote, but it really drives home for me that, while you may be at an age when it's statistically highly *unlikely* that you'll die, it's never *impossible*.

All that's to say: If you think it's a good idea, do it now; don't put it off. If you're uncertain whether it's a good idea, find the root of your uncertainty and make a real decision, rather than just indefinitely [driving at half-speed](#).

But I'm not in the US!

Not a problem! You can still sign up with Alcor or CI, and fund your membership using life insurance, so nearly everything in this sequence will still apply to you.

If you're looking into the signup process and are not in the US (or need to work with anyone outside of the US), I strongly recommend finding cryonicists in the relevant country; they'll be able to help you with bureaucratic specifics more than I can. Here are some links I found (disclaimer that I'm not endorsing any of these and they might not even still exist):

- [Australasia](#)
- [Belgium](#)
- [Finland](#)
- Germany: [Cryonics Germany](#), [German Society for Applied Biostasis](#)
- [Greece](#)
- [Italy](#)
- [Netherlands](#)
- Portugal: [Alcor Portugal](#), [Cryonics Portugal](#)
- [Québec](#)
- [Southern hemisphere](#)
- [Switzerland](#)
- [UK](#)

Likely-outdated email contact info for additional groups available [here](#).

What's the lowest-effort thing I can do right now?

If you don't expect yourself to go through the full process right away for whatever reason, but you want to increase your chances of cryopreservation in the event of your death, you should **sign a [Declaration of Intent to Be Cryopreserved](#)** (form [here](#)).

This constitutes informed consent, making it *much* more likely that it will be legally possible to preserve you in case of an emergency. I expect this to take less than 30 minutes in total.

(Note: I previously recommended that people also become an [Alcor Associate Member](#), but as of September 2022 Alcor is no longer accepting new associate members.)

That's it for now! Stay tuned for many more posts that are very technical and much longer than this, and please comment if you have any questions!

#2: Neurocryopreservation vs whole-body preservation

This is post 2 of 10 in my [sequence](#) on how to sign up for cryonics.

Background

There are currently two options for human cryopreservation: preserving the whole body, or preserving only the brain (and the head that holds it). Note that while cryonics providers Alcor and KrioRus offer both options, the Cryonics Institute only offers whole-body preservation.

[This 1995 essay](#) by a former Alcor president does a good job of laying out the considerations that go into this decision. I'll go into many of those as well as some additional considerations in this post. I'm primarily looking at:

1. The practical considerations of preserving a body vs just a brain, including complexity, risk, cost, and preservation quality.
2. The biological and philosophical implications for one's personhood if the body is discarded.

Note that many people argue that it will be easier for whole-body patients to resume their lives and be reintroduced into society – perhaps so much easier that they'll be woken up hundreds of years before neuropatients. I am not going to explore those arguments here because I think it's unlikely that human bodies will be necessary/useful at the time of waking. If you're interested in a discussion of that topic, see Mati Roy's "[How much harder is it to revive a neuro-only cryonics patient?](#)"

Arguments for neuropreservation

From [Alcor's FAQ](#): "Brains are compact, inexpensive to store, easy to move, and are a single organ for which cryopreservation protocols can be completely optimized." That is, if you focus on preserving just the brain, you can do a better job with the initial cryopreservation, and maintain preservation less expensively, and with less risk, for the long years until revival.

Higher-quality preservation

There are reasonable arguments that neurosuspension might result in better preservation than whole-body, and this is a crux for me. However, note that these arguments rest on facts that *only happen to be true today*. If and when cryonics technology progresses to a point where a person can be preserved indefinitely with no damage whatsoever (some people call this 'true suspended animation'), then this consideration will entirely disappear.

There are many advantages when the perfusion team can exclusively focus on the head, because cryopreservation protocols can be completely optimized for survival of

the brain^[1]. Some specific advantages include:

- Shorter perfusion times (sources: [1](#), [2](#))
- Faster cooling to temperatures where biological and chemical activity are halted ([1](#))
- Better venous return of the cryoprotectant ([2](#))
- Absence of problems due to abdominal edema
- Potential access to new, more advanced preservation technologies before whole body patients ([3](#))

However, note that you can theoretically get the best of both worlds (emphasis mine):

A rejoinder to this argument is that **one does not need to choose neuropreservation to receive these advantages**. One could preferentially cryopreserve the isolated head and after this procedure cryopreserve the rest of the body. In fact, as of this writing, the default procedure at the Cryonics Institute is to perform cryoprotective perfusion with a vitrification agent for the upper body and give the rest of the body a straight freeze. At Alcor it is possible to execute a contract that provides for separate cryopreservation of the head and the body. So it is not accurate to say that one needs to exclude the cryopreservation of the body to get a superior cryopreservation. ([source](#))

With Alcor, it's also possible to get funding for whole-body, but leave a note on your file saying that Alcor can choose the best option based on the circumstances of your demise.

Lower cost relative to whole-body preservation

Assuming you are already set on Alcor (or KrioRus), neuropreservation is substantially cheaper than whole-body preservation – half the price or less. This is primarily (though not solely) because of differing storage costs. [Via Alcor](#):

All of the patients are stored in liquid nitrogen at -320 F [-196 C]. No matter how well insulated, liquid nitrogen is constantly evaporating and returning to the air. We have to add more nitrogen to the dewars each week. Alcor has to pay a local supplier for this liquid. One of our steel Bigfoot dewars boils off about 12-15 liters of nitrogen per day, whether it contains one whole body patient or the maximum of four. Each neurosuspension dewar (inside a concrete vault) holds nine patients and loses nitrogen at only half the rate of the whole-body units. This means the nitrogen cost per neuropatient is only about one-ninth of the cost per whole-body patient.^[2]

There are many other factors in the storage costs that are more evenly divided between neuro and whole-body patients, so the total difference is not 1/9; but it is still large. To ensure enough principal in the Patient Care Fund so that the earnings can cover expenses, we invest \$70,000 (at least) of the suspension funding for whole body patients. We only have to invest about \$17,000 to achieve the same result for neuropatients.

Neuropreservation may also be less subject to cost increases than whole-body. This is an impression I've gotten from multiple sources but haven't seen a very explicit model

for. One suggestion is that whole-body has more room for cost increases due to technological innovation, because body perfusion and preservation is less advanced and less explored than brain preservation. I've also seen claims that Alcor whole-body preservation is currently underpriced.

Emergency evacuation

Again, via Alcor:

Neuropatients are also easier to transport in an emergency. The Bigfoot units are about nine feet tall, weigh almost 2 1/2 tons, and take several people to move. However, we can quickly move the neuropatients to small, individual dewars that can be placed in the back of a van or pickup truck and handled easily by two people.

In a major emergency, Alcor [would convert](#) whole body patients to neuropatients, and evacuate them in the same way. However, this would take extra time, decreasing your odds of survival.

While emergency transportation has rarely come up so far in cryonics history, it's not a stretch to imagine that, over timescales of a hundred years or more, a natural disaster might threaten the facility where you're being stored.

Arguments for whole-body preservation

See [The Case for Whole-Body](#) if you want someone to do their best to convince you to sign up for whole-body; I'm here to explain, not persuade.

Lower cost in absolute terms

If you are price-sensitive above all else, you're likely to choose the Cryonics Institute for your cryopreservation (more on this decision in the next post), since it charges \$28,000 for whole-body suspension^[3], compared to Alcor's \$80,000 neurosuspension or \$200,000 whole-body suspension. Since the Cryonics Institute only offers whole-body preservation, making your decision based primarily on price de facto means choosing whole-body.

Compensating for damage to the preserved brain

From [The Case for Whole-Body](#):

If we... allow for some degree of ischemia or brain damage during cryopreservation... the rest of the body could be used to infer information about the non-damaged state of the brain, an option not available to neuropatients.

Recently, research has been conducted to understand the “microbiome” and the alleged interaction between gut bacteria and the brain. One does not need to believe that the microbiome is part of the (peripheral) nervous system to recognize that its preservation (and gut bacteria in particular) may provide clues about the brain, (past) mental states, and could be useful to resolve ambiguous brain repair challenges.

The essay doesn't specify how any of this might work, but then again, we by necessity never specify how revival might work beyond "advanced nanomedicine." The claim seems *a priori* plausible to me.

Potential cognition outside of the brain

From [The Neuropreservation Option](#):

Certainly a whole body patient takes more total information along into the future, although it is still hard to say how significant the added information is. For some people, the pattern of nerve growth development in the body may be very important to their identity — for a dancer or musician, for instance. On the other hand, enough of that information may be encoded in brain development that the same result can be achieved either way. We don't know yet; so we can't say for sure if you are risking anything by leaving your body behind.

This feels like a crux for me, so I want to drill down into it – it seems to me that the bulk of the considerations point in favor of neuropreservation (given current technology), but if it's true that by choosing neuro I'd be leaving important parts of myself behind, that would tip the scales in favor of whole-body for me.

While there's definitely uncertainty here that hasn't been resolved by contemporary science, we can at least bring some evidence to bear. Fortuitously, I found out that my friend Eli had already done a little bit of research and thinking in this area, and he agreed to let me use his work. The next three sections were almost entirely written and researched by him, with only some minor edits by me.

Does important cognition happen outside of the brain?

Note from Eli: I did spend a couple of hours trying to follow up on evidence related to this question, but I definitely definitely don't feel like I solidly “figured it out”. The following is more like a survey of the evidence that I happened to find. I do think there is space for a person to do a more dedicated research project here (on the order of 30 or 40 hours), and get more clarity.

Background

Proponents of whole-body preservation suggest that important personality-relevant information is stored in the rest of the body, not just the brain, and suggest that it might be shortsighted to not preserve that information.

From my layman's understanding, this is at least plausible: the body is composed of multiple overlapping systems, such as the endocrine system, the immune system, the peripheral nervous system, and the enteric nervous system, each of which has some function analogous to memory, and which interact with each other in complex cascades. (Not to mention almost all the cells, in all the tissues in your body, which adaptively adjust the mix of receptors on their membranes, depending on the chemical soup that those cells are exposed to.)

Therefore it wouldn't be that surprising to me (again, as a layman) if, when you isolate the brain from all of those systems, you are leaving behind an important fraction of a patient's personhood.

Which option is preferable depends on a number of factors, but surely one major crux is "How much personality-relevant information is stored in organs or organ systems other than the brain?" This is a tricky question to answer for a number of reasons, both scientific and philosophical. I want to investigate the *easiest* line of attack I can think of: "Do paraplegics experience personality changes as a result of their spinal trauma?"

This seems like the easiest line of attack, because the spine is an organ outside of the brain, that we know has the capacity for learning, and which has a pretty well-defined channel of interaction with the brain.

If we find that paraplegics do suffer (permanent) personality changes, that would be pretty significant evidence that personality-relevant information is contained in the rest of the body, even if it is only in the spine.

If we find no evidence of personality change in paraplegics, that would be *some* evidence in favor of most or all of the important personality-relevant info being in the brain, but it would hardly be conclusive, since there are a bunch of other systems that could constitute an important, idiosyncratic part of "personhood."

Nevertheless, this seems like the best place to start. So, I did a lit review to see what I could find on the topic.

Evidence from spinal trauma patients

I struggled to find evidence relevant to this question.

The first problem is that while there are [a number of papers](#) about personality disorders in spinal cord injury (SCI) patients, they seem to be due to selection effects – for instance, aggressive, impulsive risk-takers are far more likely to be involved in activities that might result in a SCI. I have yet to find any studies that do a before and after analysis on a person who suffered from a spinal cord injury. [One paper](#) got close to that by comparing the personality assessment of veterans with SCI, to the personality assessment of their identical twins. They found "no evidence that SCI is associated with long-term personality change." But also, the sample size was only 11 pairs of twins.

The second problem is that paraplegics' lives change radically following their injury. To get proper evidence, we would need to distinguish between personality changes that are the result of their change in circumstances, vs personality change that is a direct result of physical trauma.

Biological mechanisms of personality change

Since the evidence from SCI patients was so scarce, I decided to switch to looking into our models of how personality change via brain damage happens. Here is some of what I found.

“Personality changes” primarily refer to changes in the emotional responses to stimulus. Most often this seems to take the form of disimprovement in emotional regulation: increased irritability, anger, or frustration, and decreased impulse control. For instance, take the famous case of Phineas Gage, who had a railroad spike driven through his frontal lobe in an accident:

Gage’s employers... “considered the change in his mind so marked that they could not give him his place again.... He is fitful, irreverent,... impatient of restraint or advice when it conflicts with his desires.... His mind was radically changed, so decidedly that his friends and acquaintances said he was ‘no longer Gage.’”
([source](#))

However, sometimes affective reactions shift in less predictable ways. For instance, brain injury victim [Oliver Mitchard](#) reports:

Before my accident, I wasn’t fond of animals or monkeys - no creatures at all. Since my accident I’ve got a massive passion for monkeys, which bizarrely, has literally come out of nowhere.

It seems like the best theory to describe this is that when the connections between the limbic system and the cerebral cortex are damaged, and forced to regrow, this can cause changes to the patterns that allow us to evaluate our emotional responses and regulate our behavior. (*Note from mingyuan: while the [sources](#) I could find on this are not exactly the height of scientific legitimacy, it still seems plausible to me.*)

That is, personality changes are attributed to the brain alone, with no involvement from the central or enteric nervous systems. Any personality changes due to spinal or abdominal trauma would need to posit a totally new biological mechanism.

Eli's part is over now, back to me.

Other evidence

Former Alcor president Mike Darwin [commented](#) on this issue back in 2012, focusing on several examples not covered by Eli:

First, Darwin points out that there are major personality changes and other cognitive changes entailed in aging, and we generally don't think of these as compromising a person's *self*. (Think aging as in age 25 to age 35, rather than aging as in dementia.) I think this is pretty uncontroversial – I certainly have different emotional reactions to stimuli than I would have 10 years ago, but nobody questions my continuity of consciousness.

Second, he claims that he knows plenty of people who have had their intestines and stomach (where many extra neurons are located) removed, but didn't undergo any

perceptible cognitive changes.

I actually found a [ton](#) of anecdotal evidence that stomach surgery can lead to significant personality change. But again, it's hard to separate effects of the surgery itself from everything that surrounds it. Losing 100+ pounds will have massive effects on your social and mental life whether it involves surgery or not, as will being diagnosed with gastric cancer (weight loss and cancer are the two reasons people get stomach surgery). You also have to make permanent, significant changes to your eating behaviors after stomach surgery, which can affect all sorts of things (e.g. blood sugar and hormone levels, habits and coping mechanisms, general enjoyment of life).

Finally, Darwin points out that in successful organ transplants, donor immune and stem cells colonize the patient, but the patients don't undergo perceptible cognitive changes – despite the fact that the makeup of their 'chemical soup' (to use Eli's phrase) has changed significantly.

A quick search on my part turned up a [couple papers](#) and plenty of [anecdotes](#) suggesting that a small subset of organ recipients do report personality changes that they attribute to their transplant. While that seems plausible to me *a priori*, I'm distinctly unimpressed with the research – there's no proposed mechanism and it all feels more spiritual than scientific. (Search term: 'cellular memory theory'.)

Oh no, philosophy

It turns out that the fact that personal identity is poorly defined makes it really hard to say what information is identity-relevant, and therefore it's hard to decide whether your brain in isolation would still be *you*. I think we're running into something like a [Ship of Theseus](#) problem here – how many pieces of what makes me *me* can be taken away before I'm no longer me?

Another way to look at it is that personalities are already dynamic, and so it becomes a matter of personal judgment what kinds of personality changes are within acceptable limits, and which are not. Some dimensions on which personality changes appear to vary are:

- **Magnitude** – It's easier to accept small changes than large ones. The changes in Phineas Gage were very large, but if someone ended up only 5% more irritable or impulsive after an accident, you might not even notice.
- **Abruptness** – It's easier to accept gradual changes than abrupt ones. You undergo gradual changes in personality as you age. You can get abrupt changes if you experience a traumatic brain injury.
- **Externalness** – It's easier to accept internal changes than external ones. An organ transplant or a rod through the head are clearly external. Meditating is clearly internal. Taking antidepressants or hanging out with new friends are borderline.
- **Type** – It's easier to accept positive or neutral changes than negative ones. Contrast Phineas Gage's aggression and impulsiveness to Oliver Mitchard's newfound passion for monkeys.

[Mati](#) suggests thinking in terms of "the things you intrinsically want to preserve about yourself" – which again, is a matter of personal judgment. The only thing I can really pin down is that I want continuity of consciousness – I want to keep my memories and my sense of being myself. But surely I wouldn't be satisfied with a person with all of

my memories, but who reacted differently from me to every conceivable stimulus. In short, this is all very confusing, oh no.

Conclusions

Eli's conclusion

This is non academic, but I can say that as I continued looking into this, I found an increasing inclination to cryopreserve my whole body. Importantly, the update was not that there's strong evidence to think that personality-relevant information is stored in the brain, but rather, it was (re-)made salient to me how little we know about how brains and minds work.

Given how little we know, it seems like epistemic arrogance to confidently assert that (and bet on) there being negligible biological personality-relevant info outside of the brain. The precautionary principle argues in favor of not leaning on that fact for "my" survival.

ETA: It seems worth noting that I have opted for neuropreservation instead of full body, at least at this time, in large part due to price difference. The "inclination to cryopreserve my full body" noted above, was not sufficient to sway my choice. What seems ideal to me would be doing *both*: remove the head from the body, and then cryopreserve, and store, them both separately. This would give you the benefit of a faster perfusion of the brain and ease of transport in an emergency, but also keeps the rest of the body around on the off-chance that it contains personality-relevant info.

My conclusion

Every line of inquiry so far has failed to suggest that any important aspects of personality are located anywhere except the brain. Absence of evidence is (weak) evidence of absence – especially given that this is not the first time I've been in a context where I needed to know whether anything other than the brain was important for identity and cognition.

Given that the bulk of the considerations – cost, emergency risk, and most importantly, preservation quality – are in favor of neuropreservation, and I haven't seen any compelling reason to switch to favoring whole-body, **I am choosing neuropreservation** for myself and my family members. It seems to me that, as of this writing, neuro gives the best chance for future revival.

However, I think it's quite likely that cryopreservation technology will advance enough in my lifetime that it will at some point make sense to switch to whole-body. So I recommend signing up for neuropreservation, but with a high enough funding amount that you can easily switch to whole-body in the future without needing to purchase additional life insurance. More on this when I cover life insurance in two weeks.

"The quality of brain preservation in whole body patients may not be as good as for neuropatients. Cryoprotectant absorption of the entire body is measured during whole body cryopreservation. During neuropreservation, cryoprotectant absorption of each brain hemisphere is individually measured and optimized without interference from the rest of the body." ([source](#))

2. [^](#)

This calculation appears to assume that whole-body dewars store an average of two patients rather than the maximum of four. I'm not sure why this is.

3. [^](#)

The \$28,000 figure is somewhat misleading, as I'll discuss in depth next week.

#3: Choosing a cryonics provider

This is post 3 of 10 in my [sequence](#) on how to sign up for cryonics.

There are a fair few companies working in or adjacent to the cryonics space, but so far as I can tell*, the most commonly considered ones are:

- [Alcor](#) near Phoenix
- The [Cryonics Institute](#) (CI) near Detroit (whole-body only)
- [KrioRus](#) in Moscow

I only seriously considered Alcor and CI, which is the case for most people I know, since KrioRus is 6000 miles away from us.

Edit 9/2022: I've heard good things about [Tomorrow Biostasis](#), based in Germany and serving all of Europe. Given that most Europeans probably currently can't / don't want to deal with Moscow, this seems like a good alternative to look into.

Honestly, I chose Alcor long before I started the signup process – basically because my friends had chosen it, and I figured they'd done so for good reason. But in the interest of information-sharing (which is the whole reason I'm writing this sequence, after all), I decided to dig into the Alcor vs CI question. I came out the other side more confident in my choice of Alcor.

Process

The first thing I did was to look back into ancient history, to [this 2012 LessWrong question](#) about Alcor vs CI. While the comments did raise a lot of important considerations and were a helpful starting point, the primary thing I found out was.... that there's a lot of catfighting in the cryonics community. Here's hoping this post attracts more constructive feedback and fewer diatribes.

Notably, I did **not** reach out to either Alcor or CI directly, instead working only from publicly available information. While I'm told that people at both organizations are very helpful and happy to answer questions, I think it's illuminating to see what they share publicly. Also, honestly, I just don't like talking to people and didn't want to devote *that* much time and energy to looking into minutiae, when the broader picture was already pretty clear to me. People who have insider information are welcome to set me straight when I raise questions or reveal gaps in my knowledge.

One more note

While people argue a lot about which organization is better for them at the individual level, I think it's good to acknowledge that all cryonics organizations are part of the same ecosystem that's pushing research forward and aiming at long-term human flourishing. In this capacity, cryonics organizations all complement one another. People seem to get really caught up in the narcissism of small differences and lose sight of the fact that cryonicists, by and large, all share the same values.

Costs to the consumer

CI is usually cited as the cheaper option, but I became increasingly uncertain about this as I looked into it. If you look just at their preservation prices, then you come away thinking that the cost of whole-body preservation via Alcor is more than 7x what it is via CI. But this is

misleading, because Alcor rolls standby and transportation costs into its signup fees, while CI doesn't.

Ultimately CI does come out cheaper overall, but the cost difference may not be as stark as it first appears. Let's get into it.

Alcor

As of this writing, Alcor charges a minimum of \$80,000 for neuropreservation and \$200,000 for whole-body. Here's a breakdown of the full costs:

- **One-time application fee: \$300**
- **Standby fees:** \$180/year (waived if you overfund your life insurance policy by \$20,000, which you [should do anyway](#)) = **\$0/month**
- **Membership dues:** $\$15 \times (\text{age at time of sign up}) / \text{year} = \$22\text{--}\$75/\text{month}$ (median **~\$44/month**)
- **Life insurance premiums (neuro):** \$15–\$300/month (median **~\$100/month**)
- **Life insurance premiums (whole-body):** \$30–\$600/month (median **~\$200/month**)

So, if you are healthy and under ~35, your monthly fees are likely to come out to about **\$150 for neuro** or **\$250 for whole-body**. Note that you get significantly discounted application fees and membership dues if someone else in your immediate family is already signed up for Alcor. If this applies to you, your monthly fees will be \$23 lower!

(You may be wondering why there's such a wide range of life insurance premium costs. I will talk a whole lot more about life insurance in later posts, but in brief, your premiums depend heavily on the type of insurance you decide to buy, and also increase steeply with your age.)

Cryonics Institute

First let's do the same calculation we just did for Alcor. CI's minimum whole-body suspension fee is \$28,000, but if you're an Annual Member rather than a Lifetime Member, it's actually \$35,000. But I don't think it actually matters that much, since as far as I can tell, it's hard to take out a life insurance policy for less than \$50,000. So your life insurance premiums end up being pretty much the same either way.

Annual Membership:

- **One-time initiation fee: \$75**
- **Membership dues:** \$120/year = **\$10/month**
- **Life insurance premiums:** \$8–\$300/month (median **~\$100/month**)

Lifetime Membership:

- **One-time initiation fee:** \$0
- **Membership dues:** \$1250 once, amortized over ~50 years = **~\$2/month**
- **Life insurance premiums:** \$8–\$300/month (median **~\$100/month**)

So your fees come out to about **\$100/month** if you're an Annual Member, or \$110/month if you're a Lifetime Member.

But wait! Unlike for Alcor, it doesn't end there! Behold:

Fees for Standby, Stabilization, Transport, and Cryopreservation provided by Suspended Animation and the Cryonics Institute

Standby provided by Suspended Animation	Insured Plan \$30,000 Life insurance payable to Suspended Animation. Covers up to two deployments plus unlimited standby days, only while a Serious Risk prevails.	Prepaid Flat-Rate Plan \$25,000 Prepaid by refundable cash deposit to Suspended Animation. Covers up to two deployments plus unlimited standby days, only while a Serious Risk prevails.	Prepaid Incremental Plan \$7,500 Prepaid by refundable cash deposit to Suspended Animation. Covers only one deployment for up to 72 hours, when requested by a member experiencing Small or Serious Risk.
Additional Days of Standby provided by Suspended Animation	\$2,500 per day Paid by any method acceptable to Suspended Animation. Under the Insured Plan or Prepaid Flat-Rate Plan, this fee is charged only when the risk has diminished from Serious to Small but the member requests a continuation of standby .		\$2,500 per day Paid by any method acceptable to Suspended Animation. For each additional day after the first 72 hours.
Stabilization and Transport provided by Suspended Animation	\$30,000 completion fee Paid by life insurance or other acceptable arrangement via the Cryonics Institute. Includes anti-ischemic medications, rapid cooling, cardiopulmonary support, perfusion with organ preservation solution, and transport to the Cryonics Institute. A reduced fee may apply if some procedures are not appropriate or possible.		
Cryopreservation provided by the Cryonics Institute	\$28,000 or \$35,000 Paid by life insurance or other acceptable arrangement via the Cryonics Institute. (Option 1 or Option 2 plan). Includes cryoprotective perfusion with vitrification solution, and subsequent maintenance in liquid nitrogen for the indefinite future.		

You can see that if you want standby and transportation, you'll end up needing to pay an extra \$60,000, for a total of about \$90,000 – on par with signing up for Alcor neuro.

When is CI cheaper?

If you already have life insurance through your employer

CI accepts funding via employer-sponsored group life insurance, while Alcor doesn't. If you can get your employer to pay for your life insurance you'll have a much cheaper out-of-pocket cost. (Note that Suspended Animation **does not** accept group insurance, so you'll still have to figure out standby costs.)

If you're 100% set on whole-body

If you're signing up for whole-body preservation regardless of provider, then preservation via Alcor still costs twice as much as preservation via CI, even taking into account the extra standby and transportation fees that CI members pay to Suspended Animation.

If you do not want standby

All of CI's 'hidden costs' are for standby and transportation. If you are making your own arrangements in this domain, then it doesn't make sense to pay Alcor's mandatory standby fees. There are three main reasons you might not want standby:

- **You live in the Detroit area**, so you're likely to already be very close to CI when you die.
- **You're contracting with a local standby team and/or funeral director** – especially likely if you're outside of North America, since Alcor and Suspended Animation are primarily set up to operate in the US and Canada.
- You [think centralized standby doesn't work](#).

Quality of cryopreservation

There are two main factors that determine the quality of your cryopreservation:

1. How quickly preservation happens after your clinical death
2. What preservation methods are used

I'll go into both of these below. For a sense of how things actually go down in real-world, non-idealized situations, you can see CI's cryopreservation case reports [here](#) or Alcor's [here](#).

Standby services

What is standby?

When you're close to death, you (or your loved ones) may call for a team of trained individuals to wait at your bedside, ready to stabilize you and get you ready for cryopreservation and (if needed) transportation, as soon as you're pronounced legally dead.

Why does standby matter?

Standby exists so that you can get cooled down and cryopreserved as quickly as possible. Speed is important because your organs degrade quickly after you stop breathing and your heart stops beating.

You'll hear the word "ischemia" used in this context. Ischemia refers to deficient blood flow to part of the body – in this case the whole body, but we primarily care about the brain – and the resulting oxygen shortage. Organs without oxygen are quickly damaged (see [Wikipedia](#) if you're interested in the mechanism), and importantly, this interferes with the cryopreservation process:

One of the most robust findings in our studies, and scientific papers of others researchers going back to the 1960s, is that cerebral ischemia produces perfusion impairment in the brain in a time- and temperature dependent manner. In cryonics such perfusion impairment translates itself into ice formation. The real difference is not between Alcor and CI but between people who do not receive rapid stabilization and cooling and those who do. ([source](#))

Cryonicists often talk about "ischemic time", which refers (roughly) to the duration of time between your legal death and your cryopreservation. In cryonics, you can incur either warm ischemia (at room temperature) or cold ischemia (cooled down). Cold ischemia is less bad than warm ischemia, because being colder slows down the degradation process, but it's still ischemia. The shorter your ischemic time, the better.

How does standby work?

Standby teams aim to intervene as soon as possible after the pronouncement of legal death, to minimize ischemic time. Once death is pronounced, they stabilize the patient by lowering body temperature and restoring circulation. They also administer medications intended to improve the quality of cryopreservation (e.g. heparin to avert blood clots).

Perfusion can be done near the location of legal death ('field perfusion') but is usually done at the preservation facilities. This means that, for anyone who undergoes clinical death while not located right near their cryonics provider, there are hours and often even days between clinical death and the beginning of perfusion.

See [this case report](#) from Suspended Animation for a complete picture of the standby process.

Hospice care

A friend who recently helped cryopreserve a family member told me "The best quality preservations by far occur in hospice death near the perfusion team." This is because being near the perfusion team and preservation facility allows for the quickest preservation following clinical death, and the least ischemic time.

Alcor strongly encourages members who are terminally ill to relocate to a care facility near Alcor; if you choose to do so, their standby program entitles you to relocation assistance of up to \$10,000.

A cooperative care center is important, because some hospices will refuse to allow the standby team into the room or try to block them from acting. Alcor has a relationship with a hospice in Scottsdale, Arizona. CI does not have a relationship with a hospice. For my friend, this meant he wasn't able to relocate his family member to Michigan in their final days. He did contract with Suspended Animation, but his family member still incurred significant cold ischemia while being flown to Michigan.

Mandatory vs optional standby

As mentioned in the previous section, on costs, CI does not make standby mandatory for its members, while Alcor does. Alcor "attempts to provide bedside standby service to all members in the U.S. and Canada [subject to a 180 day waiting period after signup]" ([source](#)), and paying into its standby program is mandatory for Alcor members.

CI members can get standby and transport services from Suspended Animation by paying a fee, but in practice, only about 30% of CI members choose this option. ^[1]

CI makes a good point that "Spending large sums of money for remote standby services... does not guarantee a successful suspension." However, I think a major hole in their standby philosophy is that, while personalized, decentralized local standby *is* likely better than the 'one-size-fits-all' centralized standby provided by Suspended Animation (at least in terms of average response times), almost no one is going to go to the trouble to set up their own standby solution. So the default for a CI member is to have no standby at all, which seems obviously worse than centralized standby.

Perfusion

Alcor and CI both aim to [vitrify](#) their patients rather than just straight freezing them, a process that significantly reduces damage to the organs. However, the two organizations perfuse their patients with different vitrification solutions, and that's what I'll be looking into here.

Alcor

Alcor pitches itself as performing state-of-the-art cryopreservation. I'll just quote from [their FAQ](#):

The cryoprotectant used by Alcor, M22, was developed for purposes of medical organ banking and transplantation. It was the first solution to ever permit the cryopreservation

and subsequent long-term survival of a vital mammalian organ (kidney). M22 is a “6th generation” vitrification solution, incorporating ice blockers, chilling injury protection, and numerous other insights...

[M22] is able to vitrify at slower cooling rates, and larger volumes, than any other vitrification solution in published scientific literature...

Alcor also uses demanding “closed circuit” perfusion, the same method of circulating fluids through the body used in heart surgery and organ cryopreservation research. This permits cryoprotectant to be introduced more gently, with better temperature control, without requiring cryoprotectant concentration in blood vessels to be far above target tissue concentration.

Cryonics Institute

CI pitches itself as performing affordable cryopreservation. They use a vitrification agent that they developed in-house, called VM-1. While there are no scientific journal publications about VM-1, [this LessWrong comment](#) goes into M22 vs VM-1 a bit (linked page available [here](#)). CI also discusses their perfusion process [here](#) (scroll to the bottom). Most relevant paragraph:

[VM-1 inventor] Dr. Pichugin believes that the combination of his vitrification solution and carrier solution are well optimized for both low viscosity and minimal expense, while providing powerful vitrification capability. He does not believe in the value of high molecular mass agents such as proteins, dextrans, HES, PVP, etc, to support oncotic pressure in brain perfusion in CI's protocol because he believes these agents increase viscosity and are not necessary due to the dehydrating effect of cryoprotectants. In practice the Cryonics Institute has not seen much brain edema or the need for oncotic support in perfusions of brains with CI-VM-1 and [the carrier solution] m-RPS-2.

CI later mentions keeping costs low by using industrial-grade cryoprotectants. Their focus on costs and their description of VM-1 make me inclined to believe Alcor when they say, “VM1 was developed as a solution of simple composition for economical cryonics, not preservation of organs for transplantation.” I haven't seen positive evidence that VM-1 will allow for revival.

A comment from the 2012 thread says that CI “cryoprotects only the head, allowing the rest of the body to be straight frozen with massive damage”, but I think this is no longer true. While head-only perfusion is still the default, CI members can now choose to have their body perfused as well – although CI [recommends against it](#) because “body perfusion with glycerol after having perfused the brain results in longer brain exposure to cryoprotectant toxicity and ischemic damage.”

Organizational longevity

Organizational failure is the number two reason I expect cryonics not to work, with number one being existential catastrophe that wipes out all of humanity. I'm far from confident that any cryonics company is prepared to weather a couple hundred years, black swan events and all.

The actions Alcor has taken – choosing a low-risk location, planning their finances for the long term, and structuring their organization so that it's not in imminent danger of falling apart – do show that they've seriously considered the problem of organizational longevity, but I'm not convinced that they're prepared for the future to be... weird.

Relevant 2012 [comment](#) from LessWrong user [shminux](#):

To quote Peter Lynch, "I want to buy a company any fool can run, because eventually one will". Making a company fool-proof is essential when the main purpose of the company is to survive several hundred years (maybe even thousands), an exceedingly rare occurrence. None of the current cryo shops seem anywhere close to having the necessary structure in place.

Alcor

For an overview of measures Alcor has taken in pursuit of institutional longevity, see pages 4-8 [here](#).

Company structure

Alcor has a [self-perpetuating board](#) (which means that the board votes on who will be on the board) that's made up solely of Alcor members, which makes it pretty hard for any hostile outsiders to take over the organization.

Financially, Alcor has made sure not to put all of its eggs in one basket. It has its main operating funds, some reserve funds, an endowment, and the [Alcor Care Trust](#) (formerly the Patient Care Trust), and there are set rules for when and how each of those funds is touched. For example, the Alcor Care Trust has separate assets and a separate board of directors, and is supported by a 501(c)(3) distinct from Alcor. This makes it so that Alcor can't dip into patient care funds in order to cover other costs, such as legal fees.

These precautions seem pretty good overall, but it doesn't necessarily seem like Alcor is prepared for extreme events like the collapse of the US dollar, or widespread and enduring violent unrest in the United States.

Long-term financial planning

We'll go into finances more in the next section, but it's worth taking a look at how Alcor responds to point-blank questions (in its own FAQ). In answer to the question "How will Alcor sustain itself for the duration of my cryopreservation?"

Alcor's long-term planning is conservative. Minimum funding requirements budget \$115,000 to be set aside to fund long-term care of whole body patients, and \$25,000 for neuropatients. Any excess funding also goes toward long-term care unless the member specifies otherwise. As a result, Alcor has more funding set aside per volume of patients under care than any other organization by a wide margin.

Alcor also segregates long-term care funds in the [Patient Care Trust](#) (PCT), which has a separate board of directors that oversees investments and ensures PCT funds are only used for long-term patient care... The Trust holds the mortgage of the building housing Alcor patients as well as majority interest in the ownership of the building. The rest of the Trust investments are held at the investment firm of Morgan Stanley...

...Using a conservative estimate, the funds should generate more than enough money to cover patient maintenance indefinitely.

Location

Alcor [intentionally chose](#) a location with very low natural disaster risk, a low crime rate, good weather (to avoid transportation delays), and access to a major airport (the facilities are a 20-30 minute drive from Phoenix's international airport). In addition, Alcor's facilities have good security, and police response times in the area are quick.

Cryonics Institute

CI is pretty open about the fact that they have no plans whatsoever. From their FAQ:

Can you guarantee success?

Sadly, we can't. No one can guarantee success, because no one can guarantee the future. No one can predict scientific progress with certainty. We believe that a very strong case can be made for the probable success of cryonics. But that doesn't mean that social disruptions aren't possible. Nuclear war, economic collapse, political strife and terrorism, are all possible, and they could end the lives of cryopreserved patients just as easily as they can end the lives of any of us.

and

Can you guarantee the safety of patients?

The oldest patient currently still being held in cryopreservation is Dr. James Bedford, who was cryopreserved in 1967. He has survived the Cold War, the Vietnam War, the Gulf War, Watergate, the collapse of the Soviet Union and the 9/11 attacks — which is more than many of his contemporaries can say. The world is (relatively) stable at the moment, global world war doesn't seem likely, and the economy is relatively stable.

We can't guarantee the future. But we can and do guarantee this: that at CI we will give our very best efforts to see our member patients are restored to life and good health. The life of every director and officer and member of CI depends on those same efforts.

It's also worth noting that I didn't find anything about long-term financial planning on their website, and that their location is not optimized along the lines of Alcor's — while CI is very near a major airport (again, a 20-30 minute drive), it's also just outside the [infamously high-crime](#) Detroit, and Michigan is subject to [a fair number](#) of natural disasters. (Michigan might not get many earthquakes, but it does regularly get thunderstorms and blizzards, which frequently cause delays both at airports and on roads.)

No but actually??

[shminux](#) made an excellent point back in 2012 that I have yet to see addressed anywhere. I think [it's](#) worth quoting in full:

[M]y biggest concern is the continuous operation of a cryoshop over the potential centuries or even millennia until the revival is attempted, as nearly no entities have ever survived that long. I have been unsuccessful in my search for an Alcor executive explicitly responsible for existential risk analysis and mitigation.

By existential risk to the company I mean an event that would result in the company failing to the degree that the stored patients are discarded, even though the outside world merrily hums along, and not an event that wipes out a large chunk of humanity.

The FAQ does not seem to answer the obvious hard questions like "what if Morgan Stanley goes under?", "what if the US dollar collapses?", "what other existential risks exist, and what are their probability estimates and error bars?", "what is the estimated lifetime of Alcor until it suffers a complete failure from one of the existential risks to it coming to pass?" etc. By the way, if you think that the answer to the last question is "infinite", I recommend a basic probability and statistics course.

In other words, the risk management appears to be at the level no better than that of a regular insurance company, which is completely inadequate for an organization whose long-term survival is the most critical issue. Is this perception wrong?

Seems right to me.

Finances

(Please help make this section better! Finances are not my forte ^[2])

The fundamental financial need of a cryonics organization is to be able to pay for the preservation and indefinite storage of its members. To do this, they have to balance [charging high enough prices that they get enough money per person to cover costs] and [charging low enough prices that they can attract new members and retain old ones]. They should also be conservative in their planning, and wise in their spending and investment.

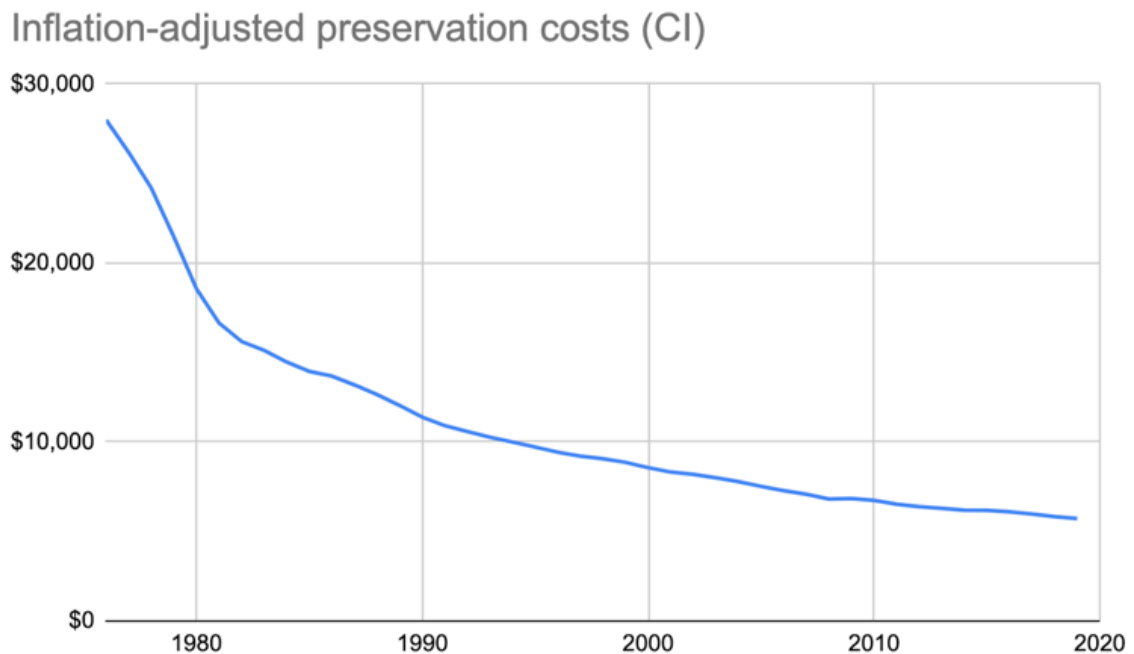
Responses to inflation

Cryonics Institute

CI has not raised its prices since it was founded in 1976.^[3] This makes me extremely nervous. CI themselves [point out](#)^[4] that not charging enough [can bankrupt a cryoshop](#), and I don't see why they're not more worried about that for themselves.

Sure, CI's expenses have stayed constant and quite low over the past ~15 years, but it still seems like bad financial planning to keep costs the same over a period that's seen 363% inflation! More than anything, eating continuously decreasing real costs for 45 years indicates to me that CI isn't taking long-term planning seriously.

This is what it looks like to keep costs at \$28,000 starting in 1976:



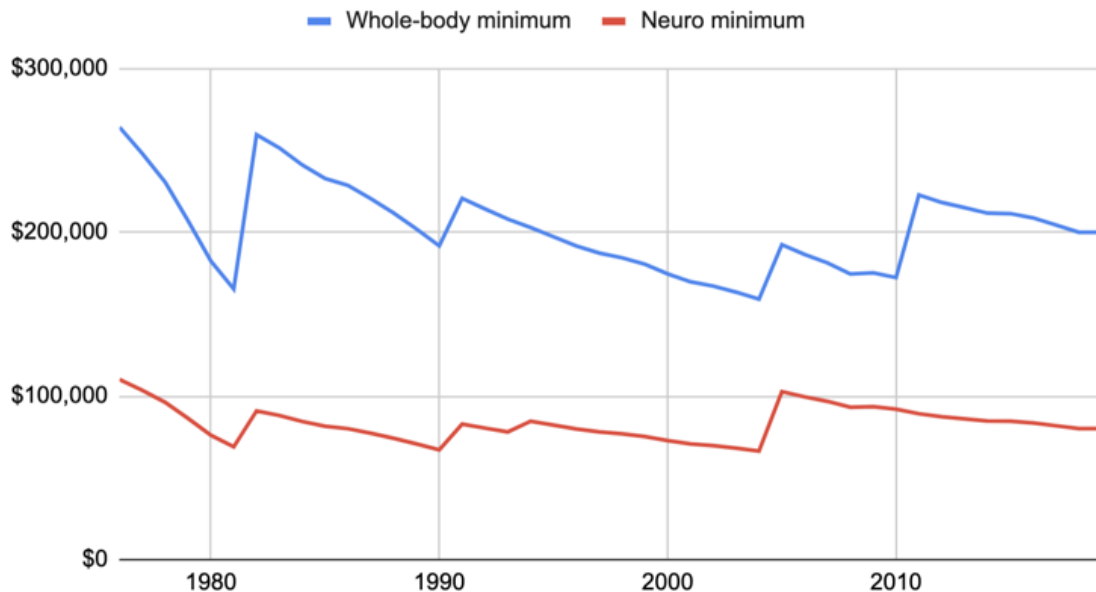
Alcor

Alcor has raised its prices multiple times since its founding, and even they are [struggling](#) to [keep up](#) with inflation. Here's a history of Alcor's cost increases that Mati Roy and I pieced together from [this essay](#) and the Wayback Machine:

	Neuro minimum	Whole-body minimum	Inflation rate since then
1976	\$25,000	\$60,000	254%
1982	\$35,000	\$100,000	127%
1991	\$45,000	\$120,000	68%
1994	\$50,000	\$120,000	57%
2005	\$80,000	\$150,000	27%
2011	\$80,000	\$200,000	12%

And here's what that looks like inflation-adjusted:

Inflation-adjusted preservation costs (Alcor)



You can see that Alcor has kept real costs fairly steady over time – and that it's due for another increase soon. Dues and application fees have followed a similar pattern of periodically adjusting upwards for inflation, though those adjustments are smaller and more frequent.

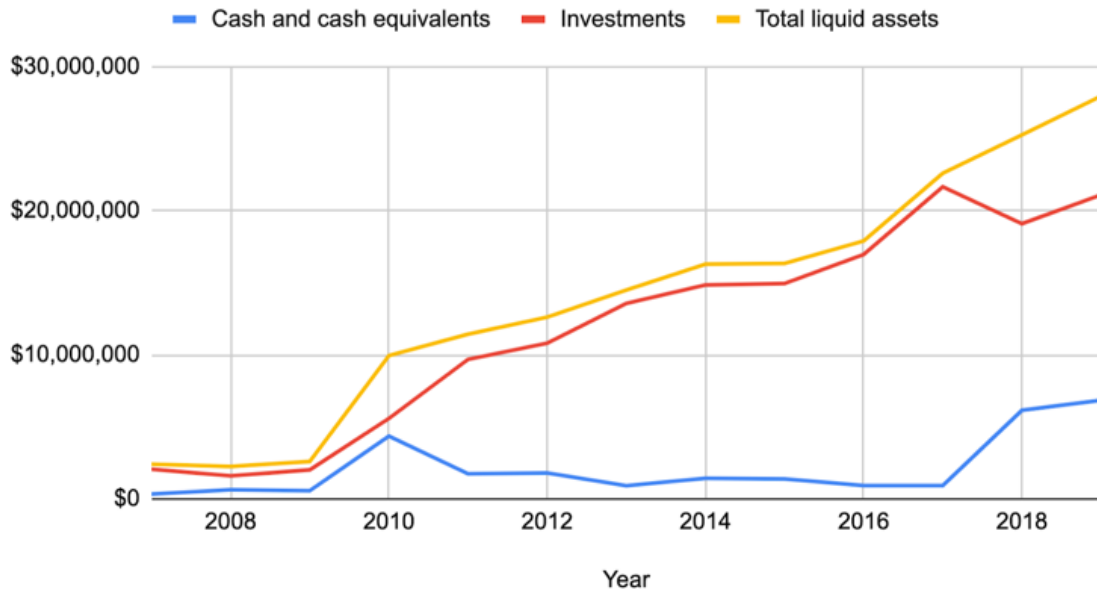
Alcor previously had a policy of grandfathering members in at the prices at their time of signup, but this policy is no longer in force, which I think is a wise financial decision on their part.

Investments & assets

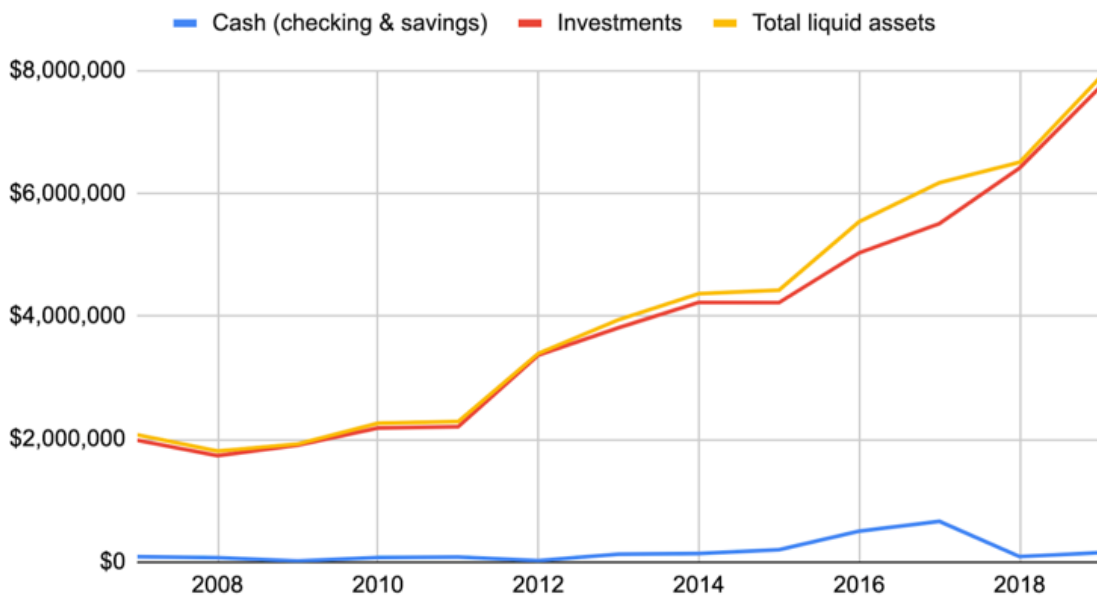
I'll continue to disclaim that I'm not very financially savvy, but it seems to me, just as a basic sanity check, that if an organization is being smart about its investments, its assets should grow over time.

I graphed the assets of both companies for the most recent 13 years, excluding restricted assets as well as property and equipment (it's *really* bad if they liquidate their property and equipment). Data is taken from public financial statements ([Alcor](#), [CI](#)).

Alcor assets 2007-2019



Cryonics Institute assets 2007-2019



As you can see, both organizations passed my sanity check. Both have seen their assets grow at an average of 12.4% per year since 2011 (I excluded the years before that because of the recession), suggesting they are following similar investment strategies. This roughly tracks the S&P 500 over the same time period.

Note that Alcor has decided to keep more assets in cash lately; I don't know why.

Expenditures

Snapshot

I skimmed the financial statements of both organizations for the past couple years, and this is what I think I see:

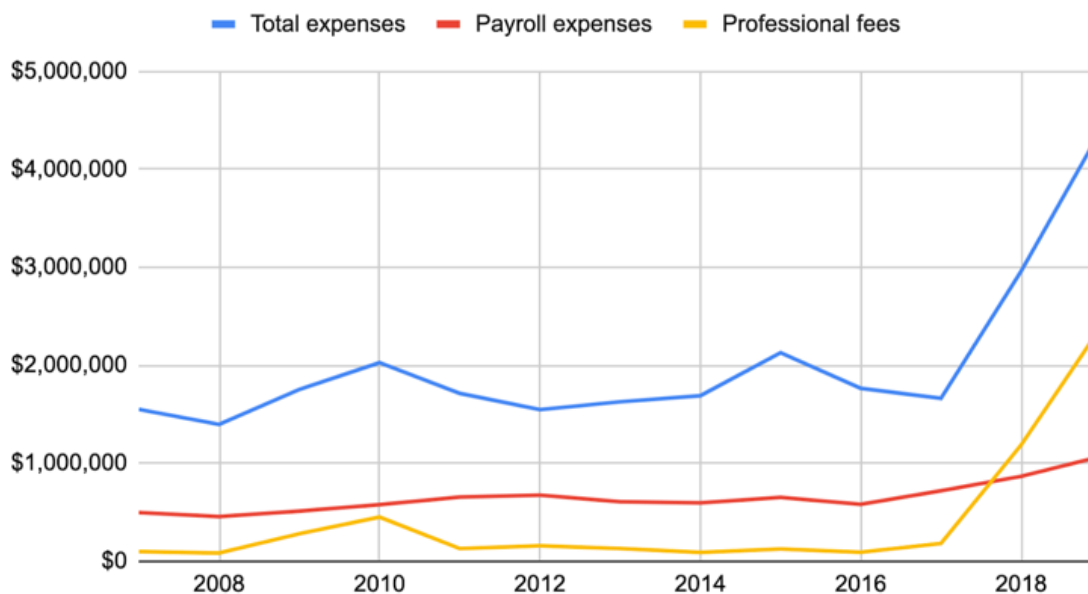
Organization	2019 expenses	Liquid assets as of 12/31/2019	# of patients as of 12/31/2020
Alcor	\$4.4M	\$27.9M	181
Cryonics Institute	\$350K	\$7.9M	198

In brief: The two have similar numbers of patients, Alcor has significantly more assets than CI, but CI spends a significantly smaller percentage of its assets each year than Alcor (4.4% vs 15.8% in 2019).

Alcor

I think the most obvious question is: Why are Alcor's expenses so high?? Not only are they high, but they've been increasing over the past few years – they hovered between \$1.5M and \$2M from 2007 to 2017, then shot up to \$3M in 2018 and \$4.4M in 2019.

Alcor expenses 2007-2019



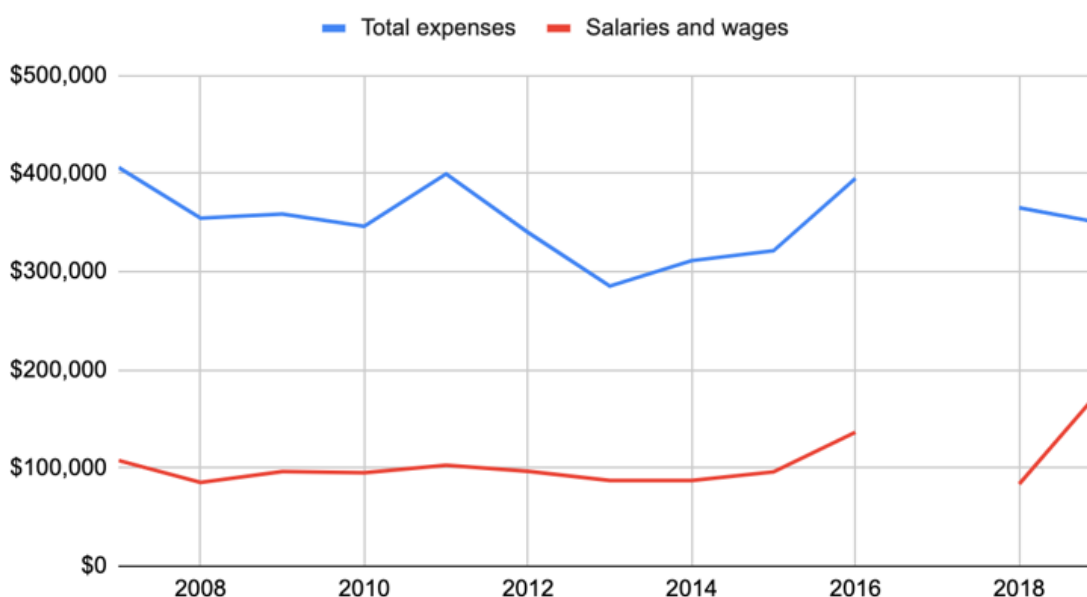
In both cases (2017-18 and 2018-19) the bulk of the increase was due to 'professional fees', which increased by more than a million dollars each year – a 550% year-over-year increase from 2017-18 and an additional 100% increase from 2018-19.

I didn't see any explanation for this, either in the financial reports or in any of [Alcor's updates](#) since late 2017 – admittedly I didn't look *that* hard, but the increase is so large that you'd hope it'd be mentioned prominently. I'd hazard a guess that it points to either a major shift in strategy, or some really thorny legal cases (Mati pointed me to [this 2019 lawsuit](#)), but that's just speculation. I did check whether there'd been a large spike in the number of preservations done in those years, but there wasn't anything outside of the normal range.

Another concern I have is that the 2017 numbers as reported [at the end of 2017](#) are substantively different from the 2017 numbers as reported (and used for comparison) [at the end of 2018](#). Not different enough to affect the trends, but definitely different, and I don't know why. Note that, as mentioned above, I did not reach out to Alcor directly to ask.

Cryonics Institute

Cryonic Institute expenses 2007-2019



(Note: 2017 is omitted because as far as I can tell they [only have half-year data](#) for that year? Spending for that year does appear to fall somewhere within the expected range – I'm just not sure exactly where.)

As you can see, CI's expenses have remained remarkably stable over the past decade, basically always falling between \$300K and \$400K per year – and note that this is before adjusting for inflation.

Other factors

Professionalism

CI does a way worse job than Alcor of projecting professionalism. For example, compare Alcor's annual financial report's vs CI's. Alcor has long, standardized, well-formatted documents full of legalese, while CI has PDFs of spreadsheets that look different from year to year and don't even have font consistency within individual documents. Its website is difficult

to navigate and riddled with spelling errors. As we saw above, it doesn't even pretend to be planning for long-term stability.

Also, CI members regularly receive phishing emails like this one:

From: **Cryonics Institute** <info.cryonics.fastmail@gmail.com>
Date: Thu, Nov 5, 2020 at 8:39 AM
Subject: Cryonic Institute
To:

Could you please confirm to us when you would be able to make payment for your Membership and Standby payment.

I will await your reply.

Sincerely
Andy Zawacki

On the other hand, there's the argument that CI is what it is, and it isn't trying to deceive you with a veneer of professionalism. It's not like Alcor's consistent font usage changes the fact that it's underprepared for global disasters or that many of its patients incur lots of ischemic time.

Membership

If we take their reported membership numbers at face value, CI has more members than Alcor. However, I'm told that CI has stopped reporting how many of its members are actually signed up for cryopreservation (you can be a CI Member without signing up, whereas you're only a full Alcor Member if you sign up; otherwise you're only an Associate Member), so just comparing the numbers to one another doesn't tell you much.^[1] In any case, they're in the same general ballpark, with around 1000 people signed up for cryonics through each organization.

Summary

Why choose CI?

Easier signup

Signing up with CI is easier because they don't need to be the owner of your life insurance policy (just the beneficiary), which broadens your options considerably. You can even use a group insurance policy obtained through your employer.

More financially conservative

You might decide to bet on CI long-term based on the fact that its spending is much lower and much more consistent than Alcor's.

It can be cheaper

If you're really strapped for cash and want to get signed up right now, CI is more likely to be affordable. See "[When is CI cheaper?](#)" above.

Why choose Alcor?

Better preservation

It seems like by far the most important thing is being near a perfusion team when you die, if at all possible. Alcor makes that easier with its relocation assistance and its relationship with a hospice. It also removes the cognitive burden of standby arrangements by making centralized standby mandatory for all members.

Perfusion is a murkier area, but I feel that I've seen more reason to be confident in Alcor's perfusion technology than CI's.

Future planning

While it's still far from as good as it needs to be to last 1000 years, Alcor at least outperforms CI on having done basic future planning, like choosing a low-risk location for its facilities and raising its prices to keep pace with inflation.

Solid reputation

While the reputation itself is screened off by the other considerations presented in this post, it appears to me that – due to its claims to professionalism – Alcor is held to higher standards than CI by people in the cryonics community. This kind of scrutiny may or may not lead to actual better performance, but it at least incentivizes it.

Bottom line

If you're in the Americas, I recommend Alcor. If you're in Eurasia, I probably still recommend Alcor, but I'd also be interested in someone looking further into Tomorrow Biostasis.

Commenting guidelines

I approached this question in good faith and had no pre-existing ties to either Alcor or CI. No cryonics organization fills me with confidence, but given that these are the options I have to choose among, I've chosen Alcor. If your calculus comes out different, feel free to express why in the comments. I'd also be interested to hear if you think I've made any factual errors. However, if I judge your comments to be unnecessarily partisan (in any direction), hostile, or otherwise unproductive, I will delete them.

*Besides Alcor and CI, there are at least four other US-based cryonics organizations: American Cryonics Society (ACS), Oregon Cryonics, Osiris, and Trans Time.

- If you sign up for cryopreservation through American Cryonics Society, your storage will ultimately be handled by CI. ACS's value-add is that they offer additional options, like different preservation procedures and establishment of a research and reanimation fund. You can read more about these [on their website](#).
- [Oregon Cryonics](#) has a decent reputation from what I can tell, but they only accept members who live very near their facilities in Salem, so they're not worth looking into for the vast majority of people.
- [Osiris](#) is very new and [not very well regarded](#).
- Trans Time [appears](#) to have its own cryo storage facility with a nonzero number of patients in cryostasis, but their [website](#) is so intensely awful that I can't figure out what they do or how one might go about signing up with them.

	Whole-body	Neuro	Founded	Standby	Patients	Members*
	price	price				
Alcor	\$200,000	\$80,000	1974	Mandatory	181	1317
ACS	\$155,000	N/A	1969	Optional	19	?
CI	\$28,000	N/A	1976	Optional	200	1725
KrioRus	\$36,000	\$18,000	2005	Optional	51	200
Oregon						
Cryo	N/A	\$48,000	2005	Mandatory	8	?
Osiris	\$28,500	N/A	2016	?	?	?
Trans						
Time	\$150,000	?	1972	?	3	?

*Remember that members are not necessarily signed up for cryonics.

There are also some additional international cryonics organizations:

- Shandong Yinfeng Life Science Research Institute (or Yinfeng for short), in China, has been operating since 2015.
- [Cryonics Germany](#) is a small operation that provides neuro storage only.
- [Southern Cryonics](#) is slated to open soon and will be the first cryonics provider in the southern hemisphere.

1. [^](#)

The last time CI shared the fraction of their members that were signed up for cryonics was in 2014, and it was $578/1010 = \sim 57\%$. If we assume the same ratio today, we find that 983 people are signed up for cryonics with CI. [As of October 2020](#), 285 CI members were signed up with Suspended Animation; $285/983 = \sim 29\%$.

2. [^](#)

This section would benefit immensely from someone more financially savvy looking into it for even just an hour. For example, I'd love for someone to look into this claim from the 2012 thread:

Unlike CI, Alcor has created robust practices and mechanisms for long-term maintenance and growth of the Patient Care Trust Fund and the Endowment Fund. Go take a look at CI's financial reports. See how little money is available for the indefinite care and eventual revival of each patient. Also look at the returns on investment of those funds.

3. [^](#)

See ["What about inflation?"](#)

4. [^](#)

See ["But what if I don't have anything?"](#)

#4: Introduction to life insurance for cryonics

This is post 4 of 10 in my [cryonics signup sequence](#), and the first of five posts on life insurance. I know that sounds like a lot. It's gonna be okay.

Introduction

Why life insurance?

There are multiple ways to fund your cryopreservation, but most people use life insurance "because it requires no sizeable up front assets." So I'll be focusing on life insurance, which is a likely-unfamiliar bureaucratic labyrinth. Be aware that most people who buy permanent life insurance are using it as an investment vehicle, and as such, a lot of the advice out there just doesn't apply to you.

For information about alternative payment options for Alcor and CI – particularly relevant if you have enough cash to fund your cryopreservation in full right now – see [Appendix B](#). If you are using KrioRus you can skip the next five posts, since KrioRus has [its own payment structure](#).

What is life insurance?

In brief, when you take out a life insurance policy, you pay an insurance company a monthly fee, in exchange for them paying out a lump sum to someone when you die. In the case of cryonics, this sum is paid to your cryonics provider, in order to cover your cryopreservation.

The moment you make your first payment, your beneficiary is entitled to the full death benefit amount, even if you die the next day.

Process overview

The process of obtaining life insurance can be daunting, so I want to lay it out in excruciating detail, roughly divided into three subsections:

1. Decision process (~4 to 20 hours)
 1. **Read my posts** on life insurance to get a basic understanding of the landscape
 2. **Contact a life insurance agent** who's familiar with cryonics
 3. **Provide the agent with your personal health information**
 4. **Talk with the agent** to understand your options based on your insurability, financial situation, and personal preferences
 5. **Look over quotes/illustrations** from your agent
 6. **Make a final decision** on your policy type, carrier, and death benefit amount

2. Underwriting process (~6 to 10 weeks)
 1. Tell your agent you'd like to begin the underwriting process
 2. **Submit an application** by meeting with your agent
 3. **Complete a phone interview about your health** with someone from ExamOne
 4. **Submit to a brief medical exam** if your health is in question
 5. **Wait**
3. Final steps (~1 hour)
 1. **Look over the final policy** with your agent
 2. **Sign your policy**
 3. **Send your policy to Alcor/CI**

In this post, I'll cover the basics – including how much life insurance you'll need, what information you'll want on hand, and what to do if you're not a US citizen. I have four other posts that look more deeply into [types of life insurance](#), [cryonics-friendly insurance carriers](#), [cryonics-friendly life insurance agents](#), and [the underwriting process](#), respectively.

Terms & definitions

There's a lot of jargon in the field of life insurance that I'll be using pretty indiscriminately in the coming posts. So here's a glossary (partially [via Policygenius](#), mostly via me):

Beneficiary	The person(s) who are selected by the policyholder to receive the death benefit. In our case, this is the cryonics provider.
Carrier	The company through which you obtain life insurance.
Cash value	A tax-deferred savings account that is included in some permanent life insurance policies.
Contingent beneficiary	The person(s) who are selected by the policyholder to receive the death benefit in case the original beneficiary is deceased, refuses the death benefit, or cannot be located.
Coverage amount	The amount paid to beneficiaries when a policyholder dies. This is the same as death benefit .
Death benefit	The amount paid to beneficiaries when a policyholder dies.
Illustration / Policy illustration	A non-binding document detailing a potential insurance policy, including premiums, term, and (if applicable) projected performance. Similar to a quote.
Insurance agent	A middleman between you and insurance companies; helps you navigate bureaucracy. Employed by a specific insurance company.
Insurance broker	A middleman between you and insurance companies; helps you navigate bureaucracy. Employed by an independent/third-party firm.
Overfunding	Taking out more coverage than the minimum needed.
Owner	The person whose name is on the insurance policy and who is able to access information about it and control it.

Premium	The regular payments made toward the insurance policy. These are typically monthly.
Rider	Something you add to your insurance policy. Probably don't worry about this; I didn't.
Surrender	Cancelling your policy, e.g. if you can no longer afford the premiums. For our purposes, you want to avoid this.
Term	The amount of time for which your policy is in force.
Underwriting	The approval process for life insurance.

Coverage amount

How much coverage you need depends on the cost of the preservation you decided on. It also depends on how much inflation you expect there to be between now and your legal death.

Minimum coverage

Currently, Alcor's minimum required funding for neuropreservation is \$80,000, while the minimum funding for full-body preservation is \$200,000. Alcor [recommends](#) overfunding your life insurance policy by at least \$25,000, so that's \$105,000 for neuro and \$225,000 for full-body. This will be your starting coverage amount when seeking life insurance. This is conveniently enough overfunding that your standby fees are automatically waived!

CI charges \$28,000, so life insurance costs will be proportionally lower. Remember that you may also want to pay \$30,000 to CI for stabilization and transportation, and \$30,000 to Suspended Animation for standby, which brings you to a total coverage amount of about \$90,000.

Accounting for inflation

As mentioned in my last post, Alcor's costs have historically risen in tandem with inflation. CI's have remained the same since 1976, but I don't expect that to be sustainable forever. So ideally you should plan to have available not the minimum funding amount, but instead, that amount compounded by the general rate of inflation.

[Let's assume](#) that costs double roughly every 20 years. If you're in your 60s, like my mom, there's ~one doubling time before the end of your natural lifespan, so you should plan on neuropreservation being ~\$160,000 and whole-body being ~\$400,000. If you're in your 20s, like me, there are three doubling times, making neuropreservation ~\$650,000 and whole-body ~\$1 million.

There are three broad ways to handle the inevitable cost increases that come with inflation:

1. **Overfunding your life insurance policy** – i.e. taking out a policy with a larger death benefit
2. **Purchasing additional life insurance** in the future

3. **Doing nothing** – Alcor can handle cost increases on their end by just charging you extra fees (CI hasn't yet needed to implement a system for this)

I opted for #1, taking out more life insurance from the outset. I also chose a policy with a death benefit that increases over time and that's somewhat adjustable depending on how much money I pay into the policy. I'm hoping this will give me enough flexibility that I won't have to buy additional life insurance or pay extra fees to Alcor.

I recommend against #2, since life insurance gets more expensive the older you are, and waiting to purchase it is always a gamble since you may suddenly become less healthy. I don't really know how the fees are structured in #3, but my guess is that this method is probably more expensive than just taking out additional insurance from the outset would have been.

Additional overfunding

Potentially switching from neuro to whole-body

If you – [like me](#) – are signing up for neuropreservation, but think you might want to switch to whole-body in the future, then you should have a high enough funding level to cover whole-body from the outset. The reason for this is that life insurance gets more expensive the older you are, so it's risky to plan on taking out extra life insurance in the future, if and when you decide to switch to whole-body.

Other potential cost increases

I was repeatedly warned by insurance agents of 'potential cost increases' in cryonics, which they told me would be due to advancement in cryonics technology and medical-specific inflation rates. But when I looked into this, I only found cost increases in line with global inflation. It's not impossible that some radical new technology will drastically change the cost landscape before it comes time to cryopreserve you, but one can't make a strong argument that that will happen just based on historical data.

Here's how I see it:

- **Factors driving costs down:** Economies of scale; some potential technological advances (e.g. ones that make the process quicker and easier)
- **Factors driving costs up:** Inflation; some potential technological advances (e.g. extra step in preservation, or new more expensive cryoprotectant)

My recommendation is to ignore anything your agent (or anyone, unless they have insider knowledge) says about process-based cost increases, and plan only for global inflation.

Life insurance as financial investment

If you opt for a policy that involves cash growth at all, you should think of any overfunding beyond the required amount as a financial investment. Basically every single article I've read about life insurance as an investment vehicle has screamed **THIS IS A BAD INVESTMENT!!** So I strongly caution you against being attracted to overfunding your policy just for the extra cash value – you'd do better to just put that extra money into index funds.

Before you get started

Personal & medical history

You'll want to have your medical history handy before you begin the process, for convenience's sake, since your insurance premiums are calculated based on [actuarial](#) projections of your likelihood of dying. Factors that go into that are your age, gender, health history, location, and whether you engage in hazardous activities. Hazardous activities include extreme sports (such as BASE jumping), dangerous occupations (such as logging), and drug use (especially smoking). Insurance companies seem to care a lot about what medications you're on and whether you specifically use tobacco. If your risk factors are too high, some insurance carriers might deny you entirely. Others will just charge you high premiums.

Insurance companies also want to know your income, but this will not affect your premiums.

Visa status (USA)

It's very difficult to be approved by a US insurer if you're not a US citizen, unless you can show that you're on a path to citizenship or permanent residency – and apparently it's only gotten harder with COVID and the Trump administration. The reason these laws exist is to prevent non-citizens from using insurance as a means of money laundering, which does make sense but is kind of a bummer for our purposes.

There do exist life insurance carriers that will approve non-citizens, but they aren't the same as the cryonics-friendly carriers. Luckily, your cryopreservation can be funded by life insurance underwritten in another country! I'll cover this in a bit more detail in the next post.

If you have a Green Card or an H-1B or L-1 visa, you're fine – you should be able to get coverage because the government sees you as being on a path to citizenship or permanent residency. It also helps to have assets in the US (not just cash but physical assets such as real estate) or to have family here.

#4.1: Types of life insurance

This is post 5 of 10 in my [cryonics signup guide](#), and the second of five posts on life insurance.

In this post, I'll cover the different types of life insurance policies you might want to use to fund your cryopreservation. This is the most complicated part of this entire sequence and it's taken me many, many hours of confusion to reach even the tenuous understanding I'm presenting here. Please bear with me and let me know if you spot any errors or have any questions.

Note that in addition to being labyrinthine, the life insurance landscape changes fairly often, such that the options that were available to you when you signed up for cryonics ten years ago might no longer be offered. They're always adding new types of life insurance and getting rid of old ones, and the name of a policy doesn't always tell you the relevant information about it.

Getting oriented

Life insurance policy types vary along several major axes. Some cover you forever, while others expire; some are more expensive than others; some are more reliable and others are more flexible.

Here is the basic information in table form. You may want to refer back to this if you get confused while reading.

	Duration	Premiums	Death benefit	Cash value	Interest rates	Price
Term Life	Fixed term	Fixed	Fixed	No	N/A	\$
Whole Life	Permanent	Fixed	Fixed	Yes	Guaranteed	\$\$\$\$
Universal Life	Permanent	Adjustable	Adjustable	Yes	Determined by the carrier; variable	\$\$\$\$
Guaranteed Universal Life	Permanent	Fixed	Fixed	No	Guaranteed	\$
Indexed	Permanent	Adjustable	Adjustable	Yes	Indexed on	\$\$\$

Universal Life					S&P 500, capped	
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For maximum hope of successful communication, I've approached this question from two angles - first I'll talk about the ways in which policies differ from one another, then I'll give a summary of each type of policy.

Properties of an ideal cryonics life insurance policy

Before we get into what types of life insurance actually exist, I think it's useful to think about what a life insurance policy tailored specifically for cryonics would look like. Then we can find the real-world policy that corresponds most closely to the ideal.

Permanence

You want coverage until you die, because otherwise there's no point. This means that you should steer away from term policies, unless you expect to be able to self-fund in the future.

Flexibility

Your death benefit needs to cover the full amount of your cryopreservation at the time when you die. Since you can't know exactly when you will die or how much cryonics will cost at that time, ideally you would get the amount of coverage *currently* needed to cover your preservation, and your death benefit would keep pace with inflation as time went on. That is, essentially, it would pay out a certain amount of purchasing power, rather than a certain dollar amount.

If you're signing up for neuropreservation, your policy would ideally have the flexibility to switch to whole-body built in. This means your death benefit would be adjustable - for example, you could just pay higher premiums if you wanted to increase the death benefit amount.

Returns

Ideally the money you pay in premiums would earn interest for you. And of course, all else equal you want the price to be as low as possible.

TL;DR

An ideal policy for our purposes would:

- Be cheap, permanent, and flexible
- Have a death benefit that grows with inflation
- Earn interest for you

Axes of variance

Fixed term vs permanent insurance

All of the insurance agents I've talked to have recommended permanent insurance for cryonics, but I know at least two people who have chosen term insurance, so it's worth looking at both.

Term insurance

As the name implies, term insurance covers you for a fixed amount of time. You can get term insurance for up to 30 years. Generally, once the term ends, your coverage ends.

Term insurance is the cheapest option by a factor of ~two, which is the primary reason someone might choose it. However, term insurance is given to you basically *on the condition* that it's very unlikely that you'll die within the term – which is how they can afford to sell it so cheap. According to one agent I talked to, only 3% of term policies result in a death claim.

Permanent insurance

Again, the name is pretty self-explanatory – permanent insurance covers you until you die, whenever that may be. Since there are several subtypes of permanent insurance, there are fewer broad claims I can make here. But I can say that permanent insurance is more expensive than term insurance, and that there are more options available.

Which one should I choose?

Permanent insurance is overall a far better choice for cryonics, because the death benefit will pay out no matter what age you are when you die. Gordon Worley gives a good summary of term insurance:

[U]sing term life insurance is cheaper but riskier, since you might outlive the term and be too old to purchase additional life insurance at a reasonable rate when you need it, effectively canceling your ability to pay for cryonics unless you have in the intervening time managed to do financially well enough to self-fund.

However, if you're signing up for cryonics but are really strapped for cash, you might want to take out a term policy just in case you die soon, then switch to a permanent policy once you're more financially secure. If you're able to make the switch within ~5 years, or before the age of ~35, you should still be able to get permanent life insurance at a reasonable rate.

Cash value

From [Policygenius](#):

Whole life insurance and universal life insurance both have a cash-value component. Each month, a certain portion of the premium you pay to keep the policy active goes into a tax-deferred savings account, known as the cash value of the policy. (The exact amount that goes into savings is determined by your individual policy.) The policy's cash value grows over time.

Depending on your policy and how much cash value it's built up, you may be able to use the cash value to pay your premiums, or take out a low-interest loan against your policy. However, both of these options come with some risk: if you die before you repay your loan, the amount you owe will be deducted from your death benefit. And if you use up all of your policy's cash value to pay your premiums, your policy will lapse.

Some policies allow you to choose how your excess premiums are invested, while others invest them in the S&P 500 or just guarantee you a certain rate of return.

When using life insurance to fund cryopreservation, you should just not touch the cash value at all. But it's good to have it anyway because:

- If you surrender the policy because you can't afford it anymore, you can get the accumulated cash value back from it (less surrender charges and taxes).
- In some cases, the cash value is added to the original death benefit amount, and both pay out to your beneficiary when you die. This depends on your specific policy rather than just on your policy type; for more detail on level vs increasing death benefits, see [Investopedia's explanation](#).

Guaranteed vs non-guaranteed insurance

Guaranteed

What parts of the policy are guaranteed?

- **Premiums** are locked in at time of buying and guaranteed to never change (either forever or until a certain very old age like 120)
- **Death benefit** is guaranteed to pay out in full
- **Interest rates** (if applicable) are fixed at a rate set by the insurance company

Guaranteed insurance provides peace of mind, but it also lacks flexibility, and interest rates (when applicable) are relatively low.

Non-guaranteed

Why would you choose something with the name non-guaranteed? Basically, because while you're losing certainty, you're gaining flexibility. Also, exposing yourself to more risk means leaving open the possibility of higher gains – the projected returns on non-guaranteed policies are significantly higher than those for guaranteed policies.

With non-guaranteed policies, **premiums** are dependent on market performance, so if the market outperforms projections, you won't have to pay as much into the policy as initially quoted. Conversely, if the market tanks hard for a long time, your premiums can rise basically without bound. This is why you'll be cautioned that "Non-guaranteed coverage has an inherent risk of becoming unaffordable, in which case you might find yourself unable to secure *any* life insurance."

Types of insurance

Term insurance

Term insurance is non-permanent; it lasts for 10, 20, or 30 years and is very unlikely to cover you until death.

Premiums

Term insurance is the cheapest option by a factor of two or more, but only if you're statistically highly unlikely to die within the term. If you're closer to death, term premiums become exorbitant. Term insurance is also brittle – your policy will lapse if you miss a single payment.

Death benefit

Term insurance pays out a fixed death benefit. There is no cash accumulation or death benefit growth.

Whole life insurance

Whole life is a guaranteed, permanent policy with cash value accumulation. It is expensive.

Premiums

Whole life is the most expensive type of policy. Whole life premiums can be up to 5x as expensive as term premiums and 2x as expensive as IUL premiums. However, they are also guaranteed to never change for as long as you live.

Cash value

Whole life has a cash value component. Excess premiums are invested at the insurance company's discretion, usually with returns of about 2-6% per year.

Death benefit

Your death benefit is guaranteed to pay out in full. It increases somewhat over time; for me, the dollar amount would ~double between now and the time I'm 90.

Payment options (limited vs lifetime)

There are two payment options for whole life insurance: limited payment and lifetime payment. The differences between the two are quite straightforward.

- **Lifetime payment** is cheaper per month, but you have to pay every month for the rest of your life.
- **Limited payment** is more expensive per month, but after a fixed time, you will have entirely paid off your policy and you'll get to have it forever without paying anymore.

Assuming you're young and unlikely to die soon, choosing a 20-year limited payment ('20 pay') will result in a lower cumulative out-of-pocket cost *before inflation*. (For me it's lower even taking into account 2% inflation per year, but I'm quite young so YMMV). Conversely, if you, like my mom, are signing up when there are only about 20 years left in your expected lifespan, choosing 20 pay would be stupid because it would just be more expensive with no upsides.

TL;DR

- Expensive but guaranteed
- Static premiums
- Death benefit may grow a bit
- Cash value invested with 2-6% returns
- Option to pay off the policy in full in 10 or 20 years

Indexed universal life insurance (IUL)

IUL is a non-guaranteed, permanent policy with cash value accumulation. It is tied to the performance of the S&P 500.

Premiums

IUL is a relatively cheap type of permanent policy. Premiums are calculated based on the current crediting rate (~6% at time of writing), but you have to rerun policy illustrations every 5 to 10 years to check if the policy is underperforming. If interest rates decline, your premiums may rise, and in the worst case, your death benefit may drop below adequate coverage. On the other hand, if interest rates rise, your premiums may drop and you could potentially stop having to pay at all.

IUL premiums are also flexible. You can pay more into the policy if you want to increase the death benefit, or you can miss months and let the policy pay for itself out of the accumulated cash value.

Cash value

IUL has a cash value component. Premiums are invested in the S&P 500, and the interest you earn goes toward reducing your premiums, with the excess amount (after funding the cash value and the insurance company's cut) going to increase the growth of the cash value.

Performance is capped – meaning that there's a limit on how high your returns can be, but you're also protected from risk. The connection to S&P 500 is tax-free and credit-protected.

Death benefit

The death benefit in IUL policies is flexible – you can adjust it up or down (within limits) by paying higher or lower premiums. It also grows over time – the accumulated cash value, if left untouched, is added to the death benefit, such that the payout upon your death is [the initial death benefit] + [the accumulated cash value].

In my case, with reasonable interest rate assumptions, I was able to get the death benefit to keep pace with inflation (in expectation) by paying a bit extra per month.

TL;DR

- Relatively cheap and risky
- Tied to S&P 500
- Pricing based on current interest-rate assumptions
- Flexible premiums
- Flexible and growing death benefit

Universal life insurance (UL)

UL is just like IUL except worse, because it's more expensive and your cash value disappears when you die rather than being paid out to your beneficiary. Another difference is that your premiums are invested at the insurance company's discretion rather than just being invested in the S&P 500.

This section is shorter than the other ones because no agent ever recommended that I consider UL, so I didn't put as much time into understanding it. I did talk to [someone](#) who used a UL policy to fund his cryopreservation, but he got that policy years ago and the landscape has changed since then; the carrier in question doesn't even offer UL anymore.

Guaranteed universal life insurance (GUL)

GUL is a guaranteed, permanent policy with no cash accumulation. You can think of it either as a cheaper whole life policy without cash accumulation, or as a term policy that lasts until a certain age (or until death) rather than for a certain amount of time.

Premiums

GUL is the cheapest type of permanent insurance. Your premiums are fixed at the time of buying and guaranteed not to change until a certain age (e.g. 90 or 121), at which point you'll likely already be dead.

Death benefit

You have coverage as long as you pay your premiums. Since there's no cash value, there's nothing to support the death benefit if you stop paying your premiums, so the policy is brittle. Your death benefit is guaranteed not to decrease, but it will also never increase.

TL;DR

- Cheap and secure
- No cash value or death benefit growth
- Basically a term policy that lasts until age 90 or later

Choosing a policy

The decision about what kind of life insurance to buy ultimately comes down to whether you care most about reliability, flexibility, or budget. It also depends on your personal insurability.

Why I chose IUL

When I started the process, I thought I cared most about reliability, and I was leaning towards whole life. But as I gradually considered more angles, and especially when I thought about the expected amount of inflation between now and the end of my

natural lifespan, flexibility and higher expected cash accumulation began to sound a lot more valuable to me.

A lot of people and a lot of websites played up the risks of IUL to me. But I looked at the illustrations, and I looked at historical interest rates, and I think the risks were usually overstated. Yes, the risks are there, but I think they're sufficiently unlikely that the policy is overall a good bet. In addition, though I don't really understand The Economy, it seems to me that if the market tanks hard enough that my IUL policy lapses, cryonics providers are going to be in pretty big trouble anyway.

My recommendations

Here are my general recommendations, with the disclaimer that I am a layperson just trying to figure things out from Google and a couple hours of talking to insurance agents. Also maybe people without licenses aren't allowed to give advice on this kind of thing, so, um, this is not advice.

If you're price-sensitive and expect to remain so:

- Go for a permanent insurance option with low premiums (either GUL or IUL), and get it now, before age and poor health make your premiums rise.

If you're currently price-sensitive but will be able to save a few hundred thousand dollars in the next decade:

- Get term insurance now so that you can pay the lowest premiums but still be covered just in case you die in the next 20 (or 30) years. At the end of the term, you'll have enough money to cover your preservation in full, at which point you should self-fund with a trust.
 - (See [this comment](#) for my reservations about this option.)

If you just want to get the best thing:

- If it's not too expensive given your risk profile, I recommend IUL, because I think the flexibility makes it a good fit for cryonics.

If you're old:

- If you're around retirement age, your premiums are going to be very high. Hopefully you've accumulated enough assets by that age to self-fund. But if you can't, the best life insurance option is probably GUL, because the premiums will be the most affordable, and you don't need as much built-in flexibility if you're closer to the end of your lifespan.

Obviously I haven't covered every possible scenario, but I hope that you now have enough context to be able to make an informed decision about what's best for you.

As always, feel free to ask me questions about any of this. I can't promise to be able to answer all of them due to my tenuous grasp on economics as a whole, but I do think that even with that deficit, I'm more equipped to answer questions about the life-insurance-for-cryonics landscape than almost anyone.

#4.2: Cryonics-friendly life insurance carriers

This is post 6 of 10 in my [cryonics signup guide](#), and the third of five posts on life insurance.

It's more difficult to obtain life insurance for cryonics than to obtain life insurance in general, because there's a very limited number of (well-rated) insurance companies in the US that are okay with approving insurance 'for a cryonics objective.' One reason for this is that in the case of cryonics, your life insurance policy is owned by a third party, which makes things complicated and risky for the insurance company.

According to my insurance broker, there are currently ~four insurance companies in the US that will underwrite for cryonics. These companies – in order of how likely you are to want to use them – are:

- Kansas City Life
- Nationwide
- New York Life
- Northwestern Mutual

Most people I know have used Kansas City Life (hereafter KCL), but there are situations in which Nationwide might be the right choice. Nonetheless, let's take a brief look at each of the options.

Kansas City Life (KCL)

Basically, I think everyone should go with KCL unless they have a specific reason not to. (If you are young and healthy, you probably have no reason not to.) Here's why:

- **Easy process** – While the other carriers require additional legal work before approving a policy for cryonics, KCL will just approve you.
- **Multiple options** – KCL offers term, whole life, UL, and IUL policies, so odds are good that they offer the thing that you want. (If you're dead set on GUL, you'll need to look elsewhere.)
- **Joint ownership** – KCL is the only one of these companies that allows for joint ownership of your insurance policy. This is great if you're an Alcor patient, because you have to make Alcor an owner, but if Alcor is the sole owner, it's really inconvenient for you because the company can't tell you anything about the policy; all information has to go through Alcor. (It's irrelevant for CI patients).
- **Cryonics friendliness** – While all of these companies are *willing* to underwrite for cryonics, I'm pretty sure KCL has done it more than any of the rest. Cryonics isn't weird or extra complicated for them to deal with.
- **Financial stability** – According to Rudi Hoffman, KCL is debt-free, which is unusual for an insurance company. This makes it even more unlikely than average that the company will go under and your death benefit will fail to pay out.

I recognize that I sound like a freaking advertisement, but taking into account all the factors it really does seem like KCL is the best option for most people when signing up for cryonics. The crux for me is the lack of added complexity – something that will become clearer when we look at other carriers below.

Nationwide

Depending on your age and other factors, Nationwide can be a more cost-effective option than KCL. My understanding is that, while Nationwide's premiums are generally cheaper, they require additional steps for cryonics clients that add both cost and complexity.

Offerings

Nationwide offers all the types of insurance relevant to us: UL, GUL, IUL, whole life, and term.

Additional complexity

If you choose Nationwide for a cryonics objective, you must establish a trust before you can apply for insurance. Establishing a trust which holds your life insurance policy for Alcor is a fairly common thing for Alcor members to do, and you can get help with it from Alcor (they have a whole Trust Department). Alcor must review and accept your trust before you can proceed. (I don't know how this works for CI, sorry.)

In addition (for Alcor members only), you're required to own a personal, non-cryonics life insurance policy *before* you can get approved for the cryonics policy. This is because insurance companies are wary of life insurance policies owned by a third party, due to the potential for lawsuits. So you'll own two separate life insurance policies, which somehow releases Nationwide from legal liability.

I'd ballpark the cost of this additional legal work at about \$1000, but I haven't actually done it so I don't know. If you have experience with taking out a cryonics policy from Nationwide, let me know.

Stricter approval criteria

Nationwide has stricter guidelines than KCL for approvals – they need to see that you're employed and have sufficient income to pay your premiums.

If Nationwide is cheaper for you, but you're concerned about not being approved and really want cryonics coverage right now (e.g. if you're relatively old), you can take out a policy with KCL for the time being, then reapply through Nationwide. If you're approved, you can surrender your KCL contract and replace it with the new, lower-cost one from Nationwide.

Bottom line

Nationwide requires a substantial amount of additional legal work, but it is significantly more cost-effective for some people. I recommend talking to [David Donato](#) to find out whether Nationwide is a better fit for you than KCL.

The other ones

These two companies are willing to underwrite life insurance policies for cryonics, but I haven't seen a good reason to go with either of them over KCL or Nationwide. Both are subject to at least some of the same additional work as Nationwide, and neither allows you to own your policy jointly with Alcor.

Northwestern Mutual

Northwestern's core competency is in whole life products, though they also offer UL and term insurance. Northwestern's premiums are more expensive than KCL's, and like with Nationwide, you'll need to take out two separate life insurance policies. Northwestern may or may not approve your cryonics policy without additional legal work.

New York Life (NYL)

Like Nationwide, NYL requires you to set up a trust and take out a personal life insurance policy before you can get approved for a cryonics policy. NYL offers term, whole life, and UL, and also something called Custom Universal Life Guarantee, which sounds a lot like GUL from the description.

Non-USA insurance options

If you live outside of the United States – or if you live in the States but aren't a citizen (and don't have a green card or an H-1B or L-1 visa) – don't worry! You can fund your Alcor or CI preservation with an insurance policy from your home country. For Alcor, you need to meet the following requirements:

- The insurance provider must be rated A- or better by [A.M. Best](#).
- Alcor must be named as the beneficiary of the policy.
 - (Alcor does *not* need to be the owner, since insurance companies in countries outside the United States often are not willing to name a US organization as the policy owner.)
- There should either be no collateral assignees, or Alcor must be named as the assignee.
- The policy is placed in absolute trust.
- A minimum of one Alcor representative is named as a Trustee.
- The Death Benefit (or Sum Assured) is permanently maintained equal to or in excess of the Cryopreservation Minimum, in equivalent United States Dollars.
- Alcor is to be notified if policy lapses.
- Premium is paid current.
- Alcor requires a copy of the policy, Policy Schedule, stamped Trust Request Form (must be Absolute Trust), and stamped Deed (naming Alcor as an additional Trustee).

CI stipulates the following:

- CI must be named as the beneficiary of the policy.
- The death benefit amount must satisfy your minimum cryopreservation amount.
- CI needs proof — updated at least annually — that CI is the beneficiary and that the amount is sufficient.
- If the policy is written in a language other than English, CI requires that the entire insurance policy be translated into English, and they need a copy of both the original policy and the certified English translation.

So getting a cryonics life insurance policy elsewhere is not very different from doing it in the US, except that you won't have this detailed guide to help you. It's my impression that everywhere has the same basic types of insurance (e.g. term vs permanent), though they may go by different names; I might be wrong about this.

And of course there will be as many different regulatory environments as there are countries, which can introduce some roadblocks. For example, [from CI's website](#):

In the United Kingdom there is a law that prevents a non-profit corporation, such as the Cryonics Institute, from being listed as a direct beneficiary on a British person's life insurance policy.

But people all over the world (including the UK) are signed up with Alcor and CI, so it's really just a matter of overcoming those roadblocks; they're rarely dealbreakers. As I mentioned in the [first post](#) in this sequence, if you're doing anything cryonics-related outside of the US, try to get in contact with cryonicists in your country; they're eager to help and they definitely know more than I do about what your options are.

#4.3: Cryonics-friendly insurance agents

This is post 7 of 10 in my [cryonics signup guide](#), and the fourth of five posts on life insurance.

What is an insurance agent?

An insurance agent is someone who acts as an intermediary between insurance buyers and insurance companies. They help you with paperwork that would otherwise be a Kafkaesque nightmare, and they have the expertise to help you understand your options no matter what your situation.

Technically, not all of the people on this list are 'insurance agents' – some are 'insurance brokers' instead – but I'm just going to use the term 'agent' throughout because it would be clunky and confusing to write 'agent/broker' every time (Alcor and CI make the same elision).

Why do they need to know about cryonics?

I strongly recommend working with one of the people listed here if at all possible, because a randomly chosen life insurance agent will not be familiar with the specific companies and options most appropriate for cryonics patients. (I discussed some of the complexities of obtaining life insurance for cryonics in the [previous post](#) if you're curious.) In fact, most insurance agents – like most people in the world – will not be familiar with cryonics at all.

Costs

There is **no** upfront cost to working with the US-based insurance agents recommended here. Instead, they are paid a commission by the insurance company once you've bought a policy – which gives them incentive to upsell you, so be aware of that. (Note that a large majority of insurance agents in the US have this same payment structure; I don't know about other countries.)

Alcor-recommended insurance agents (USA)

Alcor's website [recommends](#) a few insurance agents who are used to helping Alcor clients. I contacted all three of their recommended agents in the US, for value of information. Below are my impressions of each of them.

Since you can back out of the life insurance process at any time before applying without having to pay anything, shopping around is low-risk. I encourage you to take the time to find someone you like working with – I found that it really makes a big

difference. You could also help others out by calling up some of the guys I didn't talk to and writing your own review.

Rudi Hoffman

Background

Rudi is the agent nearly everyone I know has used. He's very aware of the rationalist community – he told me he's a long-time lurker on LessWrong and that we're the best source of 'marketing' that cryonics has, and he mentioned he's helped lots of rationalists sign up and thinks of them as friends. He himself has been an Alcor member since 1994, which means he has skin in the game.

Specialty

Rudi will try to sell you an indexed universal life policy from Kansas City Life (his employer). He thinks of life insurance as an investment (evidence: he calls the policies "life insurance investments", and he himself has over a million dollars in such investments), and so will try to sell you more than you need to cover your cryopreservation.

Communication style

I find Rudi very difficult to communicate with. His communication style is very energetic and rambling, such that I was never sure what topic we were covering, and full meetings went by without me getting much information at all. Others have also reported that it can be hard to get information out of Rudi. Not only is it hard to get a word in edgewise, and not only does he switch topics at lightning speed, but he's also always in sales mode, such that I don't expect him to ever say anything bad about [IUL](#) or anything good about other types of insurance.

I found myself in the position of playing along with Rudi's overpowering personality and pandering to his sense of humor. He was incredibly obsequious when talking to me, which I found awkward, and which I think might have been because I'm a woman (my male friends don't remember any obsequiousness). I've also been told that Rudi is not a very good choice for transgender clients.

In short, I'm exhausted after every call with him. However, I am also much more sensitive to this type of thing than most people, and I know tons of people who have worked with him successfully. So, if you are a man and/or really good at interrupting and steering conversations and/or you want an IUL policy from KCL and just don't care that much about interaction style, far be it from me to warn you off of Rudi. Hopefully some of the dozens of white male LWers who have worked with Rudi can chime in here.

Further comments

Rudi will pretty transparently try to upsell you. While I eventually came to my own conclusion that I should overfund my policy, I didn't appreciate that I told him I wanted a \$100K policy and he just decided to send me illustrations for \$200K without any explanation.

Rudi also pronounced my name (and one of my friends' names) wrong, and ploughed ahead without ever checking. While it didn't particularly bother me on the object level,

it's a further bad sign regarding his communication style.

Perks: If you sign up for cryonics through Rudi, you'll get a free ticket and free transportation to an annual conference for cryonicists under 30, and kitschy e-cards on every major holiday.

TL;DR

- Most rationalists go through Rudi.
- He will try to sell you indexed universal life insurance from Kansas City Life, and will try to upsell you.
- Communication style is energetic, chaotic, obsequious, buddy-buddy, and salesy.
- I don't recommend him if you're easily socially exhausted and/or not a cis man.

David Donato

Background

David has been working in this space for about 20 years and has lots of experience helping people who are signing up for Alcor – including some of Alcor's board members. I don't know many rationalists who have gone through him, but that might just be because Rudi cornered the rationalist market early on, and word of mouth is powerful.

Specialty

David will try to sell you what he thinks is the best fit for your preferences and situation. While he generally prefers KCL for cryonics clients, he doesn't work for any single insurance company, which means he can shop around for the best deal for you.

Communication style

I really enjoyed talking with David, and I think my solid basic understanding of the life insurance landscape is pretty much 100% thanks to him. He laid things out nicely before diving in, which I really appreciated, and I found it easy to follow his explanations. He appeared even-handed in his overview of the life insurance landscape – he explained the pros and cons of each of the options in some depth, and changed his recommendation for me from whole life to IUL upon noticing a change in my preferences.

I also really liked that he was careful not to overwhelm me with too much information at once; I felt that he fit just the right amount of information, at just the right level, into our calls, and he checked in frequently to make sure I wasn't oversaturated. He's a good listener, very helpful and accommodating, and he's open to communicating however works best for you, whether that's phone, email, video call, or text. He replies extremely promptly to emails. I just had a great experience working with him.

Further comments

I recommend video calling with David if you're getting quotes, because he lets you watch him enter your information into the quoting software, and then you can play around with funding at different levels or projecting different interest rates, and see how differently things come out. Other agents just asked me for my info and then sent me back 20-page illustrations, which is more efficient but less informative.

David asked me at the beginning of our first call how to pronounce my name, which I appreciated, and I know a transgender cryonicist who had a good experience working with him.

TL;DR

- Super helpful and responsive, a great teacher.
- Wants to sell you the product that's best for you.
- Not tied to any specific insurance provider, so he can shop around for better deals and potentially save you lots of money.
- I had a great experience working with him and recommend him wholeheartedly.

Ryan Aug ([Ben Archer State Farm](#))

Background

Ryan is the cryonics specialist on a small State Farm team in Texas.

Specialty

Ryan by default provides you with quotes for both term and whole life policies. By going through a State Farm agent, you automatically choose State Farm as your insurance provider.

Communication style

All of my communication with Ryan occurred over email. His emails are short and to the point, in a way that I appreciated. Since I was looking for someone to proactively provide me with a lot of information, this wasn't the right fit for me, but it seems great if you already have a good sense of what kind of policy you want and are just looking for someone to help you with the paperwork with no fuss.

Further comments

Ryan Archer State Farm is only licensed in Texas and California. I was told that they'd still be able to cover my family members in Wisconsin, but we'd need to list my (California) address for them on the forms. My guess is that this isn't actually sketchy, but I wasn't comfortable with it, so I decided not to go ahead with them.

The firm also offers services in Spanish. If you can read LessWrong you're almost certainly not a person who needs Spanish-language services, but maybe you have family members who are.

Note that I got a lot less information about this option compared to the two others, due to not having any calls with their agents.

TL;DR

- Effective, to-the-point communication.
- Good if you already know what you want (and want to get it through State Farm).
- Only really an option if you're in Texas or California.
- Offers services in Spanish.

Agents I didn't work with

CI-recommended agents (USA)

In addition to recommending Ben Archer State Farm and Rudi Hoffman, [CI recommends Michael Flower](#), [Jeff Hansen](#), [Bradley Holland](#), and [Joseph Kowalsky](#) in the US. Because I had already chosen Alcor before beginning the life insurance process, and because I'm not a maniac who wants to spend another 20 hours of my life interfacing with insurance agents I already know I'm not going to work with, I didn't look into any of their services. If you've worked with any of them, please let me know your thoughts!

Non-USA insurance agents

Alcor recommends [Ray Zadrey](#) in Canada and [Chris Morgan](#) in the UK. CI recommends [Serge Vallée](#) and [Josee Mainville](#) in Canada and [Graham Holliday](#) in the UK. I also know a cryonicist who's gone through [Carla Wojciechowski](#) in Canada. Again, let me know if you've used any of these people's services!

#4.4: The insurance underwriting process

This is post 8 of 10 in my [cryonics signup guide](#), and the last of five posts on life insurance. Underwriting is not a complex or interesting topic, but I'm including this brief writeup in the sequence for the sake of giving readers a complete picture of the life insurance process from start to finish.

What is underwriting?

In the world of life insurance, 'underwriting' basically just means 'approval'. The life insurance company needs to check your health to make sure that it's charging you the right amount.

To this end, they want to know your family health history, your own medical history, and any hazards you're regularly exposed to (e.g. smoking tobacco, extreme sports, workplace hazards). They may also want to know your income in order to determine whether you're able to afford the premiums.

Older and unhealthier people are at higher risk of dying soon, which means the insurance company will probably need to pay out their death benefit sooner. So assuming (as a toy model) that the company wants to extract the same amount of money from every client over the course of the client's lifetime, they will need to charge more money per month to old and unhealthy people due to the compressed timeline.

What to expect

If you're young and have no health problems, the underwriting process should be quick and easy – just a phone call and a few weeks of waiting. If not, they'll look at your medical records and possibly examine you in person, and there will be a couple additional weeks of waiting tacked on.

The process

Submitting an application

You'll have a face-to-face meeting or video call with your insurance agent where they send you some forms and watch you sign them. In order to apply, you'll need:

- Your social security number
- Your driver's license number
- Your bank information
- The name and SSN for a contingent beneficiary (the person or organization who receives the death benefit if your cryonics provider can't take it for any reason)

Phone interview

Once you've submitted your application, your insurance company (or a third party that the insurance company contracts with, such as ExamOne) should call you within two business days to conduct the phone interview. The call will take about 30 minutes. They will ask you about:

- Your past and current medical history
 - Names, addresses, and phone numbers of physicians and hospitals from which you have received medical care within the last 10 years
 - Names and dosages of prescription medications you are currently taking and for what purpose
- Your family medical history
- Your employment status, income, and net worth
- Lifestyle factors such as tobacco use, driving record, foreign travel, and recreational activities
- Existing amounts of life insurance in force or applications pending with other companies

Importantly, you should *not* volunteer any extra information beyond what is needed to answer their specific questions honestly. For example, when they say, "Anything else?", you should *not* say "Well, sometimes I feel really tired and I don't know why" or "There's a mole on my hand that I'm kinda worried about" or "I get sad sometimes but I've never been to a doctor to get tested for depression." If you haven't been diagnosed with or treated for a thing, they don't need to know about it.

If you seem healthy to them, great, now all you have to do is wait. If they find any reason for concern, they will dig deeper, which brings us to:

Releasing your medical records

The underwriting agency may ask for your medical records, including all test results, prescriptions, and diagnoses. In my case, they wanted to look at the last five years. This is a pretty hands-off process on your part; all I had to do was sign a release form with my doctor's office.

Medical exam

How does it work?

People over the age of ~40, and anyone whose health they decide to scrutinize, will be subject to a pretty standard medical exam. You can either go into an office for this exam or have an examiner come to you at home. They say you'll need a photo ID and current health insurance cards, but my examiner didn't ask me for any health insurance info.

I had someone come to my home and conduct the exam outdoors for COVID safety. The whole thing took about 45 minutes but it would probably take less long than that on a less muddy and windy day.

What will they measure?

The examiner will measure your height and weight, take your pulse, measure your blood pressure, and take samples of blood and urine. In some circumstances, there may also be an EKG component. For your blood, they claim to only be looking at cholesterol levels, blood sugar levels, and kidney and liver function.

In addition to the exam itself, they may also ask you some redundant questions, such as what medications you take, your health history, and how much you exercise. Information you should volunteer:

- Any history of problems associated with providing a blood sample
- Whether you're currently menstruating

Waiting

The vast majority of the underwriting process is just waiting. In the best case, where you complete the phone interview promptly and don't need any further scrutiny, you'll wait for about six weeks.

Final steps

After the carrier approves your policy, they'll send it to your life insurance agent, who will walk you through all the details. If you're satisfied, all you need to do is sign the policy and send it to your insurance provider.

#5: Making your cryonics arrangements official

This is post 9 of 10 in my [cryonics signup sequence](#).

Once you've got your funding method set up, you're not quite done. You'll need to enter into an official cryopreservation agreement with your cryonics organization, and there are quite a few additional forms you have to fill out in order to make that happen.

Required paperwork

Alcor

Membership application

Fill out the Alcor membership application available [here](#). The application fee is \$300; the default is to pay by card, but you can contact Alcor if you want to use a different payment method.

Cryopreservation contracts

Once you've sent in your membership application, complete with funding method, Alcor will physically mail you the cryopreservation contracts to read and sign. This runs ~60 pages, but it should mostly be information you already know.

You'll need two non-relative witnesses to sign the various documents, and in all states except California, you'll need a notary to notarize your Last Will and Testament for Human Remains.

The packet sent to you by Alcor includes the following [1]:

- [Cryopreservation Agreement](#)
- [Attachment 1 to Cryopreservation Agreement](#)
 - This document formalizes the choices you select on your membership application (e.g. neuropreservation vs whole-body; what to do with any excess funding)
- [Consent for Cryopreservation](#)
- [Last Will and Testament for Human Remains and Authorization of Anatomical Donation](#)

Note that hyperlinks in this section link only to sample forms, not contracts that you should actually try to sign.

Cryonics Institute

Membership application

There are two different forms depending on whether you're applying for an [annual membership](#) or a [lifetime membership](#). The application fee for the former is \$75; there is no application fee for lifetime membership, but there's a one-time payment of \$1250.

Cryopreservation contracts

These are just all the basic legal documents you need; I think CI will send these to you when appropriate. You will need the signature of a notary *or* the signatures of two witnesses.

Main forms to fill out:

- [Cryonic Suspension Agreement](#)
- [Uniform Donor Form](#)
- [Next of Kin Agreement](#)
- [Consent/Release for Cryopreservation](#)
- [Non-Suspension Rider](#)
 - This document stipulates what should be done with your cryopreservation funding in the case that CI is unable to carry out your cryopreservation

You may also want or need to fill out the following, depending on your situation:

- [Local Help Rider](#)
 - Stipulates that any funding provided beyond the minimum will be used by CI to pay for the costs of the member's funeral director and shipping
- Yearly Membership Rider
 - Agreement that Yearly Members must pay their dues in full in a timely manner or their Cryonic Suspension Agreement will be void
- [Foreign Funds Rider](#)
 - An attempt to ensure that funding for cryopreservation that is not denominated in US Dollars does not fall below the allotted minimums because of fluctuations in exchange rates

Again, hyperlinks in this section link only to sample forms, not contracts that you should actually try to sign.

Congratulations!

Once you've done all that paperwork and are officially signed up, your cryonics provider will send you a membership packet containing a medical necklace and a medical bracelet. You should wear these at all times in case you're ever in a fatal accident; paramedics know to check for medical bracelets, and the tags inform them of how to treat your body until a standby team arrives.

If you live outside of the US or regularly travel internationally, ask your cryonics organization to send you tags that have a phone number with the American country code prefix on it.

Ongoing maintenance

In order to actually get cryopreserved when it counts, you'll need to keep your cryonics organization updated on any major changes, and keep abreast of updates on their end as well. Here's a brief sample of what ongoing maintenance means:

- Any time you move, let your cryonics organization know what your new address is.
- Alcor no longer grandfather its members into the price at their time of signup, so if preservation costs increase, you'll need to make sure you're still funding at an adequate level.
- If you've executed [advance directives](#), review them regularly to make sure that they still express your wishes accurately.
- Let your cryonics organization know right away if you develop a potentially fatal condition.
- If you're funding with a non-guaranteed life insurance policy, check its performance every ~5 years to make sure that it's on track to cover your preservation costs.

[1] A previous version of this post also listed [Emergency Standby Provisions](#) + [Attachment 1](#) and Alcor's [Buy-Back Agreement](#) here. However, upon receiving my packet I found that these were not included or mentioned anywhere, so I'm assuming they're outdated.

#6: Optional additional steps

This is post 10 of 10 in my [cryonics signup sequence](#).

Introduction

The preceding posts cover everything you need to be fully signed up for cryonics. However, there are a lot of additional steps you may want to take to give yourself the best chance at optimal conditions for cryopreservation.

Why do any of this?

As I've emphasized [before](#), any delay in your cryopreservation is to be avoided as far as possible – so any social or legal dispute could jeopardize your successful preservation. In at least [one case](#), an Alcor member was dead and buried for two full months before Alcor even knew he had been ill. Needless to say, you don't want that to happen to you – your organs will definitely not be in optimal condition if that happens.

Essentially, you want to put yourself in a social and legal position such that your cryopreservation won't be blocked by distraught or confused family members, medical professionals, lawyers, or coroners. Pursuant to this, you should communicate your intentions clearly to all stakeholders, codify your wishes in legal documents, and not give anyone financial incentive to interfere with your cryopreservation.

See more on these precautions from [Alcor](#) and [CI](#).

Do I have to do *all* of these things?

I've listed things in order of how important they seem to me – standby is first because, [as I've discussed](#), not making standby arrangements is a great way to incur a ton of ischemic damage. I also think everyone should execute healthcare advance directives if possible, and everyone should at least make sure their family is aware of their intentions.

My family and friends are very much onboard with cryonics, so I'm not worried about anyone interfering with my cryopreservation. But it seemed so easy to have people sign Relative's Affidavits that I figured I would do it anyway. I'm not, however, making a video explaining my intention to get cryopreserved – that seemed unnecessary. I'm also young and healthy, and I don't have a relationship with an attorney, doctor, or coroner, so I'm not talking to any of those people.

The final two points – getting your family members signed up, and bringing assets into the future – feel very much optional.

Standby arrangements

As [mentioned](#) in previous posts, signing up for cryonics via CI does not automatically sign you up for standby. If you want standby, you can get a contract with Suspended Animation (see [this page](#) on CI's website) or make your own arrangements with a local funeral director or volunteer standby group. Alcor members – especially those located outside of North America – may also be interested in the latter due to the inherent limitations of centralized standby.

If you're interested in making your own arrangements, I recommend seeking out online discussion groups and/or connecting with other cryonicists in your area; I can't personally offer any advice because I've never done this.

Communicating your intentions to your family

Most legal cases involving cryonics are brought by a family member of the patient, who wishes to dispute the cryopreservation. In some cases this is because the patient's children want to inherit the patient's money rather than having it go to Alcor, but it may also be because the family was unaware of or confused about the patient's wishes.

Because your family by default has so much say over what happens to your body and estate after you die, it's important that you **explain to them your wish to be cryopreserved**. Ideally do this as soon as possible, and not when you're on your deathbed.

Your family may or may not be receptive. If they're not, CI recommends that you "Consider removing hostile or nonsupportive next of kin from control of your estate and your remains legally in advance of your legal death so that hostile people can be disempowered from making decisions you might otherwise disagree with."

Paperwork for relatives

If your family members are receptive, you should have them sign affidavits promising not to interfere with cryopreservation activities upon your death. Alcor's version of this is a [Relative's Affidavit](#); CI's is the [Next of Kin Agreement](#). Alcor says that a Relative's Affidavit "is a very effective way to protect you."

Financial incentives

Consider who stands to gain financially from your provider failing to cryopreserve you. For example, if you name a nonsupportive family member as the contingent beneficiary of your life insurance policy, that person will stand to gain tens or hundreds of thousands of dollars by blocking your cryopreservation. Review your will, cryopreservation agreement, life insurance policy, and any other relevant documents to make sure you're avoiding situations like these. You may also want to look into "no contest" clauses.

Protecting yourself in medical emergencies

Max More and Chana Phaedra have already [explained this well](#):

Even if you have no risk of a third party preventing you from being cryopreserved, you may not be in optimal condition for cryopreservation if you do not take care to minimize certain risks. Particularly in certain medical scenarios, you may wish to avoid extreme life-saving attempts or measures that may place you at high risk of prolonged or repeated ischemic insult and brain damage.

This section deals with what you can do to avoid such situations, including executing advance directives, and registering your desire to not undergo an autopsy. Read more on this topic from [Alcor](#) and [Cl](#).

Healthcare advance directives (USA)

The two advance directives you should fill out are a **Living Will** and a **Durable Power of Attorney for Health Care**. The exact requirements vary from state to state; generic state-specific documents can be obtained for free [here](#) or [here](#).

Alcor has a Cryonics Medical Power of Attorney form which is valid in most US states; **click [here](#) for the PDF or [here](#) for an editable version** (just make a copy of the Google doc). I also found [this](#) outdated Cryonics Living Will that might be a useful reference.

After you have executed your advance directives, send copies to your cryonics organization so that they know who has your power of attorney in an emergency. Also give copies to your healthcare provider and attorney.

Living Will

A Living Will is not actually a will; it's a document that records the kind of medical intervention you want to receive if you are unable to communicate your wishes due to mental or physical incapacity. While hospitals sometimes ignore a Living Will, it's useful to have one because it protects healthcare providers from liability if they carry out your wishes.

In some states it may not be possible to spell out your desire to be cryopreserved in a Living Will; in those cases your Living Will should just refer to your Durable Power of Attorney for Health Care for the details of your wishes. This also ensures that the two documents don't contradict one another.

Durable Power of Attorney for Health Care

Alcor's explanation is good:

In a Durable Power of Attorney for Health Care, which is by far the more powerful of the two documents, you give someone you trust the power to make medical decisions for you in the event that you are incapacitated and unable to make such decisions yourself. This person is your medical surrogate, also known as a health

care agent. The surrogate can make health care decisions with the same authority as if you made them yourself, including decisions regarding withdrawal of life support. Therefore you should be extremely careful about your choice. You should also consider naming a secondary surrogate in case your first choice is unavailable.

We offer these suggestions:

1. Your surrogate should be younger than you and in good health, to maximize the chance that he or she will outlive you.
2. If you wish to be cryopreserved after death, your surrogate should be fully informed about cryonics and very sympathetic toward cryonics.
3. Choose someone who is smart, highly motivated, and has good social skills. You don't want your surrogate to alienate or antagonize medical personnel.
4. Although it is common to choose a spouse or close family member as your surrogate, you may choose any other person as well. If you do not choose a family member, that person should not be a beneficiary in your will who might benefit, or appear to benefit, from your death.
5. Your surrogate cannot be an officer or employee of your cryonics organization (but may be a member of your cryonics organization).

Note that if you do not choose a medical surrogate, your closest next of kin will have that power by default. Even if you trust this family member to exercise medical judgment wisely, you should still give that person explicit power of attorney.

Hospitals can sometimes ignore a Living Will, but they find it much more difficult to ignore someone with Durable Power of Attorney for Health Care.

The question of resuscitation

Again via Alcor:

On one hand, cryonicists hope that medical staff will not prolong life unnecessarily if this will increase the risk of brain damage. Very often, a patient who is near death may have low oxygen saturation, which could injure brain cells if it continues for a long period. On the other hand, your cryonics organization will want to be nearby to take immediate action after legal death is pronounced. If Alcor has not had time to deploy a team, or if you are in a remote area, you may want medical staff to prolong your life until the team can arrive.

Recognizing this dilemma, you could consider putting a statement in your advance directives such as, "If I am in a vegetative state, I wish life support to continue, but only until the Alcor standby team is on-site and has stated that it is ready. If I experience cardiac arrest after the Alcor standby team is ready, I do not wish to be resuscitated."

Certificate of Religious Belief Objecting to Autopsy (some US states)

Autopsies are really bad for your prospects of successful preservation, because they not only introduce a lot of ischemic time, but may also directly damage your organs, including your brain.

In [California](#), [Maryland](#), [New Jersey](#), [New York](#), and [Ohio](#), you can file a "Religious Objection to Autopsy", which should significantly decrease the probability of an autopsy being performed on your body. In other states, you will need to rely on your relatives, your cryonics organization, and the person with your Durable Power of Attorney for Health Care to advocate for your wishes.

Alcor provides more details on avoiding autopsy [here](#) and [here](#).

Communicating your intentions to other parties

Discuss cryonics with your doctor, attorney, and local coroner or medical examiner

These are all parties that may be involved in your death and the execution of your will. You don't need to have long discussions with them where you discuss the philosophical implications of cryonics or whatever; they just need to be aware of your intentions and how that concretely affects them.

Alcor says: "The best way of assuring that your wishes will be honored is to find a sympathetic doctor who has agreed to honor your wishes in advance. At the very least, make sure your doctor has copies of your advance directives, and that your hospital is given copies on admission."

Change your will

If you have made a will, make sure that it doesn't contain any statements that conflict with your desire for cryopreservation. For example, my mom's original will stated that she wanted to be cremated; something like this could present an obstacle to her successful cryopreservation.

If you don't have a will, now is a good time to make one. Ideally your will should include a section explaining and affirming your outlook on cryonics and your desire for cryopreservation after legal death.

Make a video

Alcor says that, in case of any dispute, "a video is the best possible evidence that you made a fully informed decision." They encourage you to "make a short video in which you describe your desire for cryopreservation calmly, rationally, and firmly." You should send copies of this video to Alcor, your attorney, and the person who has your Durable Power Of Attorney For Health Care.

They also encourage you to make the video with at least two witnesses present, and to "make a new video at least every five years to reaffirm your preferences and prevent anyone from suggesting that your video was obsolete because you changed your mind after you made it."

Getting your family members signed up

If you've talked to your family members about cryonics (as recommended above) and they seem receptive to it, why not bring them to the future with you? You already know how the signup process works, having gone through it yourself, and family of existing members are eligible for certain discounts from both Alcor and CI.

Even if you don't get along with your family, surely there's someone who you'd like to bring with you. I'm not nearly as passionate about cryonics as the time I've spent on this sequence would suggest, but I do strongly believe that death is bad. If you love people, you probably want them to not die. So I'm really lucky that my mom and sister are signing up with me, and that several other people I know are signed up already.

See more at <https://www.alcor.org/library/signing-up-your-relatives/>.

Bringing assets into the future

Assuming things like currency and physical possessions still exist when you wake up, you probably want to have some of those.

Creating a revival trust

I was not super interested in this myself, not being much one for finances or believing in a future where things are sufficiently similar to now that this will matter, so instead of my usual detailed explanation, I'm going to give you a vetted list of links on this topic.

Preserving assets

If you're signing up with Alcor, they have some existing structure in place for this:

- Alcor's [Multi-Investor Future Income Trust](#) (minimum of \$25,000)
- Alcor's [Asset Preservation Trust](#) (minimum of \$500,000)

If you're signing up with CI, consider going through [ACS](#) - you'll still ultimately get preserved with CI, but ACS will establish and manage a reanimation fund for you.

"ACS is [also] willing to hold money in trust or as a fund for individuals who do not have their primary suspension arrangements with ACS" ([source](#)).

Additional information on how to establish a revival trust:

- John Dedon: "[Preserving Assets in Trusts for Clients Considering Cryonics](#)"
- John Dedon: "[How to Take It With You](#)"
- John Dedon: "[Functions of a Trust Protector during Biostasis and at the Time of Cryogenic Revival](#)"
- Rick Durfee: "[Cryonics Suspension Trust: The Ultimate Estate Freeze](#)"
- Rudi Hoffman: "[The Hoffman Prototype Trust, and Ideas Regarding Cryonics Estate Planning](#)"

Preserving a legal identity

My insurance agent also said that "in order to have an identity in the future, you must have a trust established that preserves some form of your identity (such as a social security identity)." But, he also said some other things about the far future that I thought were pretty confused, so that might be totally wrong. (To be clear he's great at his job; this is not really part of his job.)

See also Christopher Sega's "[Possible Legal Rights of Cryogenically Revived Persons](#)."

Memorabilia storage

Alcor and CI both allow you to store personal effects as a sort of rider on your cryopreservation. You can store letters, videos, hard drives, whatever you want.

Cryonics Institute

CI requires members to sign a [Memorabilia Storage Agreement](#) and pay \$1000 cash upfront, non-refundable.

Alcor

Alcor offers every member one 10"x12"x15" box for free and charges \$250 for each additional box. You can also contribute items to storage for members already under cryopreservation at Alcor. Alcor Memory Boxes are kept in an underground commercial storage facility in Kansas.

Appendices to cryonics signup sequence

This post is for reference and is not intended to stand alone. It may be periodically updated with additional appendices.

Appendix A: Cryonics and x-risk timelines

Over the past few years, some people have updated toward pretty short AGI timelines. If your timelines are *really* short, then maybe you shouldn't sign up for cryonics, because the singularity – good or bad – is overwhelmingly likely to happen before you biologically die. But I bet you don't really believe that. You could already have terminal cancer and not know it, or you could get hit by a car next year. If the singularity is positive and results in the revival of those who got cryopreserved before it happened, then even if you expect the singularity in like, two years, you really should sign up without delay if there's *any* chance you might die before then (spoiler alert: there is).

Alternatively, you might think that if timelines are longer than your lifespan it will be because of some specific future sign (like a clear AI winter or a world war), and you think it's a better tradeoff to buy cryonics exactly when that sign shows up.

This particular point seemed like an important one to flag, since this is one of the big ways a lot of rationalists' models have changed since those older cryonics posts came out, and we don't want people to make decisions wrongly based on cached thoughts.

Appendix B: Non life insurance payment options

Alcor

In addition to life insurance, Alcor's membership application lists (1) ~~trust~~, (2) **prepayment**, (3) **annuity**, and (4) other means. These all fall under the umbrella of 'self-funding.' CI lets you pay in these ways as well.

Trust

The [Alcor Standard Trust](#) "has been fully approved by Alcor ... and is therefore immediately available in its existing format and content. [It] is designed to be entirely autonomous from a member's estate, to provide secure Alcor membership funding."

You can fund a trust with stocks, treasury bonds, life insurance, federally insured money market funds, cash, or other assets approved by Alcor. Linda Chamberlain (Co-Founder of Alcor) is the head of the Trust Department and can guide you through the Trust Approval Process.

Update 9/2022: A commenter [reports](#):

I just contacted Alcor about paying with a trust and they wrote back "Alcor does not accept Cryopreservation Funding Trusts at this time." It seems like life insurance and prepayment are the only options.

Prepayment

If you have a bunch of cash lying around, like, way more than you'll ever ever need, you can prepay out of pocket for your cryopreservation – just give the money to your cryonics provider. They'll keep a portion of it for when you wake up, but for the rest of this lifespan, you just won't have access to that money anymore.

As far as I can calculate, this option is *never* cheaper than using life insurance, so you should only do it if you are uninsurable (e.g. if you have already been diagnosed with a terminal illness) or if you're in a huge hurry (e.g. you have less than six months left to live)...

...or, I suppose, you could do it if a lump sum of a few hundred thousand dollars is something it doesn't hurt you at all to give away, and you have literally no other use for the money – not even to leave it to family or charity in your will.

Annuity

I don't really understand what an annuity is in this context, although I'm pretty sure it's a thing that's paid in installments. If you want to pay with an annuity, contact Rudi Hoffman.

Cryonics Institute

CI just has their own [whole page on this](#), which I recommend you check out; there's not much point in me just reproducing it all here. Their ways of funding are:

- Revocable trust
- Transfer on Death account
- Prepayment
- Prepayment to a third party

CI shares a long message from a member John de Rivaz on their funding page, under the heading "Is life insurance the best way to fund a contract?", suggesting that they recommend funding a CI contract through an investment trust. (For legal reasons, they can't officially endorse de Rivaz's investment advice – same as how HR people will always say "this is *not tax advice*, but...").

Appendix C: Additional resources

Let me just say that it is damn hard to stay on top of linkrot. 80% or more of the links I followed for this section were either broken or just horribly outdated (e.g. forums that hadn't been updated since 1997). I've used links to the Wayback Machine where possible, but a lot of these pages are dynamic (forums and news updates) or are useful because they link to a lot of other resources, and I didn't have the time to make sure every single linked resource was in turn archived.

International Cryonics Groups:

Europe:

- Belgium: [Cryonics Belgium](#)
- Finland: [Suomen Kryoniikkaseura](#) (KryoFin)
- Germany: [Cryonics Germany](#), [German Society for Applied Biostasis](#)
- Greece: [Greek Cryonics Society](#)
- Italy: [Associazione Italiana Crionica](#)
- Netherlands: [Dutch Cryonics Organization](#)
- Portugal: [Alcor Portugal](#), [Cryonics Portugal](#)
- Switzerland: [CryoSuisse](#)
- UK: [Cryonics UK](#)

Elsewhere:

- Australasia: [The Cryonics Society of Australasia](#)
- Southern hemisphere: [Southern Cryonics](#)
- Québec: [CryoQuébec](#)

Likely-outdated email contact info for additional groups available [here](#).

Discussion groups:

- [r/cryonics](#)
- [Alcor Member Forums](#)
- [LessDead.com](#)
- [Longecity](#)
- [Young Cryonicists Facebook group](#)

Informational websites:

- [Alcor News Archive](#)
- [Alcor's Library](#)
- [Ben Best's FAQ](#)
- [Chronopause](#) ([Mike Darwin](#)'s blog)
- [CI News Archive](#)
- [CI's Media Library](#)
- [CI's Resource Library](#)
- [CryoNet](#) (forum archive)
- [Cryonics Europe](#) (not up-to-date, but still useful)
- [The Cryonics Society](#)
- [Cryonics Wiki](#)
- [LessDead wiki](#)
- LessWrong's [cryonics tag](#)
- [r/cryonics wiki](#)
- [Ralph Merkle's website](#)
- Scientific articles on cryonics ([Alcor](#), [PubMed](#))

Informational articles:

- [A History of Cryonics](#) by Ben Best
- [A Physician Considers Cryonics](#) by Dr. Steven Harris
- [Timeline of brain preservation](#)
- [Wikipedia entry on Cryonics](#)
- [Why Cryonics Makes Sense](#) by Tim Urban