CRYONICS INSTITUTE MAGAZINE

Cryonics insights and information for members and friends of the Cryonics Institute

PUBLISHED BY THE CRYONICS INSTITUTE | ISSUE 01 | 2026

cryonics.org • info@cryonics.org • 1 (866) 288-2796

PRESIDENT'S REPORT

It is my honor to present this issue's President's Report to the membership. As we mark another year of steady operations, we also approach a landmark moment for the organization: the 50th Annual General Meeting on September 12–13, 2026. This milestone is a tribute to decades of volunteer effort, scientific curiosity, and the continual commitment of members and staff to preserving human life for future restoration.

Membership & Operations

Membership remains the backbone of CI. As of June 2026 the Institute counts 2,327 members worldwide, of which 288 are already cryopreserved; this represents more whole-body patients than all other cryonics providers in the world combined. Our facilities in Clinton Township continue to operate 24/7 with robust protocols for standby, transport, and long-term liquid nitrogen storage. Recent operational improvements include upgraded monitoring systems for cryostats and expanded logistical partnerships that reduce response times and out-of-state transport costs.

Research & Development

CI maintains an active interest in cryobiology research and practical improvements to vitrification and stabilization practices. Ongoing collaborations with external laboratories have advanced our understanding of tissue preservation and improved handling procedures. CI-VM-1 remains the premier formula used by most cryonics service providers to vitrify human tissues, and incremental refinements to perfusion protocols have reduced osmotic stress in recent cases. We continue to prioritize research that can be directly translated into better patient care and longer-term viability.

Finances

The Institute's finances remain sound. Our revenue stream continues to be generated primarily from membership dues, prepayments, and donations. Cost control measures implemented over the last fiscal year—particularly in transport logistics and facility maintenance—have helped preserve reserves while keeping whole-body cryopreservation fees the most affordable in the field. Detailed financial statements will be presented at the AGM and are available to members for review.

Values and Service Philosophy

CI delivers high-quality, no-frills cryonics with a focus on value and effectiveness. We prioritize robust, scientifically grounded procedures that maximize the chances of future recovery without unnecessary extras. If you presume that higher price automatically equals better outcomes despite limited supporting data, CI may not match that perception; our approach is instead to provide the best possible return on investment and the strongest practical chance of survival within an affordable model. We are known for meeting rigorous operational standards while keeping member budgets in mind.

50th AGM Highlights

The 50th AGM on September 12–13, 2026, will be a focal point for reflection and forward planning. Agenda items include: presentation of audited financials; a member vote on proposed bylaw updates to streamline governance; an operations review with new emergency response goals; and a research forum featuring guest speakers. We will also honor long-serving volunteers and staff whose sustained efforts have made this milestone possible. The event will be recorded for members who cannot attend.

Closing

Our mission—to offer hope through scientifically informed preservation—remains unchanged. As we celebrate fifty years, CI is both steward of a rare institutional memory and a living organization adapting to contemporary challenges. I am grateful to our members, volunteers, scientific partners, and staff for their continued dedication. I look forward to discussing our progress and plans at the 50th AGM and to building another decade of responsible, accessible cryonics service.

Respectfully submitted,

Dennis Kowalski
President, Cryonics Institute
June 12, 2026

CRYONICS INSTITUTE MAGAZINE
The digital newsletter of the Cryonics Institute
24355 Sorrentino Ct.
Clinton Township, MI 48035-3239

Phone: 1 (586) 791-5961
Toll-free: 1 (866) 288-2796 (North America)
FAX: 1 (586) 792-7062
Email: **info@cryonics.org**

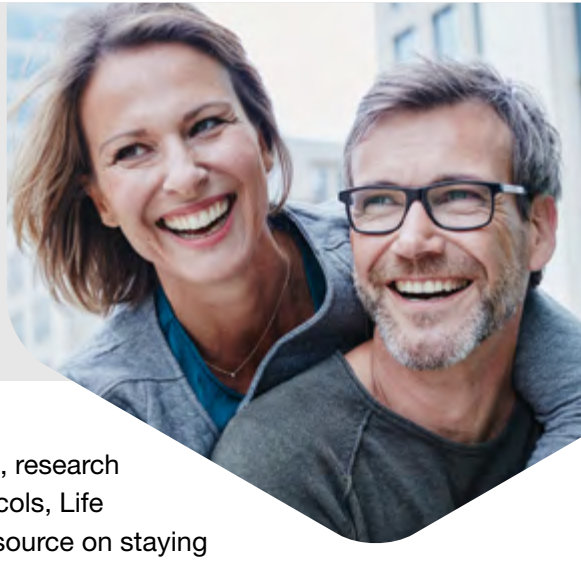
ARTICLE SUBMISSIONS

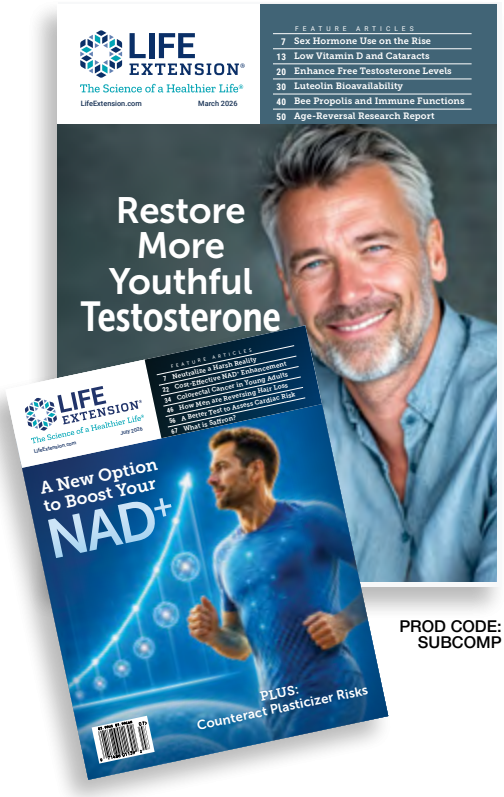
Cryonics Institute or cryonics-related articles are welcome. Submissions: **dg@cryonics.org**

E-SUBSCRIPTIONS

* As a CI member, you are automatically added to our email reminder list. To unsubscribe, please use the "unsubscribe" link at the bottom of your email.

Get our premier publication on prolonging youth & longevity for ONE YEAR, ABSOLUTELY FREE!





PROD CODE: SUBCOMP

Packed with the latest medical findings, research results, and innovative treatment protocols, Life Extension Magazine® is the ultimate resource on staying healthy and living longer. Call now and get a one-year subscription (12 issues) absolutely **FREE**...that's a whopping **$59.88 off** the newsstand price! And it's brought to you by the global leader in the field of preventing age-related disease for over 40 years.

Stay healthy with high-quality supplements.

Life Extension is dedicated to helping you live a longer, healthier life. Our premium-quality products are based on the latest clinical studies—made with pure, quality ingredients at the same scientifically validated dosages used in those studies—providing superior products for a better you!

Don't just guess what your body needs.

Our expert team of Wellness Specialists can answer your health-related questions every day of the year. And they'll gladly create a regimen of nutritional supplements, diet, and exercise that's customized for your needs.

Get more with LE Rewards.

With our FREE rewards program you earn points on every purchase you make.* No membership required. For details, visit **LifeExtension.com/Rewards**.

Subscribe to Life Extension Magazine® for **FREE** today!

Call toll-free **1-888-223-1912** to speak to a live operator at any time.

Or, go to **LifeExtension.com/CI**.

Use code TPF2601A to get these savings • Offer expires June 30, 2027

LIFE EXTENSION®

The Science of a Healthier Life®

These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.

*Earn points on all Life Extension purchases (except shipping fees, Life Extension Magazine® subscriptions, LE Rewards program fees, and purchases made with points or gift cards). Redeem points to purchase products, lab tests, sale items and shipping fees at the rate of 100 points equal to $1 U.S. dollar at checkout. Points may not be redeemed for LE Rewards PREMIER PLUS or ELITE program fees or purchase of gift cards or Life Extension Magazine® subscriptions. Points have no cash value and are not redeemable for cash, transferable, or assignable for any reason. Offer not available to international customers serviced by distributors of Life Extension products. Prices subject to change without notice. Cannot be combined with any other offer. Magtein® is protected under a family of patents, pending patents, and is protected worldwide. Magtein® is a trademark of and is licensed exclusively by ThreoTech LLC.

MKAQTP260501

Membership Benefits

Why join the Cryonics Institute?

The choice is clear: Irreversible physical death, dissolution and decay, or the possibility of a vibrant and joyful renewed life. Don't you want that chance for yourself, your spouse, parents and children?

1) A Second Chance at Life

Membership qualifies you to arrange and fund a vitrification (anti-crystallization) perfusion and cooling upon legal death, followed by long-term storage in liquid nitrogen. Instead of certain death, you and your loved ones could have a chance at rejuvenated, healthy physical revival through cryopreservation.

2) Affordable Cryopreservation

The Cryonics Institute (CI) offers full-body cryopreservation for as little as $28,000.

3) Affordable Membership

Become a Lifetime Member for a one-time payment of only $1,250, with no dues to pay. Or join as a Yearly Member with a $75 inititation fee and dues of just $120 per year, payable by check, credit card or PayPal.

4) Lower Prices for Spouses and Children

The cost of a Lifetime Membership for a spouse of a Lifetime Member is half-price and minor children of a Lifetime Member receive membership free of charge.

5) Quality of Treatment

CI employed a Ph.D level cryobiologist to develop CI-VM-1, CI's vitrification mixture which can help prevent crystalline formation at cryogenic temperatures.

6) Standby Options and Assistance

CI's use of Locally-Trained Funeral Directors means that our members can get knowledgeable, licensed care. Or members can arrange for professional cryonics standby and transport by subcontracting with **Suspended Animation, Inc** or **International Cryomedicine Experts** (I.C.E.) Ci also offers Standby Training Materials and Kits for members who choose to perform Local Standby.

7) Affordable Funding Options

Cryopreservation with CI can be funded through life insurance policies issued in the USA or other countries. Prepayment and other options for funding are also available to CI members.

8) Cutting-Edge Cryonics Information

Members receive a free e-subscription to the Cryonics Institute Newsletter, as well as access to our Facebook page, Twitter feed, YouTube channel and an official members-only forum.

9) Helpful, Professional Support

CI's professional staff is available to answer any questions and address any concerns you may have about CI, your membership or Cryopreservation.

10) Additional Preservation Services

CI offers a sampling kit, shipping and long-term liquid nitrogen storage of tissues and DNA from members, their families or pets for just $98.

11) Support Education and Research

Membership fees help CI to fund important cryonics research and public outreach, education and information programs to advance the science of cryonics.

12) Member Ownership and Control

CI Members are the ultimate authority in the organization and own all CI assets. They elect the Board of Directors, from whom are chosen our officers. CI members also can change the Bylaws of the organization (except for corporate purposes).

CRYONICS INSTITUTE
Technology for Life

To get started, contact us at:

(586) 791-5961 • email: info@cryonics.org

Visit us online at www.cryonics.org

CI NEWS

What's happening at the Cryonics Institute

— SAVE THE DATE —

CRYONICS INSTITUTE 2026 ANNUAL GENERAL MEETING

& *50th Anniversary Celebration*

— TWO-DAY EVENT —

Saturday, Sept 12

CI FACILITY
24355 Sorrentino Court, Clinton Township, MI

Facility Tours: NOON-2:00

Annual Meeting: 2:15-3:15

President's Remarks
Financial Report
Election Results

Immortalist Society: 3:30-4:00

Casual "Night Before" Dinner: 6:00-CLOSE

INFINITY HALL & SIDEBAR
16650 E 14 Mile Rd, Fraser, MI

(Please note, dinner guests will be responsible for their own checks)

Sunday, Sept 13

FORD HOUSE
1100 Lakeshore Rd
Grosse Pointe Shores, MI

Anniversary Celebration & Dinner Event: 3:00-7:00

Featuring special presentations, dinner and drinks to celebrate CI's milestone 50th Anniversary

RSVP Required
by August 28 to reserve dinner

See you there!

CI NEWS

What's happening at the Cryonics Institute

Proof of Funding Reminder for Contracted Members

A reminder to all CI members with contracts. Please remember that CI requires updated proof of contract funding at least once a year for our members contracts to be in force. If we do not have proof of funding on file that is less than one year old, your contract is not considered to be in force, even if your funding may still be in place. The only exception to this requirement is for our members that have prepaid their cryonic suspension fees to CI.

The proof of funding requirement is satisfied by sending (mail, email or fax) a current annual statement for your life insurance policy. If your life insurance company does not provide you with an annual statement, you can request a letter from the insurance company that states that your life insurance policy remains active and in force. You can then send CI a copy of that letter. Another option is to send CI copies of your bank or credit card statement showing that the premiums needed to keep your life insurance policy active and in force are being paid.

If you are funding through a brokerage or bank account, you need to send us a copy of your account statement every six months and documentation showing CI is the primary beneficiary. If you are funding through a certificate of deposit from a bank, you need to send us a copy of your annual bank statement showing the value of the certificate and that CI is a beneficiary.

If you are funding through a trust, you must still send us proof that the funding mechanism for your trust is still in place as described above.

If we get a call that a member has died, we must be able to see proof of funding in the members file that is no more than one year old or we will not accept the member until we can confirm the funding is in place. This can lead to harmful delays that are 100% avoidable by the member as long as the member keeps their funding up to date with CI. If you have questions about this requirement, please contact CI staff.

CI NEWS

What's happening at the Cryonics Institute

Rising Leaders in Biostasis 2026

Scottsdale, Arizona · September 6–8, 2026

YC26 LLC announced the Rising Leaders in Biostasis event, a private gathering for the next generation of people ages 21 to 35 who have made biostasis, or cryopreservation, arrangements. The stated goal of RLB is that attendees leave not just having attended an event, but having formed genuine connections with a group of peers who share a similar long-term outlook and background.

This is not an industry conference or a professional networking event. It is a chance to connect with peers, build real friendships, and spend a focused weekend with others who have also made arrangements and understand the long game, regardless of professional background or prior level of involvement.

Cryonics Institute at RLB

Cryonics Institute Director Lauren Fosco will be a featured speaker at the event, sharing insights from her work with the Cryonics Institute and Biostasis Technologies, with a focus on advancing cryonics operations, research, and long-term technological development.

The event coincides with the 2026 RAADfest event which is being held at the same location.

CI collaborates with Biostasis Technologies

CI is working with Biostasis Technologies who will be serving in a technical advisory role to support the ongoing evolution of CI's cryonics capabilities and to help evaluate, refine, and enhance its operations in light of emerging scientific knowledge, technological advancements, and evidence-based best practices. Through this partnership, CI will assess opportunities for improvement and modernization across its operations, protocols, and research activities.

CRYONICS INSTITUTE
Technology for Life

Member Readiness Checklist

You've signed up for cryonics - what are the next steps?

Welcome Aboard! You have taken the first critical step in preparing for the future and possibly ensuring your own survival. Now what should you do? People often ask "What can I do to make sure I have an optimal suspension?" Here's a checklist of important steps to consider.

- ☐ Become a fully funded member through **life insurance** or easy pre-payments

  Some members use term life and invest or pay off the difference at regular intervals. Some use whole life or just prepay the costs outright. You have to decide what is best for you, but it is best to act sooner rather then later as insurance prices tend to rise as you get older and some people become uninsurable because of unforeseen health issues. You may even consider making CI the owner of your life insurance policy.

- ☐ Keep CI informed on a regular basis about your health status or address changes. Make sure your CI paperwork and funding are always up to date. CI cannot help you if we do not know you need help.

- ☐ Keep your family and friends up to date on your wishes to be cryopreserved. Being reclusive about cryonics can be costly and cause catastrophic results.

- ☐ Keep your doctor, lawyer, and funeral director up to date on your wishes to be cryopreserved. The right approach to the right professionals can be an asset.

- ☐ Prepare and execute a Living Will and Power of Attorney for Health Care that reflects your cryonics-related wishes. Make sure that CI is updated at regular intervals as well.

- ☐ Review the **CI Standby Manual** and other materials designed to help you with you Standby Planning. Also, consider joining or forming a local standby group to support your cryonics wishes. This may be one of the most important decisions you can make after you are fully funded. As they say-"Failing to plan is planning to fail".

- ☐ Always wear your cryonics bracelet or necklace identifying your wishes should you become incapacitated. Keep a wallet card as well. If you aren't around people who support your wishes and you can't speak for yourself a medical bracelet can help save you.

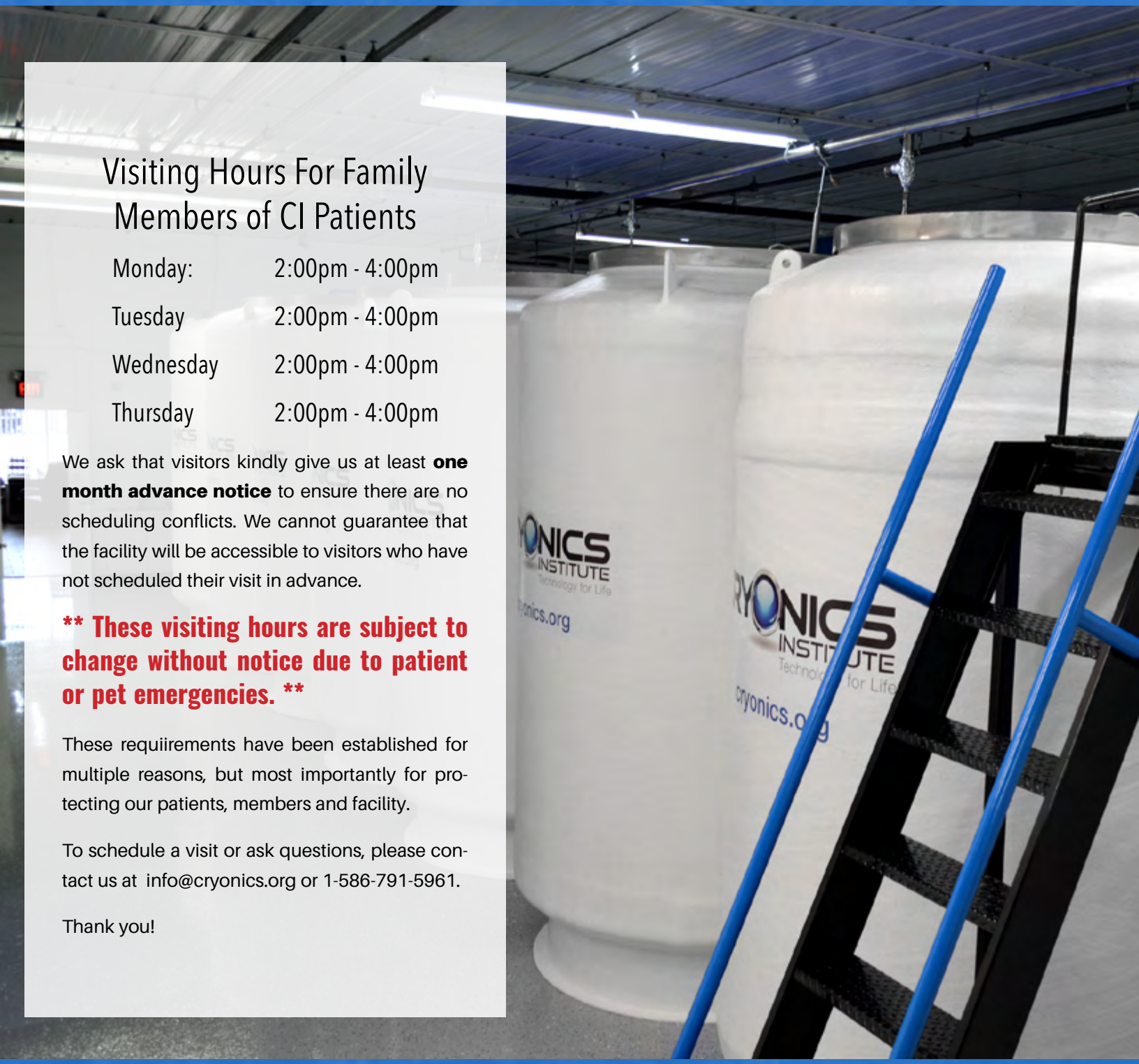
- ☐ Get involved! If you can, donate time and money. Cryonics is not a turnkey operation. Pay attention and look for further tips and advice to make both your personal arrangements and cryonics as a whole a success. The stronger our organization is, the stronger your chances of success.

- ☐ Keep your records, contact information and contracts up to date. It is recommended you review your relevant information annually at a minimum. One way is to schedule time to review all your materials at the same time you submit your required Annual Proof of Funding to CI. Also, Be especially aware of easy to forget things like a new email, phone number or address. Remember, you can also contact us at any time to ask if you have any outstanding paperwork or other info that needs to be updated.

  The online **CI Members' Information Form** is a great resource for updating your current information on file.

CI NEWS

What's happening at the Cryonics Institute



Visiting Hours For Family Members of CI Patients

Monday:	2:00pm - 4:00pm
Tuesday	2:00pm - 4:00pm
Wednesday	2:00pm - 4:00pm
Thursday	2:00pm - 4:00pm

We ask that visitors kindly give us at least **one month advance notice** to ensure there are no scheduling conflicts. We cannot guarantee that the facility will be accessible to visitors who have not scheduled their visit in advance.

**** These visiting hours are subject to change without notice due to patient or pet emergencies. ****

These requiirements have been established for multiple reasons, but most importantly for protecting our patients, members and facility.

To schedule a visit or ask questions, please contact us at info@cryonics.org or 1-586-791-5961.

Thank you!

Who will be there for YOU?

Don't wait to make your plans. Your life may depend on it.

Suspended Animation fields teams of specially trained cardio-thoracic surgeons, cardiac perfusionists and other medical professionals with state-of-the-art equipment to provide stabilization care for Cryonics Institute members in the continental U.S.

Cryonics Institute members can contract with Suspended Animation for comprehensive standby, stabilization and transport services using life insurance or other payment options.

SA Suspended Animation

Speak to a medical representative for more information.

Call 1-949-482-2109

or email info@suspendedanimationinc.com

MKMCAD160205 216

Worldwide Cryonics Groups

AUSTRALIA: The Cryonics Association of Australasia offers support and information for Australia & nearby countries. **caalist@prix.pricom.com.au.** Their Public Relations Officer is Philip Rhoades. **phil@pricom.com.au** GPO Box 3411, Sydney, NSW 2001 Australia. Phone: +6128001 6204 (office) or +61 2 99226979 (home.)

BELGIUM: Cryonics Belgium is an organisation that exists to inform interested parties and, if desired, can assist with handling the paperwork for a cryonic suspension. The website can be found at **www.cryonicsbelgium.com**. To get in touch, please send an email to **info@cryonicsbelgium.com**.

BHUTAN: Can help Cryonics Institute Members who need help for the transport & hospital explanation about the cryonics procedure to the Dr and authorities in Thimphou & Paro. Contacts : Jamyang Palden & Tenzin Rabgay / Emails : **palde002@umn.edu** or **jamgarnett@hotmail.co** Phones : Jamyang / 975-2-32-66-50 & Tenzin / 975-2-77-21-01-87

CANADA: This is a very active group that participated in Toronto's first cryopreservation. President, Christine Gaspar; Vice President, Gary Tripp. Visit **http://www.cryocdn.org/**. There is a subgroup called the Toronto Local Group. Meeting dates and other conversations are held via the Yahoo group. This is a closed group. To join write: **csc5@cryocdn.org**

ALBERTA: Founded in Calgary in 2024, Futurist Club is a cryonics-centered community hub for exploring emerging technologies and future trends, with a facility located in downtown Calgary. Get in touch with Carrie Radomski at **carrie@futuristclub.com** or visit **futuristclub.com**.

BRITISH COLUMBIA: The Lifespan Society advocates for radical life extension. They also organize conferences and educational outreach events on life extension issues. Lifespan welcomes all Canadians as members, although voting in the society is open to BC residents. Contact Robert Lang, President at **robert@lifespanbc.ca**. Web site **www.lifespansociety.com**

QUEBEC: Contact: Stephan Beauregard, C.I. Director & Official Administrator of the Cryonics Institute Facebook Page. Information about Cryonics & perfusion services in Montreal for all cryonicicts. Services available in French & English: **stephan@cryonics.org**

CHILE: Community oriented to provide reliable information on human cryopreservation, as far as technical scientific as well as other practical aspects. Dissemination, awareness and education on issues related to the extension of life in general and cryonics in particular. Contact José Luis Galdames via **galdamesh.jl@gmail.com.**

FINLAND: The Finnish Cryonics Society, (KRYOFIN) was established in 2008 and is an organization collaborating with all nearby groups and organizations. Contact them at: **kryoniikka.fi** Their President is Ville Salmensuu **ville@salmensuu.fi**

FRANCE: SOCIETE CRYONICS DE FRANCE is a non profit French organization working closely with European cryonics groups. For more information: J.Roland Missionnier: phone: 33 (0) 6 64 90 98 41 or email: **cryonicsnews.inpi@gmail.com** • **Facebook group**

https://www.francecryonics.fr/a-propos/ Vivien Gruss, member of Cryonics Institute, has opened a web site for the information of persons interested in cryonic suspension.

GERMANY: DGAB There are a number of Cryonicists in Germany. Their Organization is called "Deutsche Gesellschaft für Angewandte Biostase e.V.", or short "DGAB". More information on their homepage at **www.biostase.de**. If there are further questions, contact their Board at **vorstand@biostase.de**

GERMANY: CRYONICS-GERMANY is an active group providing cryonics support, including a special 8-member Standby Response Team. Members from Germany or Internationally are welcome to join. at **http://cryonics-germany.org**. Direct inquiries to **contact@cryonics-germany.org**.

INDIA: Can help Cryonics Institute Members who need help for the transport & hospital explication about the cryonics procedure to the Dr and authority in Bangalore & Vellore Area. Contacts : Br Sankeerth & Bioster Vignesh / Email : **vicky23101994@gmail.com** Phones : Bioster / 918148049058 & Br Sankeerth / 917795115939

ITALY: Onoranze Funebri Polistena has several locations in Italy and has already sent people to Russia, to Kriorus and also to the Cryonics Institute.

Vitto Claut - tel: +39 335294154

Daniele Chirico - tel: +39 3495146943

Filippo Polistena tel: +39 370 321 0052

https://www.filippopolistena.it/contatti/

https://www.filippopolistena.it/le-nostre-composizioni/fiori-piante-corone-floreali-anche-a-domicilio/

Kriorus Italy: Representative Filippo Polistena, email: filippopolistena45@gmail.com. phone: +39 334 298 9378

JAPAN: Takaaki Kaburagi is President Japan Cryonics Association. Formed in 1998, our goals are to disseminate cryonics information in Japan, to provide cryonics services in Japan, and eventually, to allow cryonics to take root in the Japanese society. Contact **kabu@ops.dti.ne.jp** or **http://www.cryonics.jp**

NEPAL: Can help Cryonics Institute Members who need help for the transport & hospital explanation about the cryonics procedure to the Dr and authorities in Kathmandu. Contact : Suresh K. Shrestha / Email : **toursuresh@gmail.com** Phone : 977-985-1071364 / PO Box 14480 Kathmandu.

THE NETHERLANDS: Dutch Cryonics Organization is the local support group since 2002 and able to provide advice, standby, perfusion and shipment 24/7, in case of need. We are an active group utilizing the latest equipment. New members from The Netherlands welcome.

E-mail: **info@cryonisme.nl**
website: **http://www.cryonisme.nl**

NORWAY : Can help Cryonics Institute Members who need help for the transport & hospital explication about the cryonics procedure to the Dr, funeral home and authority at Sandvika. Contacts : Gunnar Hammersmark Sandvika Begegravelsesbyraa / Phones : 011-47-2279-7736

RUSSIA: KrioRus is a Russian cryonics organization operating in Russia, CIS and Eastern Europe that exists to help arrange cryopreservation and longterm suspension locally, or with CI or Alcor.
Please contact **kriorus@gmail.com** for additional information or visit **http://www.kriorus.ru**. Phone: +7 962 947-50-79

SPAIN: **https://asociacioncrionica.es/** The Spanish Cryonics Association (ACE). A group of enthusiastic civilians, scientists and medical volunteers dedicated to research, education and support in the field of cryonics. We offer information, advice and support to those interested in cryonics including consutation, legal advice, financial planning and veterinary services.

SWEDEN: **www.kryonik.se** or Facebook: Svenska Kryonikföreningen. Initially, the society will focus on providing information and assistance to those who wish to sign up for cryonics. Eventually, we also hope to provide practical assistance in cases, possibly in collaboration with other European groups.

SWITZERLAND: **www.cryosuisse.ch**

CRYOSUISSE The Swiss Society for Cryonics is an active group with over 30 members. To join, **email info@cryosuisse.ch**

UNITED STATES:

Minnesota: Minnesota Cryonics Rapid Response (MCRR) is a nonprofit standby, stabilization and transport group based in Minneapolis, Minnesota. We have a strong, longstanding working relationship with local funeral directors, and have successfully participated in significantly more-timely suspension efforts in Minnesota in cooperation with both Alcor and the Cryonics Institute. Contact: President, Chuck Bartl, **chuckbartl@yahoo.com**.

Washington DC Metro Region: Life Extension Society (LES) is a nonprofit organization of area cryonicists dedicated to enhancing local capabilities for standby, stabilization and transport. Members from both Alcor and Cryonics Institute are welcome. Contact: Mark Mugler, **mugsim2@gmail.com**.

Southeast Wisconsin: Great Lakes Cryonics Association. CI President Dennis Kowalski's cryonics group serving the Greater Milwaukee and Southeastern Wisconsin region. Phone: 1-414-322-1320 **Dennis@cryonics.org**.

Seattle, Washington: Seattle Cryonics is an active community of cryonicists who meet quarterly in person to build local connections and capabilities. Members of all cryonics organizations are welcome. Contact: **seattlecryonics@gmail.com**. Meetup page: **https://www.meetup.com/seattle-cryonics/**

UNITED KINGDOM: Cryonics UK is a nonprofit UK based standby group. **www.cryonics-uk.org** Cryonics UK can be contacted via the following people: Tim Gibson: phone: 07905 371495, email: **tim.gibson@cryonics-uk.org**. Victoria Stevens: phone: 01287 669201, email: **vicstevens@hotmail.co.uk**. Graham Hipkiss: phone: 0115 8492179 / 07752 251 564, email: **ghipkiss@hotmail.com**. Alan Sinclair: phone: 01273 587 660 / 07719 820715, email: **cryoservices@yahoo.co.uk**

Can help Cryonics Institute Members who need help, funeral home, transport at London. Contact : F.A. Albin & Sons / Arthur Stanley House Phone : 020-7237-3637

INTERNATIONAL: The Cryonics Society is a global cryonics advocacy organization. **www.CryonicsSociety.org**. They publish an e-newsletter *FutureNews*. Phone: 1-585-643-1167.

PROFESSIONAL STANDBY:

Companies providing professional standby, stabilization and transport services.

International Cryomedicine Experts (ICE):

https://www.cryomedics.org/
info@cryomedics.org
844-INTL-CRYO (468-5279)

Suspended Animation Inc:

https://suspendedanimationlabs.com/
info@suspendedanimationlabs.com
1-949-482-2109

HELP US STAY UP-TO-DATE!

Please send any corrections or changes to the address below. If you know of, or are considering starting a support, standby or other cryonics-related group in your area, please send details to

dg@cryonics.org.

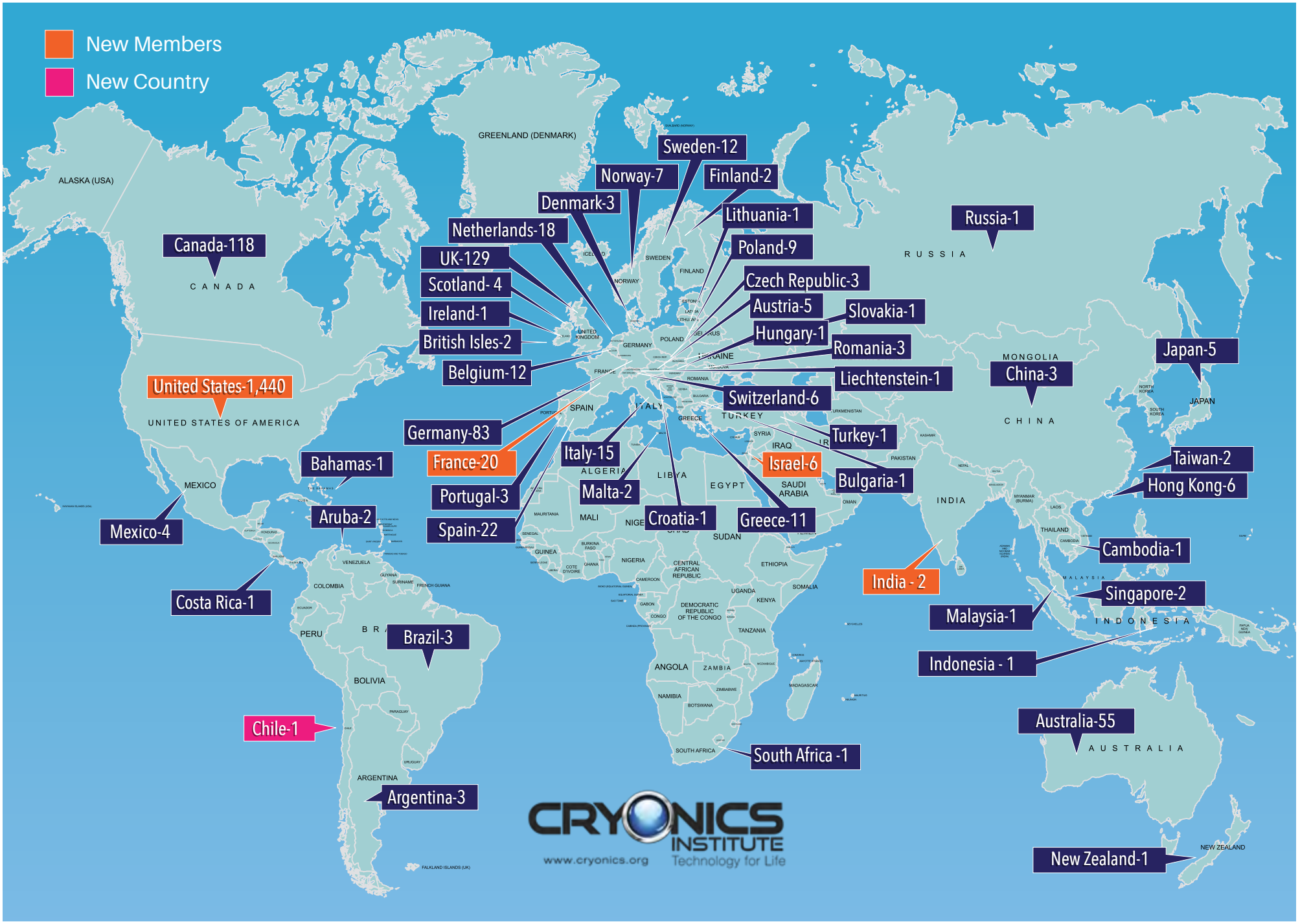
Please note, this list is provided as an information resource only. Inclusion on the list does not constitute an endorsement by the Cryonics Institute or our affiliated organizations. We urge our readers to use this list as a starting point to research groups that may meet their own individual needs. We further note that readers should always use their own informed judgment and a reasonable amount of prudence in dealing with any organization and/or individual listed.

CI MEMBERSHIP

JUNE 2026

Members	2,039	Pets	303
Patients	288	DNA/Tissue	391
		SA	352

TOTAL **2,322**



CRYONICS NEWS
Science, Technology and Medical News from the Web
Medical Xpress
from MEDICALXPRESS.COM

One in four doctors believe human preservation and future revival could work, but not without challenges

by Public Library of Science | edited by Lisa Lock, reviewed by Robert Eg | May 20, 2026

A new survey of U.S. physicians focuses on human preservation procedures and the feasibility of future revival. Ariel Zeleznikow-Johnston of Monash University, Australia, and colleagues present their findings in the study, published in the open-access journal PLOS One.

Preservation is not the only forum in which physicians have to balance concerns about unproven treatments with patients' preferences, but it is one with high stakes as it pertains to the end of someone's life. The technologies necessary to revive someone have not yet been realized, though current preservation organizations report several hundred patients preserved globally, with thousands more signed up for future preservation.

How the physician survey was conducted

In this study, Zeleznikow-Johnston and colleagues conducted a survey of more than 300 physicians, nearly half of whom were primary care providers, the rest being various kinds of specialists including neu-

rologists, intensive care doctors, anesthesiologists, and doctors who specialize in palliative care.

The survey was designed to address three main themes: the perceived feasibility of preservation procedures, clinical interventions that could improve preservation outcomes, and the ethical and legal standing of preservation as an end-of-life option.

About 1 in 4 of the physicians said they believed it was plausible, or even very plausible, that someone could be revived in the future after preservation. Just under half said it was unlikely. Neurosurgeons, on average, rated the possibility of revival highest, though most of the other specialties showed a wide spread of opinions that slanted more towards skepticism.

End-of-life choices and preservation

The way doctors are most likely to interact with preservation in their professional capacity is in the choices a patient may make for end-of-life care. A majority of physicians supported prescribing anti-coagulants to dying patients, which could help with the quality of preservation.

However, fewer respondents were comfortable with more extreme procedures, such as patients going through medically assisted death and opting to begin the preservation before cardiac arrest.

The doctors who most commonly have conversations about end-of-life care were overall more supportive of this kind of choice. About 1 in 5 doctors were concerned that decisions to increase the odds of successful cryopreservation would clash with providing the best standards of care.

Legal uncertainties and ethical concerns

Currently, pre-cardiac arrest preservation in humans is, to the best of our knowledge, not legally permitted anywhere in the world, but if the technology develops further, it may become an issue health care professionals must grapple with.

The authors emphasize that clarifying the clinical, legal, and ethical frameworks for use of preservation as an end-of-life procedure is important, and note that the speculative nature of the findings should be carefully considered.

Zeleznikow-Johnston adds, "A lot of physician hesitancy may come from simple unfamiliarity with the scientific basis of modern preservation methods. The doctors who have actually thought about this—and who regularly sit with dying patients—tend to be more receptive, not less."

Publication details

A. Zeleznikow-Johnston et al, Physician estimates of the feasibility of preserving the dying for future revival, **PLOS One (2026). DOI: 10.1371/journal.pone.0348216**

Combination therapy with stem cell-derived immune cells boost anti-cancer response

When properly activated using a specific lipid compound, these immune cells can trigger lasting, tumor-targeting immunity

Chiba University | Peer-Reviewed Pblication | NEWS RELEASE 7-MAY-2026

Cancer immunotherapy is built on a simple but powerful idea: the immune system can recognize and destroy cancer cells if it is properly activated. In many patients, however, this response is too weak or too slow to be effective. Recently, a type of immune cell called invariant natural killer T (iNKT) cells has attracted attention because of their ability to act as coordinators of immune responses, rapidly activating and rallying other immune cells to fight cancer.

One of the major obstacles holding back iNKT cell-based therapies is that patients with cancer often cannot produce enough iNKT cells on their own for therapeutic use. Scientists have worked around this issue by generating iNKT cells using donor-sourced induced pluripotent stem cells (iPSCs); these are reprogrammed cells obtained from healthy donors that can be grown in the laboratory. But an important question remains unanswered: when these lab-derived iNKT cells are introduced into a patient, do they actually set off the intended immune response?

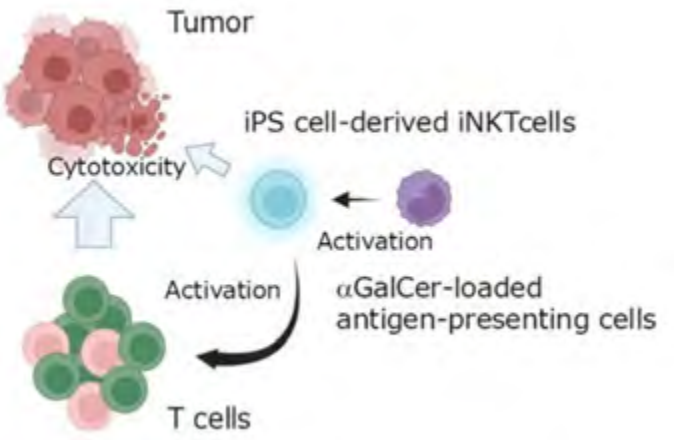
In a recent study, a research team led by Assistant Professor Takahiro Aoki from the Department of Medical Immunology, Chiba University, Japan, set out to answer this question. They tested whether iPSC-derived iNKT cells could trigger effective antitumor immunity when combined with antigen-presenting cells (APCs) loaded with α-galactosylceramide (αGalCer), a lipid compound known to activate iNKT cells. Their paper, published in the journal Stem Cell Research & Therapy on March 29, 2026, was co-authored by Dr. Haruhiko Koseki from RIKEN Center for Integrative Medical Sciences and Professor Shinichiro Motohashi from Chiba University.

Dr. Aoki shares the motivation behind his study: "I began my research after feeling powerless while treating pediatric patients with cancer who could not be cured even with multidisciplinary treatment of chemotherapy, including stem cell transplantation, radiation therapy, and surgery."

The team used a mouse model designed to reflect a human immune environment. These mice were transplanted with both patient-derived lung cancer cells and human immune cells, allowing the researchers to observe how iNKT cell therapy would interact with a human-like immune system. The animals were divided into four groups: each group received either iPSC-derived iNKT cells alone, APCs loaded with αGalCer, both cell types combined, or no treatment at all.

The combined therapy clearly outperformed all other groups in suppressing tumor growth. Notably, when human immune cells were excluded from the model, the antitumor effect largely disappeared. This implies that the benefit came not from direct tumor killing by the iNKT cells themselves but from the broader immune response they triggered.

Using single-cell RNA sequencing, the researchers found that the combined therapy generated a population of memory-phenotype T cells, a type of long-



Antigen-presenting cells activate invariant natural killer T (iNKT) cells, and this combination with α-galactosylceramide subsequently activates the body's own T cells to fight tumors. This image was created using BioRender. | CREDIT Assistant Professor Takahiro Aoki from Chiba University, Japan

lasting immune cell that can recognize, remember, and respond to a specific threat repeatedly. These memory-phenotype T cells carried receptors that were confirmed to be specifically reactive to the tumor cells used in the study. When the researchers removed these memory-phenotype T cells, the antitumor effect was significantly reduced, thus confirming their central role.

Looking ahead, the findings point toward more personalized forms of immunotherapy. By using APCs derived from a patient and combining them with iPSC-derived iNKT cells, it may be possible to tailor immune responses to the specific characteristics of an individual's tumor via genetic modification. "This approach could potentially save the lives of patients with intractable cancers that are difficult to cure with existing treatments, and a clinical trial is currently being conducted on patients with advanced head and neck cancer," concludes Dr. Aoki.

To see more news from Chiba University, click **here**.

***

Reference

Authors: Takahiro Aoki1,2, Midori Kobayashi1,2, Momoko Okoshi1, Munechika Yamaguchi1, Hiroko Okura1, Satoko Sasaki1, Yoshie Sasako1, Sachiko Kira1, Yun-Hsuan Chang1, Nayuta Yakushiji-Kaminatsui1, Jafar Sharif1, Masashi Matsuda1, Masahiro Kiuchi4, Kiyoshi Hirahara4, Motoko Y. Kimura5, Shinichiro Motohashi2, Haruhiko Koseki1,3

Affiliations: 1: Laboratory for Developmental Genetics, RIKEN Center for Integrative Medical Sciences

2: Department of Medical Immunology, Graduate School of Medicine, Chiba University

3: Department of Cellular and Molecular Medicine, Graduate School of Medicine, Chiba University

4: Department of Immunology, Graduate School of Medicine, Chiba University

5: Department of Experimental Immunology, Graduate School of Medicine, Chiba University

DOI: 10.1186/s13287-026-04994-7

About Assistant Professor Takahiro Aoki from Chiba University

Dr. Takahiro Aoki obtained his Ph.D. from Chiba University in 2019. He currently serves as an assistant professor at the Department of Medical Immunology, Graduate School of Medicine, Chiba University. He is also affiliated with the Laboratory for Developmental Genetics at the RIKEN Center for Integrative Medical Sciences. His research focuses on the development of novel cancer immunotherapies, particularly using induced pluripotent stem cell-derived invariant natural killer T cells, as well as the immunobiology of hematologic malignancies and pediatric cancers. He has over 20 publications to his name on these topics.

Funding: The study was funded by the Japan Agency for Medical Research and Development (grant numbers: JP15bm0304003, JP19bk0104087, and JP22bk0104145) and the Japan Society for the Promotion of Science KAKENHI (grant number: 23K07827).

JOURNAL: Stem Cell Research & Therapy

DO: 10.1186/s13287-026-04994-7

METHOD OF RESEARCH: Experimental study

SUBJECT OF RESEARCH: Animals

ARTICLE TITLE: Preclinical efficacy of combination therapy with allogeneic induced pluripotent stem cell-derived invariant natural killer T and α-galactosylceramide-pulsed antigen-presenting cells

ARTICLE PUBLICATION DATE: 29-Mar-2026

COI STATEMENT: Haruhiko Koseki and Shinichiro Motohashi have received grants from BrightPath Biotherapeutics Co., Ltd. Takahiro Aoki, Haruhiko Koseki, and Shinichiro Motohashi have a patent application related to this work. The rest of the authors declare that they have no relevant conflicts of interest.

CRYONICS NEWS
Science, Technology and Medical News from the Web

EducationPost
NEWS | RESEARCH | VIEWS

from EDUCATIONPOST.IN

Frozen Brain Tissue Regains Function After Deep Cooling to −196°C, Study Finds

German researchers restored electrical activity and synaptic signaling in cryopreserved mouse brain tissue, marking a breakthrough in cryobiology while stopping short of whole-brain revival or human applications.

Author: Prabhav Anand | May 2026

Researchers in Germany have successfully revived key functions in frozen brain tissue, demonstrating that complex neural activity can return after exposure to extremely low temperatures.

The study, conducted at Friedrich-Alexander-Universität Erlangen-Nürnberg and University Hospital Erlangen, focused on preserving slices of adult mouse hippocampal tissue. Scientists used a technique known as vitrification to cool the tissue to approximately −196°C, the temperature of liquid nitrogen, before carefully rewarming it.

Vitrification prevents the formation of ice crystals, which typically damage cells during freezing. Instead, the tissue enters a glass-like state, preserving its structure. After thawing, the samples showed intact cellular architecture, and neurons resumed electrical activity.

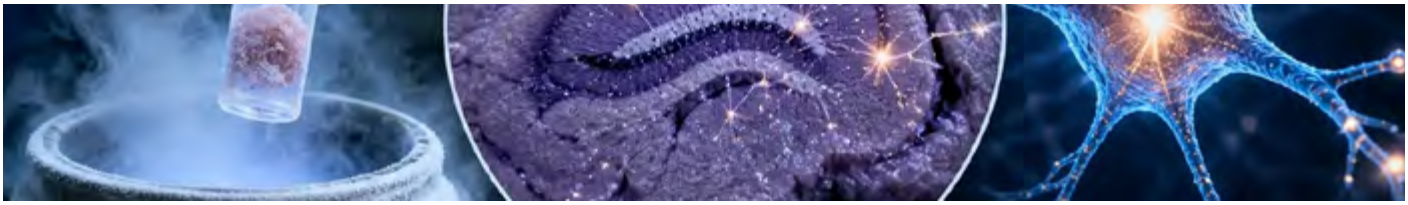
Researchers observed that signals were able to travel across neural networks, indicating restored synaptic communication. Notably, the tissue also demonstrated long-term potentiation, a process closely linked to learning and memory, suggesting that core brain functions remained viable.

The hippocampus, the brain region examined in the study, plays a crucial role in memory formation and information processing. By targeting this area, scientists were able to assess whether fundamental mechanisms of cognition could survive extreme preservation. The findings suggest that, under controlled laboratory conditions, certain brain functions can endure deep freezing.

However, researchers cautioned against broader interpretations. The experiment involved thin slices of brain tissue, not entire brains or living organisms. It does not demonstrate the possibility of freezing and reviving a whole brain, nor does it preserve consciousness, identity, or full memory systems. Concepts such as human cryosleep or suspended animation remain speculative and far from current scientific capability.

Despite these limitations, the work represents a significant advance in cryobiology. The ability to preserve both structure and function in delicate brain tissue could have applications in organ preservation, neurological studies, and drug testing. It may also improve long-term storage of biological samples for research.

The study highlights that while reviving frozen humans is not on the horizon, preserving and restoring activity in complex tissues is becoming increasingly feasible, opening new avenues in biomedical science.



Researchers Have Found a Dietary Compound That Increases Longevity

New findings suggest a hidden dietary compound may help the body resist oxidative stress and protein damage tied to aging

BY UNIVERSITY OF SEVILLE | APRIL 11, 2026

New findings suggest a hidden dietary compound may help the body resist oxidative stress and protein damage tied to aging. Credit: Shutterstock

A largely overlooked plant compound found in common fruits and vegetables is drawing new scientific attention for its potential effects on aging and brain health.

A little-known nutrient found in everyday fruits and vegetables may be doing far more in the body than scientists once believed.

Researchers from the University of Seville and the University of Kent report that phytoene, a colorless carotenoid present in foods like tomatoes, carrots, oranges, and peppers, can extend lifespan and protect against key processes linked to Alzheimer's disease, at least in a widely used laboratory model.

Their experiments in the tiny worm Caenorhabditis elegans showed lifespan increases of 10 to 18.6 percent,

along with a 30 to 40 percent reduction in the toxic effects caused by amyloid-β42, the protein associated with brain plaque formation in Alzheimer's.

Rethinking an Overlooked Compound

Phytoene has long been overlooked. Unlike better-known carotenoids such as beta-carotene or lycopene, it does not give foods their bright colors and has often been treated as an inactive precursor rather than a functional compound.

Phytoene is a colorless carotenoid naturally found in a variety of fruits and vegetables, including tomatoes, carrots, oranges, and red peppers, as well as in certain microalgae species. Credit: Stock

The research, part of Ángeles Morón Ortiz's doctoral work, tested both purified phytoene and extracts derived from microalgae, specifically Chlorella sorokiniana and Dunaliella bardawil. These extracts, which contained high levels of phytoene, performed just as well as the pure compound. Importantly, the treatments did not interfere with the worms' growth or food supply, suggesting the benefits were not due to reduced calorie intake or stress.

Further experiments revealed how phytoene may be working. The compound improved resistance to oxidative stress, a process driven by unstable molecules that damage cells and contribute to aging and diseases such as cancer and neurodegeneration. At certain doses, survival under oxidative stress increased by as much as 53 percent. This aligns with what scientists already know about carotenoids, which can neutralize harmful molecules or activate the body's own defense systems.

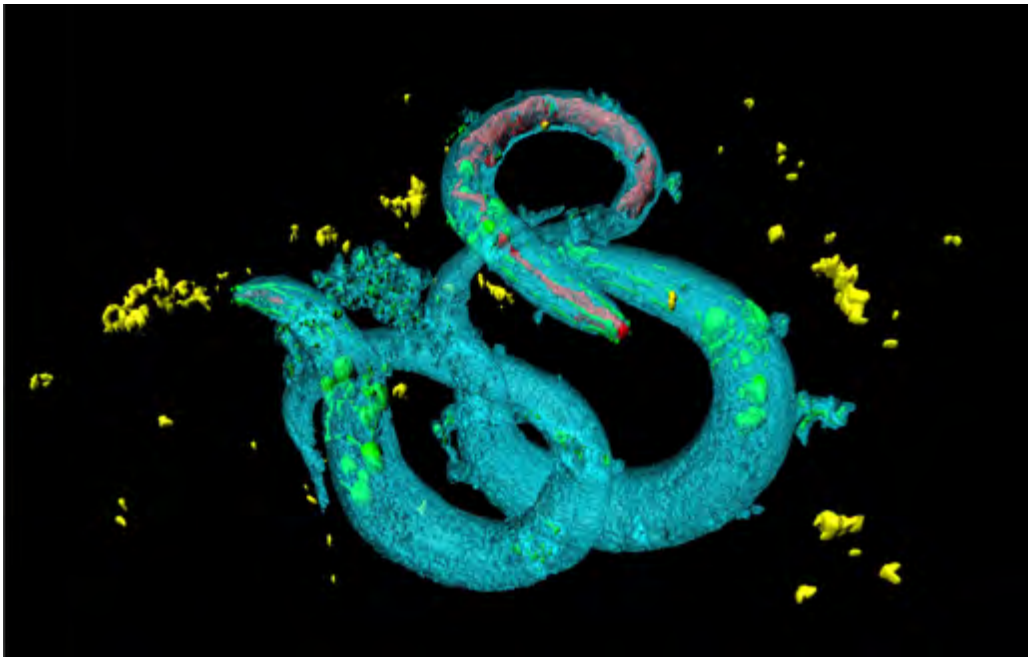
The Alzheimer's-related findings are also significant. In the worm model, amyloid-β42 buildup leads to progressive paralysis. Animals given phytoene showed a clear delay in this effect, indicating protection against protein aggregation, one of the hallmarks of the disease.

"These are very exciting preliminary results, so we are looking for funding to continue this line of research and to find out by what mechanisms these effects are produced," said Dr. Paula Mapelli Brahm.

Nutritional and Environmental Implications

Phytoene may also be important from a nutritional perspective. Some studies suggest that people consume more phytoene daily than many other carotenoids, and it accumulates in tissues throughout the body, including the skin. There is also evidence that it may help protect against ultraviolet radiation, adding to its potential health value.

The study highlights microalgae as a promising and



Caenorhabditis elegans (C. elegans) is a microscopic, transparent roundworm widely used as a model organism in biological research due to its simple structure and well-understood genetics. In this study, it served as a key system for investigating the effects of phytoene, allowing researchers to observe changes in lifespan, oxidative stress resistance, and Alzheimer's-related protein toxicity. Credit: Stock

sustainable source of this compound. Unlike traditional crops, microalgae grow rapidly, require little land, and can produce high concentrations of beneficial molecules. They are already used in supplements and food ingredients, and their role in future nutrition is expanding as demand rises for both healthier and more environmentally friendly food systems.

From Worms to Human Health

While the results come from a simple organism, C. elegans has been central to major scientific breakthroughs, including discoveries related to aging, gene regulation, and cell death. Findings in this model often guide early-stage research in humans.

The researchers emphasize that more work is needed to confirm whether the same effects occur in people.

Building on these findings, the team has already begun exploring its effects beyond lifespan and neurodegeneration. In a more recent study, they again used C. elegans to examine how phytoene and related carotenoids influence the organism's skin-like outer layer.

They found that phytoene-rich microalgae extracts improved epidermal integrity and significantly strengthened the worm's protective barrier, suggesting potential applications in skin health and aging.

The team has also begun exploring phytoene's potential in other disease areas. In early-stage experiments using human cell models, phytoene-rich extracts showed protective effects against oxidative damage and signs of modest anti-tumor activity in colorectal cancer cells.

References: "Phytoene and Phytoene-Rich Microalgae Extracts Extend Lifespan in C. elegans and Protect against Amyloid-β Toxicity in an Alzheimer's Disease Model" by Ángeles Morón-Ortiz, Antonis A. Karamalegkos, Paula Mapelli-Brahm, Marina Ezcurra and Antonio J. Meléndez-Martínez, 30 July 2024, Antioxidants.

DOI: 10.3390/antiox13080931

"Effects of lutein, phytoene and carotenoid-rich microalgal extracts on the epidermis of Caenorhabditis elegans" by Ángeles Morón-Ortiz, Mar Ferrando-Marco, Antonio León-Vaz, Rosa León, Paula Mapelli-Brahm, Michalis Barkoulas and Meléndez Martínez, Antonio Jesús, 11 November 2025, Food Chemistry.

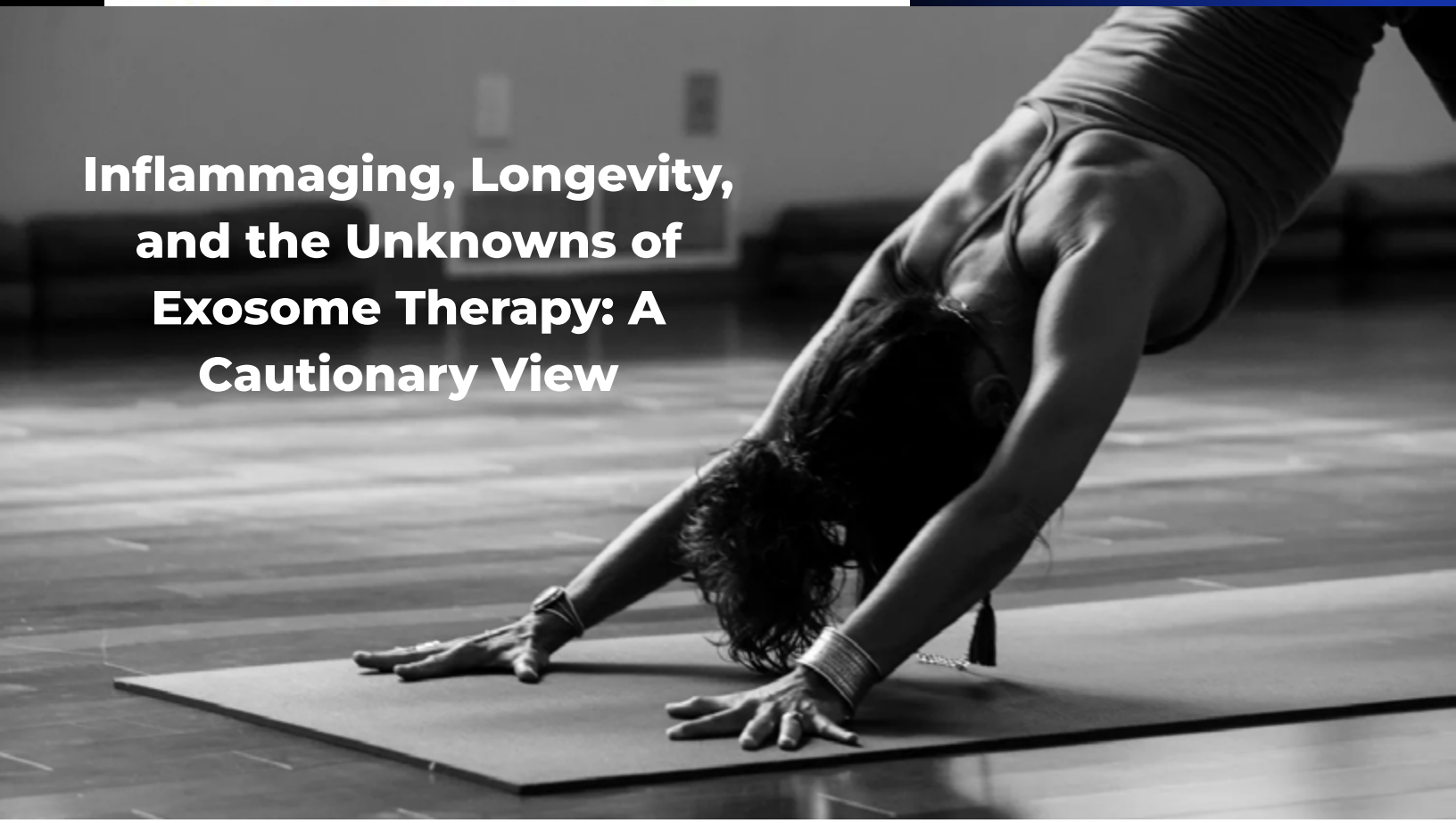
DOI: 10.1016/j.foodchem.2025.147022

"Preliminary Assessment of the Protective and Antitumor Effects of Several Phytoene-Containing Bacterial and Microalgal Extracts in Colorectal Cancer" by Gloria Perazzoli, Cristina Luque, Antonio León-Vaz, Patricia Gómez-Villegas, Rocío Rengel, Ana Molina-Márquez, Ángeles Morón-Ortiz, Paula Mapelli-Brahm, José Prados, Consolación Melguizo, Antonio Meléndez-Martínez and Rosa León, 21 October 2024, Molecules.

DOI: 10.3390/molecules29215003

STEM CELL NEWS

from STEMCELL.NEWS



Inflammaging, Longevity, and the Unknowns of Exosome Therapy: A Cautionary View

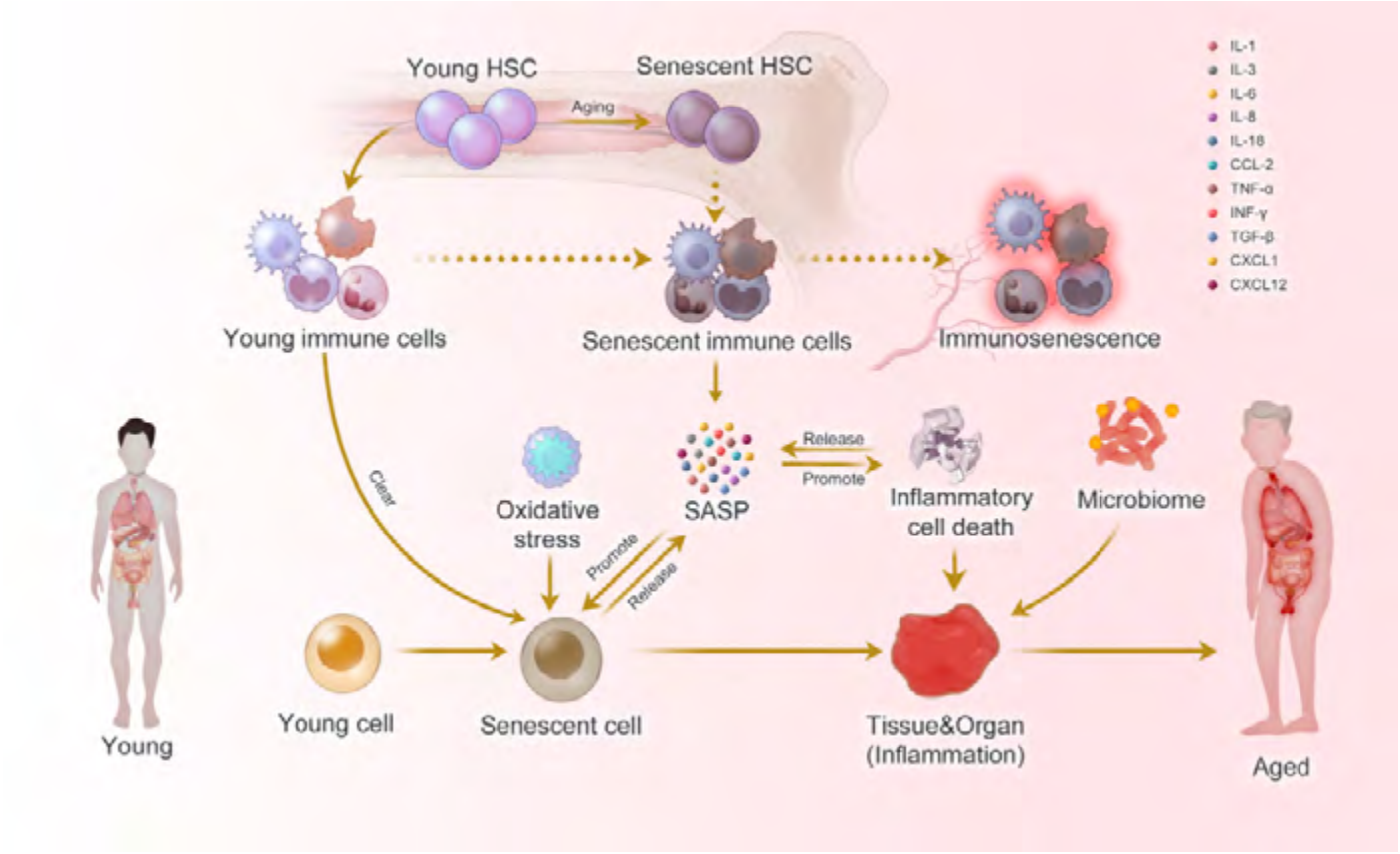
Aging is not simply the passage of time—it's the gradual loss of cellular coordination, the breakdown of the body's ability to regulate itself at the molecular level. Over time, the once-elegant orchestra of cellular signals becomes discordant. This loss of harmony is driven in large part by inflammaging—a chronic, low-grade inflammatory state that underlies nearly every age-related disease.

From cardiovascular disease and Alzheimer's to diabetes and cancer, inflammation is no longer just a symptom—it's a driver. And yet, many still overlook its foundational role in the longevity conversation.

In recent years, regenerative therapies such as exosome-based preparations have entered the discussion, with early-stage research exploring their potential role in modulating inflammation—particularly within the vascular endothelium, a central site of age-related inflammatory signaling. But as interest accelerates, so do concerns about safety, consistency, and validation in the current marketplace.

What Is Inflammaging?

Coined from the words inflammation and aging, inflammaging refers to the chronic activation of the immune system over time. Unlike acute inflammation, which protects and heals, chronic inflammation accumulates



Click here to read the original research paper

silently—damaging tissues, accelerating cellular senescence, and disrupting key signaling pathways that regulate immune, metabolic, and repair functions.

The Conductor Analogy: It's Not Just About One Disease

Imagine the human body as a symphony orchestra.

- The genes are the sheet music.
- The immune system is the brass section.
- Metabolic systems? Strings and percussion.
- The conductor? That's the regulatory network keeping everything in rhythm.

As we age, the conductor begins to falter. This decline in regulation—when left unchecked—leads to discord across multiple systems. Disease emerges not because of time alone, but because regulatory failure allows dysfunction to compound.

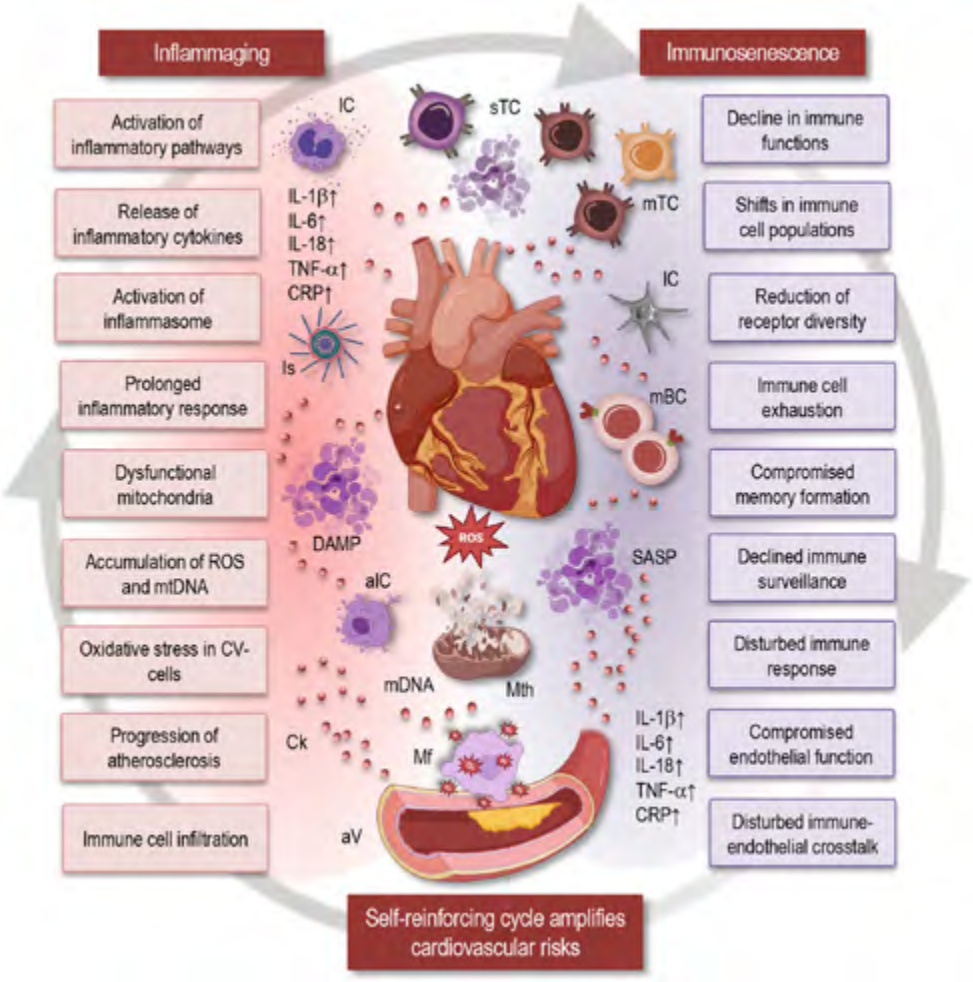
The Promise and Uncertainty of Exosome Preparations

One emerging area of research is the hypothesis that extracellular vesicles, including exosomes derived from perinatal stem cells, may help regulate inflammation through paracrine signaling—particularly at sites of endothelial dysfunction, where chronic inflammation contributes to vascular aging, insulin resistance, and atherosclerosis.

But while the concept is promising, the market reality is far more complex.

In practice, the quality and content of exosome preparations vary widely. Even when derived from similar source tissues (such as human umbilical cord MSCs), the final product depends on multiple factors:

- Culture conditions
- Passage number
- Harvesting and purification methods



- Storage protocols
- Sterility and contaminant screening
- Batch consistency

Despite what may be listed on a label or claimed by a researcher or provider, most recipients, even doctors, have no way of knowing what is actually in the vials, especially from so-called 'grey market' sources. In many cases, the labs themselves may not fully know either—especially when preparations lack independent testing, identity verification, or third-party batch traceability. Lypophilized (powdered) preparations denature proteins and result in a sub-par or even dangerous formulations.

- Robust research labs ship sterile liquid shelf stable products and engage in:
- Flow cytometry for vesicle profiling
- Endotoxin and sterility testing
- Nanoparticle tracking analysis (NTA)
- Cytokine cargo profiling

Unfortunately, many marketed products—especially in unregulated jurisdictions—do not undergo this level of scrutiny and even well-meaning practitioners may not truly understand the formulations that are seeping into the grey market. Some may contain cellular debris, pro-inflammatory contents, or non-human contaminants or mislabeled sources.

Risk Factors, Testing, and Clinical Caution

There is also no universal screening standard to determine if a recipient is a good candidate for research studies involving biologic products. While anecdotal

reports and early research suggest anti-inflammatory effects in some contexts, the patient's internal terrain matters.

- Factors that must be considered include:
- Personal or family history of cancer
- Pre-existing inflammatory or autoimmune conditions
- Latent infections
- Age, immune status, and vascular health

Tests like GRAIL or other multi-cancer early detection panels may be valuable in stratifying risk before any systemic biologic is administered. Localized applications, when possible, may reduce systemic exposure and mitigate unintended immune responses. Read more about risk factors and suitability here.

Why a Holistic View Still Matters

Even if biologics like exosomes prove beneficial in the future, they are unlikely to stand alone. Inflammaging is systemic, and treating it requires systemic multi-pronged thinking.

While single agents like rapamycin, peptides, or even advanced biologics may play a role, longevity science is moving toward systems-level regulation—not isolated suppression. Stress, glycemic control, circadian rhythm, and senescence management all contribute to the terrain in which inflammation—and regeneration—occurs.

The Bottom Line

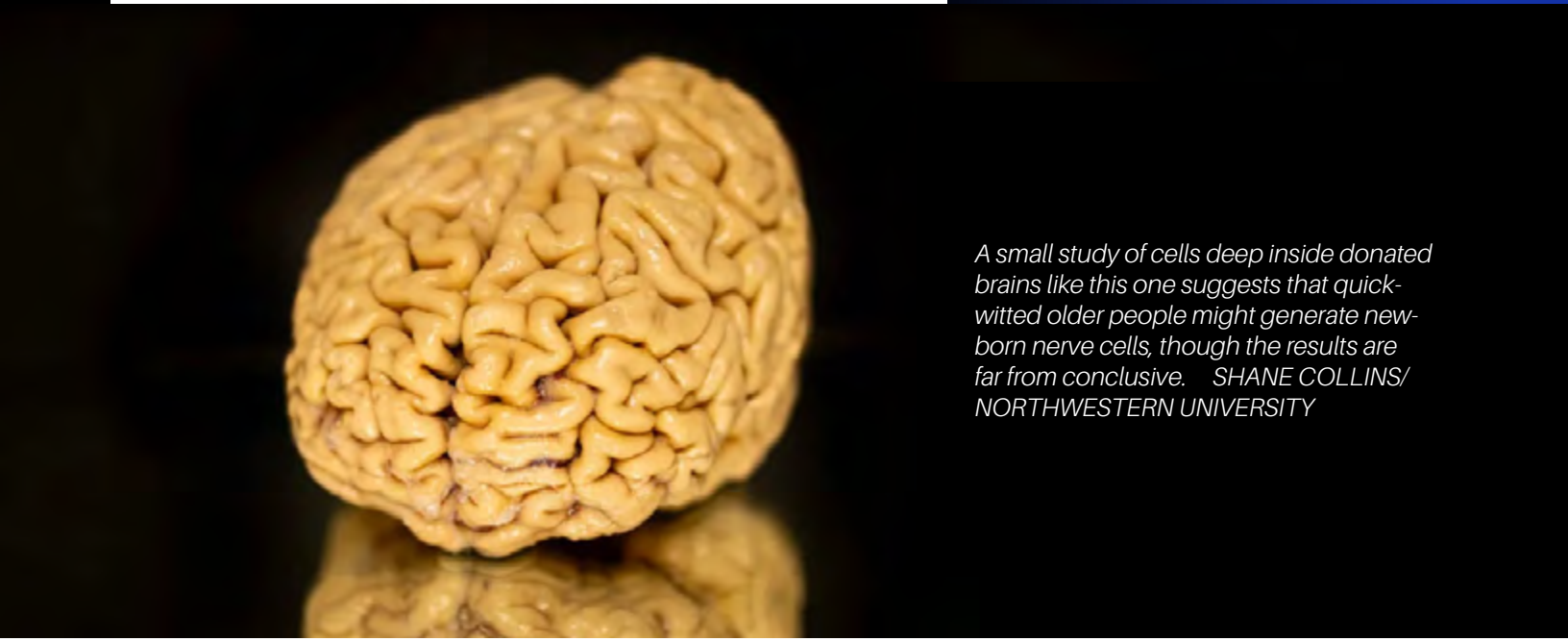
Exosome research may offer a promising avenue in the fight against inflammaging, but in a largely unregulated global market, caution and discernment are not optional. Without standardized validation, batch-level testing, and clinician oversight, even biologics supposedly sourced from the same tissue type may yield wildly different effects.

In longevity science, the terrain matters as much as the tool. Regulation–not just of molecules, but of systems–is the future.

Selected References

- Nature Aging – A unified theory of inflammaging
- PubMed – Senescence, SASP, and aging
- Longevity & Healthspan – Molecular mechanisms of inflammaging
- NIH – Chronic inflammation and disease progression
- Aging-US – The role of mitochondrial dysfunction in inflammaging

ScienceNews
INDEPENDENT JOURNALISM SINCE 1921
from SCIENCENEWS.ORG



A small study of cells deep inside donated brains like this one suggests that quick-witted older people might generate newborn nerve cells, though the results are far from conclusive. SHANE COLLINS/ NORTHWESTERN UNIVERSITY

The remarkable brains of 'SuperAgers' hold clues about how we age

New results add to the debate over whether humans make new nerve cells into adulthood

By Laura Sanders | MARCH 6, 2026

A look inside the brains of extraordinarily sharp elderly people reveals clues about their unusual abilities. Deep in these exceptional brains were signs of what some scientists believe to be newborn nerve cells, born well into old age.

The results, published February 25 in Nature, add datapoints to the scientific debate about whether adults can make new neurons, a process called neurogenesis, and if they can, what those neurons are good for.

Whether that debate is now settled depends on who you ask — as not everyone agrees that the reported signs are from dividing neurons.

Neuroscientist Orly Lazarov of the University of Illinois Chicago and colleagues set out to investigate how different brains age, and what sorts of changes might keep some people sharp for decades. Their study focused on brain samples taken after death, giving the researchers access to brain tissue that would otherwise be unreachable. The tissue came from five groups of six to 10 people each: young, healthy adults; old, healthy adults; old adults with early signs of dementia; old adults with Alzheimer's disease; and "SuperAgers," adults at least 80 years old with the memory power of a person 30 years younger.

Studying a collection of brains with such range in age and cognitive status is "unbelievable, unprecedentedly exciting stuff," says neuroscientist Shawn Sorrells

As part of a broader study on successful aging, SuperAger Ralph Rehbock, born in Germany in 1934, takes memory, language and thinking tests, provides blood samples and undergoes brain scans. SHANE COLLINS/NORTHWESTERN UNIVERSITY

of the University of Pittsburgh, who wasn't involved in the study.

For this study, the researchers zeroed in on the seahorse-shaped hippocampus; located on each side of the brain, hippocampi are crucial for memory formation and other tasks such as navigating. Specifically, they looked at particular genetic signatures — collections of genes that were either active or inactive — inside the nuclei of brain cells taken from this region. These signatures belong to cells involved in neurogenesis, including newly created neurons and their parents, the scientists reasoned.

The signatures turned up in all the groups to varying degrees. But there were some key differences among them.

SuperAgers, the analysis suggests, had about 2.5 times the number of these immature cells compared with people who have Alzheimer's disease. Other comparisons yielded less clear outcomes, though there were hints of more new neurons in SuperAgers than in young adults, old adults and old adults with early signs of dementia. That youthful abundance of neurogenesis could be behind SuperAgers' mental strength, the researchers suspect.

Because of the small numbers of brains in the study, it's hard to say how solid this trend might be, Lazarov says. "We have to be a little careful with that." The key insight, she says, is that the genetic signatures are distinct in SuperAgers.

Not everyone agrees that neurogenesis is happening, much less providing benefits. "The assumption that these cells are truly dividing is a major leap unsupported by their data," Sorrells says. He suspects that the genetic analysis method used in the new study could have erroneously classified cells as new neurons.

Still, Lazarov says, "the best I can say is that given the tools that we have right now, this is the best evidence we have."

The results don't mean that SuperAgers aren't aging. "We could clearly see that their profile was very different than the young adults," Lazarov says. But "they had a unique signature, a unique profile of genes that allowed them to cope with the aging process." Neurogenesis, she adds, may be one piece of that coping process.

Exploring brain changes that come with aging is important, Sorrells says. "That's super interesting, super exciting — a fantastic question. But it's all predicated on this notion that they're identifying the cells correctly."

The debate, which hinges on what counts as proof when it comes to unambiguously detecting newborn neurons, speaks to the complexity of the human brain, Sorrells says. "The brain has a lot of mysteries that are yet to be revealed."

ScienceNews
INDEPENDENT JOURNALISM SINCE 1921

from SCIENCENEWS.ORG

Clinical reasoning is a process doctors go through as they consider patient symptoms, come up with possible diagnoses, order tests and then weigh the results. When fed text descriptions of all these stages of the process, AI was often able to pinpoint the correct diagnosis more accurately than human doctors, new research shows.

SOLSKIN/DIGITALVISION/GETTY IMAGES

Can AI help doctors avoid missed diagnoses? A new study suggests yes

Humans still have important roles to play in medicine, experts stress

By Kathryn Hulick | APRIL 30, 2026

In some of medicine's toughest cases, the hardest part isn't choosing the right diagnosis. It's thinking of it at all. Artificial intelligence may now be better at that than doctors, a new study suggests.

"We're witnessing a really profound change in technology that will reshape medicine," Harvard University biomedical data scientist Arjun Manrai said in an April 28 news conference.

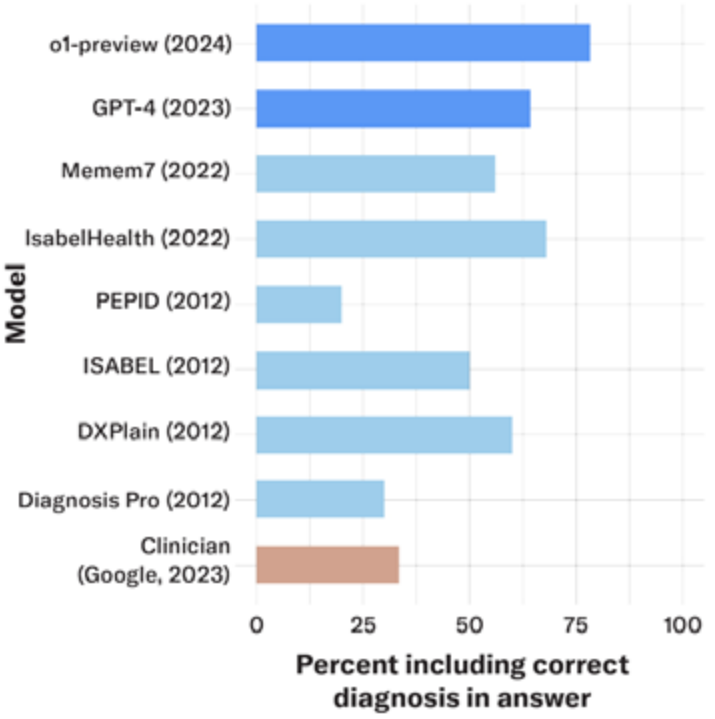
That change is driven by advances in large language models, the same technology OpenAI's ChatGPT is built on. New versions, called reasoning models, can work through complex problems step by step. As of 2025, 1 in 5 doctors and nurses worldwide used AI for a second opinion on complex cases, and over half want to use it for this purpose, according to a survey of more than 2,000 clinicians. But how well the technology works in a medical setting has been debated.

Manrai and colleagues tested OpenAI's o-1 preview model on a range of medical cases, including classic sets of symptoms used in medical training as well as real-world data directly from the charts of 76 patients who visited an emergency room in Boston. Across those clinical reasoning tests, the AI model was more likely than physicians to include the correct diagnosis, or something very close to it, among its possible answers, the researchers report April 30 in Science.

Not all researchers are convinced that this means we should trust AI with our diagnoses. The American College of Emergency Physicians points out that in the real-world emergency room scenario, AI outperformed two internal medicine physicians. Emergency doctors get special training and would probably have done a better job. Also, AI reasoning is still far from what any human doctor can do.

Is AI better at medical diagnoses?

An AI model outperforms doctors on identifying correct diagnoses



P. BRODEUR ET AL/SCIENCE 2026

Researchers looked at three methods for diagnosing patient cases: AI models built on large language models (dark blue), specialized software for determining a diagnosis (light blue) and human clinicians (brown). The AI reasoning model o1-preview outperformed them all, including the correct diagnosis in its response almost 80 percent of the time. Some of these data came from prior studies, so not all of the systems were looking at the exact same cases. But all of the systems examined some subset of a long-running series of challenging real-world patient cases published in the New England Journal of Medicine.

"When we say clinical reasoning, it doesn't mean the same thing as model reasoning," says Arya Rao, a researcher at Harvard Medical School, who was not involved in the study. "These models have been optimized to do this kind of sequential thought that we call reasoning, but it's not at all the same thing as how we teach medical students to reason."

Manrai is not opposed to the critique, noting AI technology should assist rather than replace people in medical roles. "Ultimately, I think humans want humans to guide them … through challenging treatment decisions," he said.

Still, the results show that this type of AI "works for making diagnoses in the real world," coauthor Adam Rodman, a doctor at Beth Israel Deaconess Medical Center in Boston, said at the news conference.

He described a patient who came into the emergency room with what seemed like routine respiratory symptoms and had recently undergone an organ transplant and was immunosuppressed. The patient turned out to have a dangerous flesh-eating infection requiring surgery. "The model actually was suspicious of this [infection] from the very beginning, probably 12 to 24 hours before the human physician would have become suspicious of this," Rodman said.

Rao applauds the team for presenting [AI] "as an extension of a physician, not a replacement." She calls the study "rigorous and thoughtful." However, she does not think there's enough evidence to say that AI models have aced clinical reasoning.

Her team released a study April 13 that tested 21 AI models at each step of the process toward reaching a diagnosis. Reasoning models got the highest scores overall. But when Rao's team drilled down to identify which parts of the diagnostic process were trickiest for AI, the researchers found a weak point that persisted from the oldest models to the newest. That's the process of considering several different uncertain diagnoses.

AI models based on LLMs tend to jump to conclusions. "Their reasoning is brittle precisely where uncertainty and nuance matter most," Rao and her team wrote in their paper. Their conclusion was that LLMs are not yet ready to make decisions in medical settings.

These two studies evaluated different AI models in different ways. Yet, the results aren't as opposed as they may seem on the surface, both teams say. They agree that the next step should be more research.

Manrai's team is planning clinical trials to help answer the question: "How do we safely and thoughtfully integrate [AI] into care?" Rao likes that approach. So many people "don't have enough access to care," she says. Someday, she notes, "I think AI can be a great equalizer."

10 Worst Mistakes in Cryonics

Don't ruin your chance for a succesful suspension

1) Not signing up ahead of time

Becoming a member, having contracts in place, and having paperwork in order should not be a last minute decision. Waiting until the last minute or after death results in an unnecessary delay of care or worse- No suspension at all! Don't wait. Sign up here and be prepared. https://www.cryonics.org/membership/

2) Not providing proof of funding

Some people believe that they can worry about funding later or if they have funding, they have put off providing proof of funding to CI. This should be done annually. Failing to provide this can result in a delay of care while the funding clears, which can take weeks. Send your proof of funding to CI now to be prepared.

3) Not telling anyone your plans

Being reclusive or not telling family or friends your wishes is not recommended. You should not be afraid to tell those around you what your wishes are, especially your next of kin. Wearing a bracelet, necklace or having identification or other items in view can speak to your wishes. This is all you have when you can't speak for yourself. Disasters have resulted in the past from not sharing. Talk with your family, close friends and your estate attorney, so you can be prepared.

4) Not planning

Many think cryonics is a turnkey service where you can just sign up and let fate take over. No matter how much you pay for cryonics, you are the only one who can make sure that you will have the best chance by planning. CI has provided a lot of information on our website and in our standby manuals. Those who plan succeed those who don't fail.

For more information visit: https://cryonics.org/category/members/standby/

5) Not notifying CI of Emergencies

There is no way that your cryonics provider can help you if they do not know of your emergency. Your family, friends, standby group or next of kin must immediately contact CI when you are having health issues or worse. It is also important for CI to know if you have up and coming surgeries or procedures, including terminal illness. Patients with a diagnosed terminal illness could enter hospice care, which might help your cryonics situation vastly. Any delay in notifying us directly could result in a poor suspension. Those helping you must have simple and clear instructions.

6) Committing suicide

Anyone who commits suicide who is not terminally ill or breaks a local law in doing so is potentially putting both themselves and our organization at great risk. CI will not risk itself for people who engage in behavior that goes against our mission to preserve life. Such activity will likely lead to an autopsy and long delays, rendering the suspension process substandard or impossible to carry out.

Do not consider cryonics as a way out of your problems. You are likely to not get suspended under those circumstances. If you do not have a terminal illness and are considering suicide, you should seek mental health advice and treatment as soon as possible. https://www.mentalhelp.net/articles/depression-hotline/

7) Engaging in Risky or illegal activities

Risky behaviors or associations that lead to the patient dying around suspicious circumstances will also likely lead to mandated autopsies that will also stand in the way of your cryonics wishes. It is best to use common sense and not put yourself in harm's way. Not only could your life be ended, so too could your chances of cryonics suspension or future reanimation. Use common sense and stay safe.

10 Worst Mistakes in Cryonics

8) Providing financial or legal incentives that encourage your **not** being suspended.

Leaving all of your insurance or cryonics money to family if you are not suspended is certainly an option at CI, but ironically it does provide financial incentive for hostile family members to block your suspension. As often is the case, people will make sure you are not suspended to get a hold of your money.

One suggestion is to leave family and next of kin some separate money from cryonics funding while suggesting that Cryonics funding go to cryonics as a donation no matter if you are buried or suspended. In addition, family or next of kin can be further compelled to cooperate if they will actually lose the money that is allocated to them for not cooperating. It is also suggested that your family be made fully aware of your wishes and stipulations, so they know what the results of their actions will be. You want to make sure you put incentives and disincentives in the correct place, so that your wishes are honored. It is suggested that your will and cryonics documentation reflect this and get reviewed by an attorney. See https://cryonics.org/members/protect-yourself-from-legal-threats/

9) Not removing a hostile next of kin from rights to your remains and finances

In many states and areas you can legally remove a hostile family member or next of kin from your estate. You can reassign someone who is sympathetic to cryonics and who has the legal authority to disposition of your remains, as well as your assets. In some states and locations there are disposition of remains reassignment documents, as well as powers of attorney, both in regards to financial as well as medical decisions. The executor of your will or anyone involved with making decisions should be sympathetic to your cryonics wishes. It is your responsibility to make your wishes very clear and to remove any doubt or potential legal resistance from family or next of kin.

We suggest seeking legal advice to help you in this regard. Some members have even made a video statement of their wishes and given it to both their cryonics organization as well as their attorneys. Not being careful could mean that you don't get suspended, despite your wishes. Many are surprised to learn that they lose their rights upon legal death. See an attorney and prepare.

10) Dying under less then favorable conditions

This seems harder to control then the other situations, but there are some things you can do to make your situation more favorable. You can diet, exercise and follow the latest official medical advice to stay healthy longer. The longer you are alive, the better the technology will probably be for suspending you and the closer we will be to a future that may be able to reverse your condition.

You can also avoid travel to remote or hostile places where such travel is risky. Some overseas travel can result in long delays both logistically and bureaucratically. In general, dying near your cryonics provider or cryonics standby group helps your chances. Living a healthy lifestyle and staying sociable, while surrounding yourself with people who will act on your behalf is paramount. Building solid, positive relationships with good people is probably one of the most important things you can do to have your wishes honored. Take care of yourself and maintain social connectivity.

CRYONICS INSTITUTE
Technology for Life


CRYONICS
INSTITUTE
Technology for Life