A “disease” approach in life extension advocacy can facilitate communication with the general public

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Founded in **2015**

Hosted **4 successful campaigns** in support of aging and longevity studies

More than **$200 000 collected for research**

The results of one study have been already **published***

Three studies are currently ongoing

* Boominathan, A., Vanhoozer, S., Basisty, N., Powers, K., Crampton, A. L., Wang, X., ... & O'Connor, M. S. (2016). Stable nuclear expression of ATP8 and ATP6 genes rescues a mtDNA Complex V null mutant. *Nucleic acids research*, *44*(19), 9342-9357.

Campaigns hosted at Lifespan.io

MitoSENS Mitochondrial Repair Project

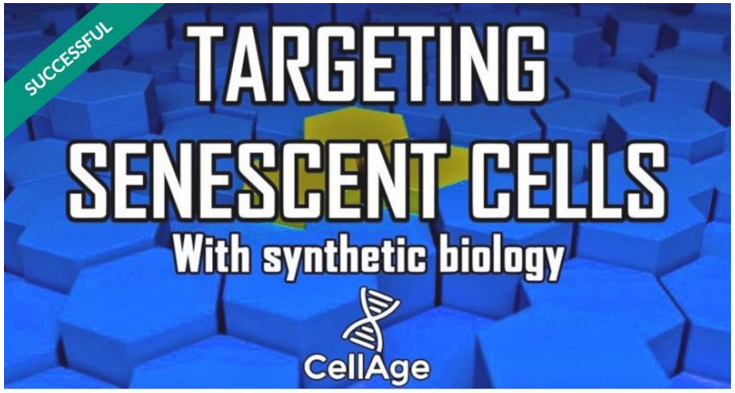
Engineering backup copies of mitochondrial genes to place in the nucleus of the cell, aiming to prevent age-related damage and restore lost mitochondrial function.

The Major Mouse Testing Program

Testing a new class of compounds, Senolytics, on their ability to extend healthy lifespan by clearing out dysfunctional cells in the body.

OncoSENS Control ALT Delete Cancer

High-throughput screening of a library of diverse drugs to find treatments for 'ALT' cancers, those which rely on Alternative Lengthening of Telomeres.



CellAge: Targeting Senescent Cells With Synthetic Biology

Designing better systems for detection and safe removal of dysfunctional "senescent" cells to improve health and treat age-related diseases.

Why engage the general public?

We still need more data on the mechanisms of aging, but the basic science is underfunded.

Without studies on cells and mice it is impossible to get to the stage of clinical trials in humans.

State funding is more often allocated to mainstream areas, such as research on single diseases.

Business does not have much interest in basic science, because usually there is no final product yet that can be sold.

How to get more funding for gerontology?

Let's become better at teaching!

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Didactic principles we should not break

Active and conscious participation

Systematization

Accessibility and individual approach

Active and conscious participation: make the newcomer see the benefits

Don't touch the fire:

For the newcomer, the expression "life extension" means extension of old age!

It also means "enhancement" which is often rejected.

Immortal people are pictured by pop culture as mad, morally inferior and bored.

Instead, make the benefits clear:

Addressing aging could lead to healthy life extension, and could allow us to cure or prevent age-related diseases.

Systematization: divide the material into small units and arrange them to follow the educational logic

Begin with simple, move to more complex:

Explain what aging is.

Explain the relationship between aging, damage accumulation and disease.

Explain how addressing aging mechanisms can lead to the extension of the healthy and youthful period of life.

www.leafscience.org/aging

Accessibility and individual approach: use simple language and discuss the concerns

Avoid being too technical, if you are not being understood then scientific terms do not matter.

www.leafscience.org/blog

Don't refuse to discuss any concerns as people prefer to take into account the consequences before making important decisions about their values, health and money.

www.leafscience.org/education/concerns

Recommended papers to read

Lucke, J., Ryan, B., & Hall, W. (2006). What does the community think about lifespan extension technologies? The need for an empirical base for ethical and policy debates. *Australasian Journal on Ageing*, *25*(4), 180-184.

Shepherd, R., Barnett, J., Cooper, H., Coyle, A., Moran-Ellis, J., Senior, V., & Walton, C. (2007). Towards an understanding of British public attitudes concerning human cloning. *Social Science & Medicine*, *65*(2), 377-392.

Underwood, M. (2014). What reassurances do the community need regarding life extension? Evidence from studies of community attitudes and an analysis of film portrayals. *Rejuvenation research*, *17*(2), 105-115.

Donner, Y., Fortney, K., Calimport, S. R., Pfleger, K., Shah, M., & Betts-LaCroix, J. (2015). Great desire for extended life and health amongst the American public. *Frontiers in genetics*, *6*.

Partridge, B., Underwood, M., Lucke, J., Bartlett, H., & Hall, W. (2009). Ethical concerns in the community about technologies to extend human life span. *The American Journal of Bioethics*, *9*(12), 68-76.

Partridge, B., Lucke, J., Bartlett, H., & Hall, W. (2009). Ethical, social, and personal implications of extended human lifespan identified by members of the public. *Rejuvenation research*, *12*(5), 351-357.

Underwood, M., Bartlett, H. P., Partridge, B., Lucke, J., & Hall, W. D. (2009). Community perceptions on the significant extension of life: An exploratory study among urban adults in Brisbane, Australia. *Social science & medicine*, *68*(3), 496-503.

Dragojlovic, N. (2013). Canadians' support for radical life extension resulting from advances in regenerative medicine. *Journal of aging studies*, *27*(2), 151-158.

Lang, F. R., Baltes, P. B., & Wagner, G. G. (2007). Desired lifetime and end-of-life desires across adulthood from 20 to 90: A dual-source information model. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *62*(5), P268-P276.

Settersten, R. A., Flatt, M. A., & Ponsaran, R. (2008). From the lab to the front line: How individual biogerontologists navigate their contested field. *Journal of aging studies*, *22*(4), 304-312.

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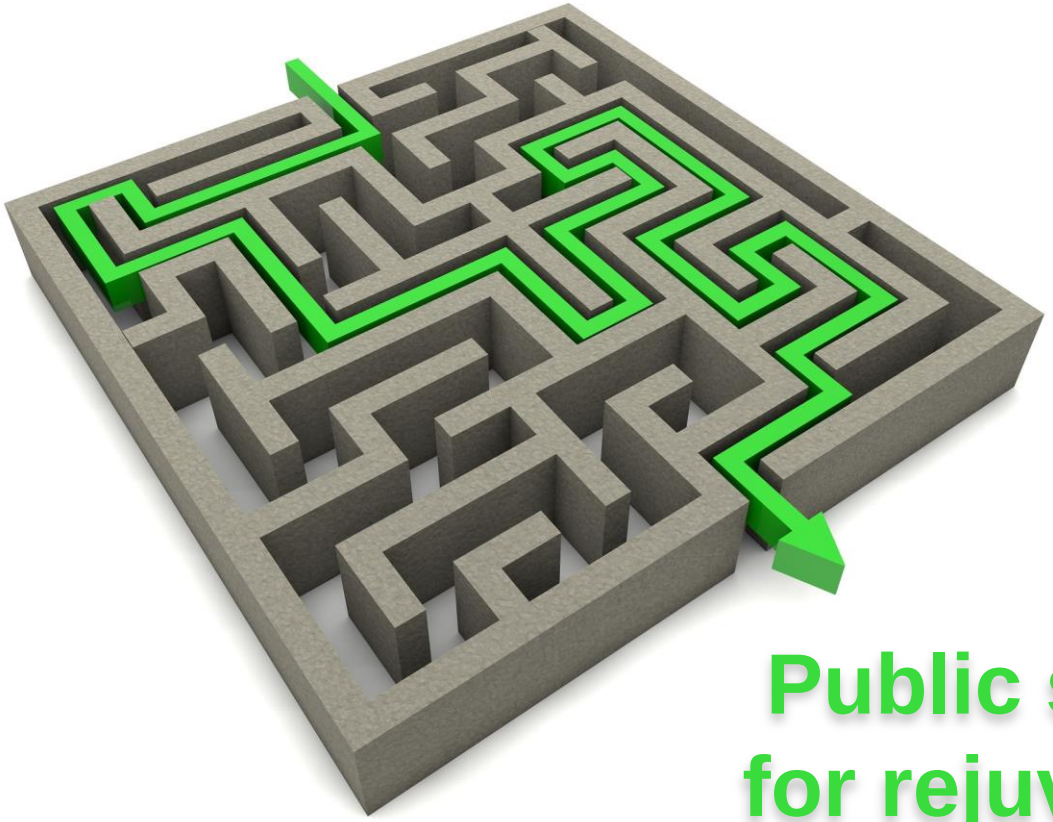
There are many more…

Going through a labyrinth: what typical biases can undermine your efforts?



Public support for rejuvenation technologies!

Typical biases you can face

- Diffusion of responsibility: someone else should help.
- Identifiable victim effect: no empathy for an undetermined group of people.
- Scope neglect: is aging really the main killer?
- Zero risk bias: better to focus on single diseases than to address the aging processes that cause it.
- Status quo bias: known conditions seem better than unknown/new ones.
- Hyperbolic discounting: the bigger the delay the less useful an offer seems, even if it is a cure to prevent age-related diseases.

Take away points

- Let's talk about the extension of the healthy period of life more often, especially with new people
- Let's explain to people that the technologies to address aging mechanisms will help treat and prevent age-related diseases
- Let's be more systematic in our education activities
- Let's openly discuss the concerns people have
- Let's take into account that we humans can be biased

Thank you!

If you have an interesting research project in mind to investigate the main mechanisms of aging or you would like to discuss other forms of partnership, you are welcome to contact us at info@lifespan.io

Welcome to www.lifespan.io to know more about our work

And you are welcome to subscribe to our newsletter!