

# Healthy aging

Citation for published version (APA):

De Majo, F. (2021). *Healthy aging: the heart of the matter is outside of the heart*. [Doctoral Thesis, Maastricht University]. Maastricht University. <https://doi.org/10.26481/dis.20210120fdm>

**Document status and date:**

Published: 01/01/2021

**DOI:**

[10.26481/dis.20210120fdm](https://doi.org/10.26481/dis.20210120fdm)

**Document Version:**

Publisher's PDF, also known as Version of record

**Please check the document version of this publication:**

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

**General rights**

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

[www.umlib.nl/taverne-license](http://www.umlib.nl/taverne-license)

**Take down policy**

If you believe that this document breaches copyright please contact us at:

[repository@maastrichtuniversity.nl](mailto:repository@maastrichtuniversity.nl)

providing details and we will investigate your claim.

## Healthy aging: the heart of the matter is outside of the heart

### Propositions

1. By 2050, one in six people in the world will be over the age of 65, compared to one in eleven registered in 2019. Population aging is expected to become the trademark of deep societal changes, affecting the job market, economy, healthcare systems and family structures. (In this thesis)
2. During aging, the progressive and intrinsic accumulation of structural and functional changes is defined as *senescence*. Senescence is a physiological process, as opposed to *senility*, which results from the accumulation of pathological changes in an organism. (In this thesis)
3. From the perspective of their transcriptomes, each accelerated aging murine model is manifesting the effect caused by the impairment of a certain cellular pathway and not an accelerated aged phenotype produced by aggravating one of the proposed molecular causes of senescence. (In this thesis)
4. (Aging-related) cardiovascular risk factors rarely manifest spontaneously in mice, which indeed do not display a higher incidence of cardiac diseases over their lifespan. This difference is arguably the main contributor to the disparity between mice and humans in their potential to develop age-associated cardiac diseases. (In this thesis)
5. The mammalian myocardium is a surprisingly resilient organ, in which both the regulation of gene expression and the DNA repair machinery are remarkably unaffected at any physiological stage of aging. (In this thesis)
6. We challenge the concept of “cardiac aging” or “cardiac senility” as representing merely a byproduct, a consequence, of a variety of age-related comorbidities (e.g. hypertension, vascular pathologies, metabolic syndrome) that largely originate external to the myocardium and are likely to weaken the heart in the elderly. (In this thesis)
7. *Spetta a ogni individuo il compito di costruire la propria scala di valori e cercare di attenersi a quella, non al fine di ottenere un compenso in terra o in cielo, ma con l'obiettivo di godere ora per ora, giorno per giorno, della straordinaria esperienza di vivere.* It is up to each individual to build their own scale of values and try to stick to it, not in order to obtain compensation on earth or in heaven, but with the aim of enjoying hour by hour, day by day, the extraordinary experience of living. (Rita Levi-Montalcini)
8. There is a beauty in discovery. There is mathematics in music, a kinship of science and poetry in the description of nature, and exquisite form in a molecule. Attempts to place different disciplines in different camps are revealed as artificial in the face of the unity of knowledge. All literate men are sustained by the philosopher, the historian, the political analyst, the economist, the scientist, the poet, the artisan and the musician. (Glenn T. Seaborg)
9. Let's avoid death in small doses, remembering always that being alive requires more effort than the simple act of breathing. Only a burning patience will lead to the attainment of a splendid happiness. (Pablo Neruda)
10. *Hos successus alit: possunt, quia posse videntur.* This success encourages: they can because they think they can. (Virgilio)