



Seven Theses about Medicine and the Future of Ageing



WHO Lunchtime Seminar, Sept 4 2012
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Introduction

Biogerontology is close to an application in medicine –
currently no safe and effective „anti-aging-medicine“

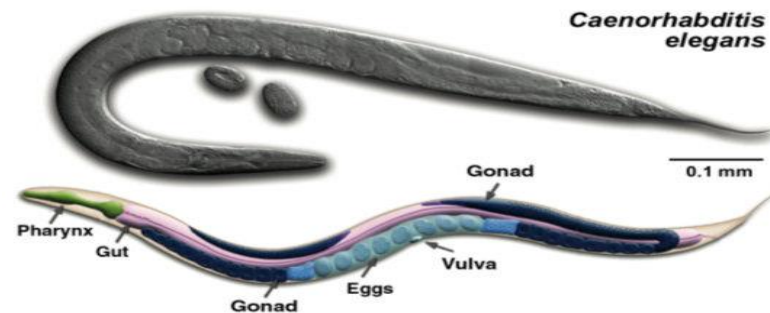
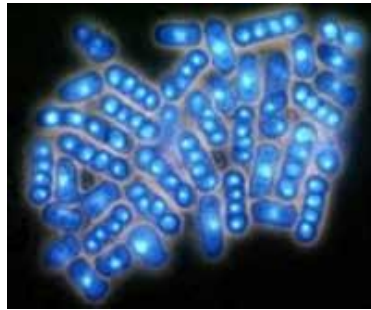
This might change...





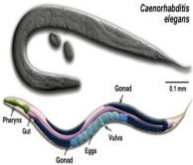

Thesis 1:

There will be new interventions into ageing in the near future.

Biology of Ageing: The ageing process is flexible and manipulable.





Organism	Lifespan increase	Methods
 <p>Yeast</p>	10 fold	Mutations, drugs, dietary restr. combined
 <p>Fruit Flies</p>	60-70%	Mutations and drugs
 <p>Nematodes</p>	10 fold	Mutations and drugs
 <p>Mice</p>	100 %	Mutations, drugs and DR combined.



Realistic goal:

Similar mechanisms across species-
borders:

In humans, 7 years life-span extension
in the next 40-50 years.

More healthy life years, compression of
morbidity

Longevity Dividend, Butler, Olshansky, Miller

Increase in funding:

E.g. NIA in the USA,
166.231.000 US\$ for basic
biology of aging.

(Budget request 2012)





Thesis 2:

The new ageing medicine will be a complex, regular, and personalized service.



Aging in humans is a complex interaction of **genetic** (estimates range from 15-35%), **environmental**, **behavioral**, **social** with a strong stochastic element.

Individuals age differently and organs or tissue in individuals as well.



Possible Methods:

Drugs (CR-Mimetics), Genetic interventions,
Stem Cells (regenerative medicine),

Personalized, regular medical service

(e.g. AMA 2009 Rejuvenating Aging Research)



Thesis 3:

**Individual benefits of biological ageing
for a fully human life are necessarily
controversial.**



Arguments for an individual benefit of physical ageing:

- the meaning of finitude
- the naturalness of the current life cycle.
- old age as a necessary experience to complete a fully human life.





These arguments lack:

- empirical evidence.
 - a sufficient justification of the underlying conception of the good.
 - a sufficient recognition of social pluralism and the variability of ageing.
-



Critics overlook the
popularity of
anti-aging-medicine
(without scientific
evidence).





Thesis 4:

**Access matters from a perspective of
distributive justice.**



Goods and capabilities related to slower ageing

are relevant from a justice perspective

(better well-being in relation to age-related
changes, physical functioning, life time)

▪



Thesis 5:

Access will be limited.



Comprehensive and complex set of interventions
will be accessible according to the ability to
pay.

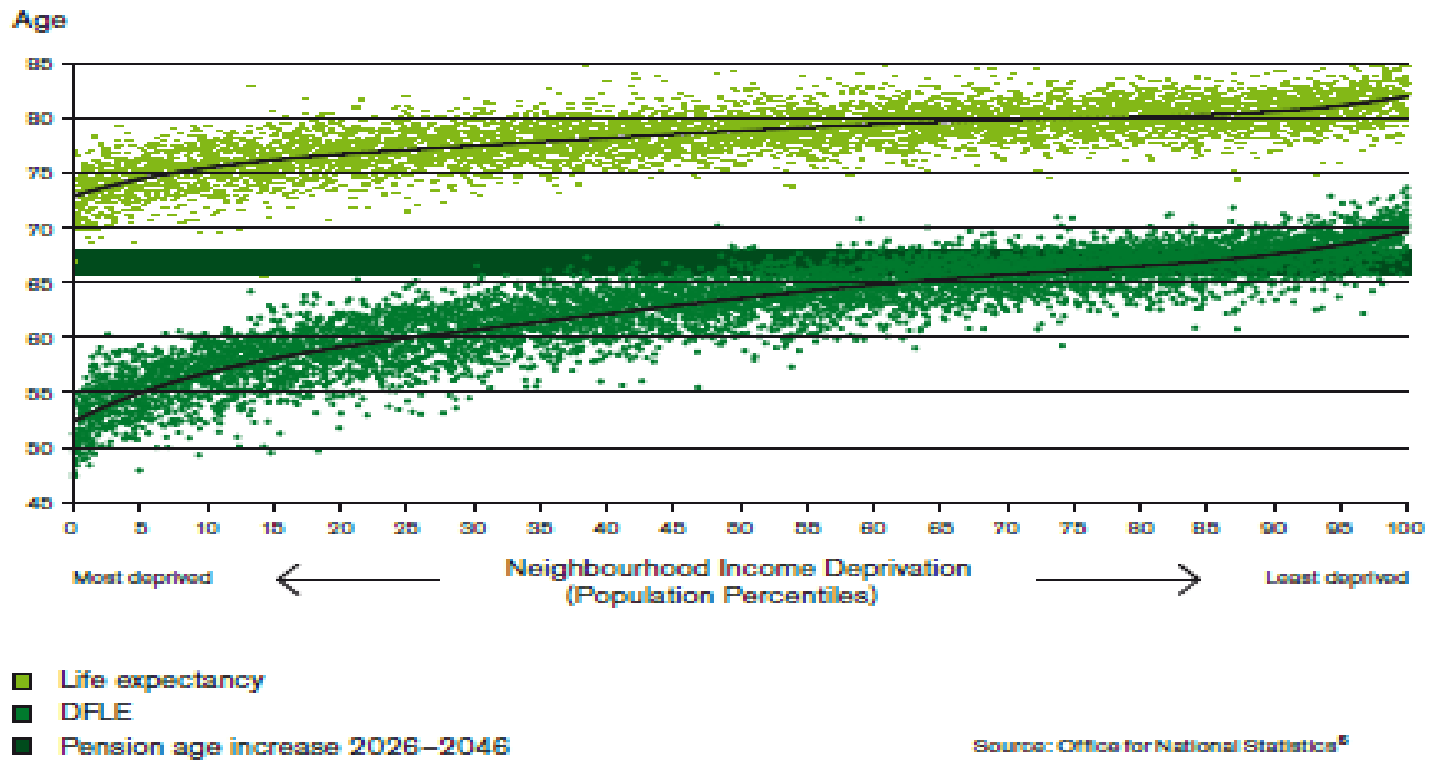


Thesis 6:

National and global inequalities in healthy life expectancy will rise.



Figure 1 Life expectancy and disability-free life expectancy (DFLE) at birth, persons by neighbourhood income level, England, 1999–2003





Life expectancy at birth:
around 80 in many HIC,
around 50 in many LIC.

Many diseases of LMIC are underresearched
(10/90-gap)

This difference is likely to increase!



Thesis 7:

Carefully set priorities in public funded research and a public dialogue are necessary.



What kind of duties result for national research funding?

Consequences for research into aging?



3 Options (Buchanan):

Prohibition:

stopping research exacerbating global health inequalities.

Creation:

compensation for such research to finance other priorities.

Diffusion:

focus on global availability of new interventions



A Public dialogue:

Necessary to raise the awareness about the potential benefits and risks of biogerontological research!



Current project:

Discourse ELSA*: Biogerontology

Ethical, legal & social implications of biological ageing research
and its potential medical applications



- **Aim:**

**Stimulating public discourse & research
on ethical, legal & social aspects
of biogerontology & its potential medical applications**

→ **8 courses for potential multipliers**
(~12 sessions of 90 min)



More information (in German)

<http://www.izew.uni-tuebingen.de/forschung/ethik-und-bildung/projekt-diskurs-biogerontologie.html>



Thank You!

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