

Who wants to live forever? It's a matter of maintenance

 By [Nicci Botha](#)

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Thanks to lifestyle and medical advancements, the biblical prescription of three score and 10 - or 70 years - as the human lifespan has become a little blurred. As a species we are living longer. But whether this is a desirable goal boils down to quality of life.

I would love to live to 100 or beyond, but I would rather do it with as little of the physical and mental degeneration associated with old age as possible. In other words, I would prefer to hit my century with my marbles still reasonably intact (mild eccentricity allowed) and still fairly mobile.



Aubrey de Grey

Dr Aubrey de Grey is a gerontologist and chief science officer of the SENS Research Foundation says the outer limit for human life could in fact expand to 1,000 years, it's just a matter of maintenance.

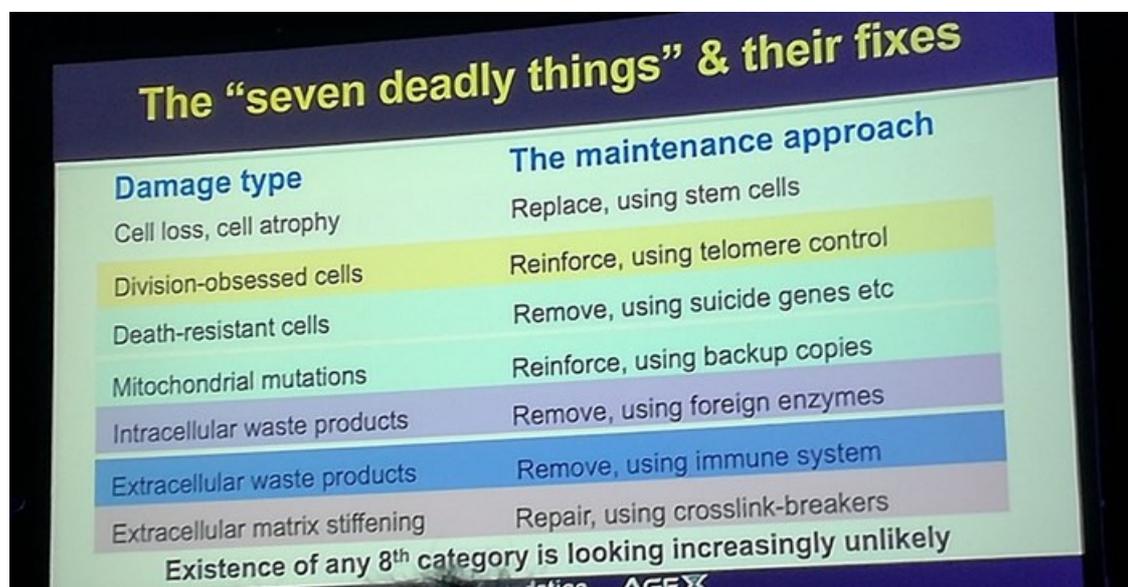
He says that ageing can be summed up in three words:

1. metabolism – the lifelong chemical process which keeps us alive
2. damage – the accumulative consequence of metabolism
3. pathology – the result of that damage that manifests in late life

The conventional medical approach has been to treat pathology, such as chronic diseases associated with ageing. “Why we are continuing to pursue this avenue is just brain dead,” he says.

He advocates another approach of “uncoupling metabolism from the pathology by going in to repair the damage”, saying the human body is a machine, albeit more complex than most, and like any machine regular maintenance will keep it running optimally.

To facilitate this maintenance programme, De Grey’s research has come up with “Seven deadly things and their fixes”.



Damage type	The maintenance approach
Cell loss, cell atrophy	Replace, using stem cells
Division-obsessed cells	Reinforce, using telomere control
Death-resistant cells	Remove, using suicide genes etc
Mitochondrial mutations	Reinforce, using backup copies
Intracellular waste products	Remove, using foreign enzymes
Extracellular waste products	Remove, using immune system
Extracellular matrix stiffening	Repair, using crosslink-breakers

Existence of any 8th category is looking increasingly unlikely

His foundation is working on different rejuvenation therapies based on these pillars, has published widely, and has spun out a “huge number of start ups” as a result And the reason why other experts aren’t doing this type of research boils down to funding, as many traditional funders are reluctant to finance research associated with ageing.

“We’re not working on longevity, but on stopping people from being sick. Longevity is a side effect of this,” he points out.

“Rejuvenation therapies may never be perfect. This first generation may only give people in their middle age another 30 years. However, that would buy us time to come up with better therapies to re-rejuvenation the same people.”

And it's not about fixing everything at once, rather something he terms "longevity escape velocity". That is maintenance at the minimum rate to stave off the problem.

ABOUT NICCI BOTHA

Nicci Botha has been wordsmithing for more than 20 years, covering just about every subject under the sun and then some. She's strung together words on sustainable development, maritime matters, mining, marketing, medical, lifestyle... and that elixir of life - chocolate. Nicci has worked for local and international media houses including Primedia, Caxton, Lloyd's and Reuters. Her new passion is digital media.

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