

# Longevity: does what goes up always have to come down?

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I have heard it said that a life without indulgences is not actually longer, it just feels longer. Sophie Tucker, when asked the secret to longevity, replied: 'Keep breathing'. Even if it were that simple it probably doesn't tell the whole story. A different perspective was gained one day while admiring a Chinese rug. The question arose as to what the two Chinese characters woven into the rug meant. We were told that one was a wish for a happy life and the other for a long life, and best of all blessings was for both to come together.

This interest in the factors which predispose toward a longer life was further stimulated by a recently published article that found one's attitude about aging had a significant effect on life expectancy.

'This research found that older individuals with more positive self perceptions of aging, measured up to 23 years earlier, lived 7.5 years longer than those with less positive self perceptions of aging. This advantage remained after age, gender, socioeconomic status, loneliness, and functional health were included as covariates'.<sup>1</sup>

This 7.5 years gain compares with years of life gained through having a lower blood pressure (four years), lower cholesterol (four years), and lower body mass index, not smoking and exercise (all 1–3 years). Such a finding challenges us to be careful with the images we paint in

our culture regarding the aging process and the way we treat the aged. In this youth centred culture it may be that painting a negative image could negatively impact upon how well we age.

'Every man desires to live long; but no man would be old'.

Jonathan Swift,  
Thoughts on Various Subjects

This article stimulated a search into what factors are associated with longevity. Some of the original work was done into longevity, maintaining function and leading productive and active lives. This aim for a better life as well as a longer life is what James Fries meant when he said that we need to: 'add life to years, not just more years to life'.<sup>2</sup> One notable series of studies was the long term follow up of people in the Alameda County studies. These early studies did not inquire as much into the mental and emotional aspects of aging but rather focussed on the physical factors behind our aging. The original Alameda research identified seven aspects associated with poorer health and shorter life.<sup>3,4</sup> These were:

1. excessive alcohol
2. smoking
3. little physical activity
4. being obese
5. sleeping fewer or more than 7–8 hours
6. eating between meals
7. not eating breakfast.

Subsequent analysis also revealed that social connectedness and relationships were also highly significant.<sup>5</sup>

A more recent review of successful aging revealed a number of factors which could be identified at the age of 50 years which were highly predictive of not only a longer life but also a healthier one.<sup>6</sup> They confirmed the previously mentioned factors such as smoking and alcohol but also identified education, 'mature coping mechanisms' and depression as significantly predictive in terms of chances of being a 'happy well' person or a 'sad sick' person. Happiness and wellness were strongly associated independent of other variables. One might suggest that people were unhappier because they were less well, but the data suggest that the presence of unhappiness predated any demonstrable illness or disability.

Another factor found in other studies influencing longevity, is the role of meaning. For example, one population study over nine years showed that all cause mortality was significantly reduced and life expectancy increased (75 years compared with 82 years) for regular church goers. Again, the findings could not be explained by the accepted lifestyle and social variables.<sup>7</sup> One may or may not wish to prescribe church going but the role of meaning, especially in helping us to cope with life's vicissitudes, has perhaps been underrated.

Life expectancy in nearly all countries of the world has gone up significantly over the past century (Table 1).<sup>8</sup> Figures from the US are similar to Australia although Australians overall probably have two years longer life expectancy. This increase in the 20th century is not universal however, as many troubled countries especially Africa, have appallingly low life expectancy. Where life expectancy in Japan (78 for men and 84 for women), Sweden (77, 82) and Australia (77, 82) are the world's highest, Sierra Leone (33, 35), Niger (37, 40) and Malawi (37, 39) have the world's lowest life expectancies.<sup>9</sup> Causes no doubt reflect the social, environmental and economic conditions in respective countries. A simple redistribution of some of the wealth would no doubt make both situations healthier, because wealthier countries tend to suffer diseases of over consumption whereas poorer countries suffer diseases of under consumption. In westernised countries we find that ischaemic heart disease and cancer are the main causes of DALYs (disability adjusted life years) for both men and women. Road accidents, HIV and substance abuse make up the top five for men; and depression, cerebrovascular disease and osteoarthritis make up the top five for women. The world picture is somewhat different with malnutrition, poor water, unsafe sex, tobacco and alcohol abuse being the top five causes of DALYs. In Australia depression is the major cause of nonfatal burden of disease and mental disorders overall account for 30% of the burden of disease.<sup>10</sup> This however, does not take into account the role of depression being an independent risk factor for various illnesses, notably heart disease.<sup>11</sup>

Significant increases in longevity in developed countries have not been strongly related to medical advances but rather to public health and sanitation measures such as water supply, sewerage, food and housing. Where these fall down there is little that a health system can do. Access to basic health care will no doubt

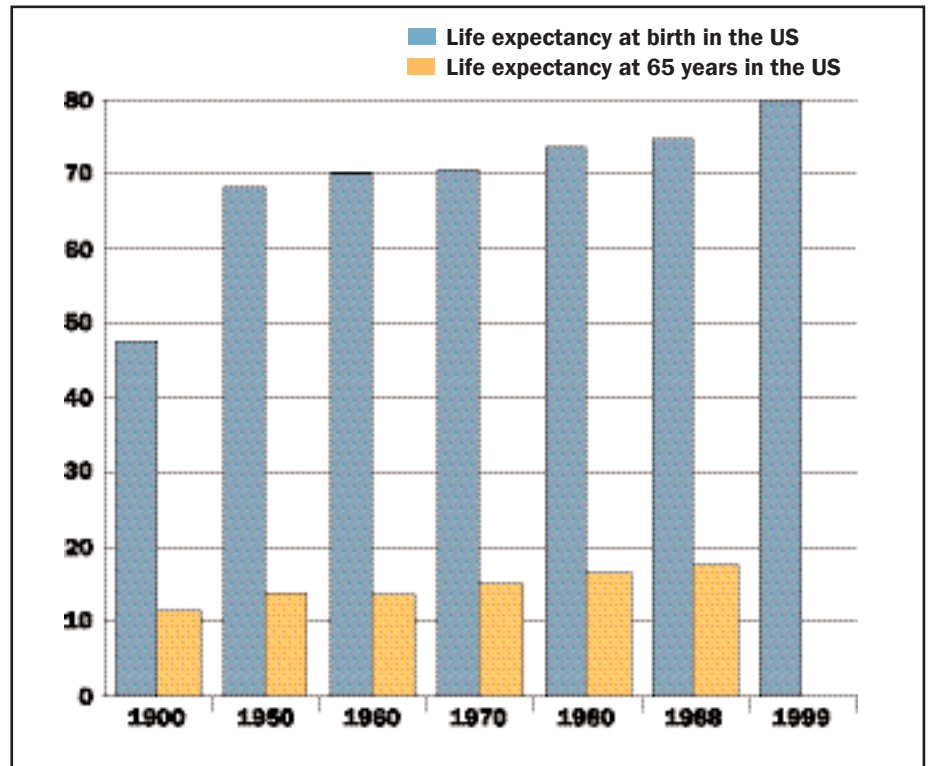


Figure 1. US life expectancy

be a factor but there has always been a poor relationship between money spent on healthcare and longevity. More dollars do not necessarily mean better health.

### Where are we now and where are we headed?

The past century has been an optimistic one with regard to greater life expectancy. Every prediction seems to suggest we will all be living longer in the future. But is this optimism well placed? Perhaps we should take a moment to reflect. Those living to an average age of 82 years now, were born in 1920 under very different social, economic and environmental conditions to what we are now experiencing. Perhaps smoking rates will further reduce and diet and housing will continue to improve although there are many worrying signs that they may be worsening. What does a person born in the 1990s and 2000s have to navigate now that they were not subject to previously? One wonders what the health of western countries will be like in the future. Will life expectancy continue to go up?

The negative impact of a range of lifestyle and mental health factors may be underestimated and if so, we may see life expectancy peak between 2020 and 2030 and then begin to decline as people born in the 1960s and 1970s begin to experience some of these negative effects. Issues that may well loom larger than we think could include the following:

- increasing levels of obesity, inactivity and a growing incidence of diabetes associated with a poor diet, increasing amounts of junk food eaten and an increasing reliance upon sedentary pastimes such as television and computers
- diminishing water and air quality
- increasing abuse of substances, illicit and prescribed
- increasingly levels of stress, anxiety and depression, especially in our young, has an impact on growing suicide rates and will have an increasingly important effect on long term physical health including CHD
- the economic effects of over crowding, poverty and inequity especially for urban populations

- the increasing long term impact of social isolation associated with relationship, marital and community disharmony
- the reduction in the protective effect of spirituality on mental and physical health for many people
- with increasing rates of medical prescribing and technology there are also increases in medical misadventure and interactions
- the potentially negative impact of some forms of media, music and information technology on long term mental health.

This of course does not mention the potential 'wild cards' of self inflicted disasters such as genetically modified foods, genetic engineering, xenografts leading to infections jumping across species, global warming or the impact of war and bioterrorism. None of the things listed above are inevitable but it will take a concerted effort to reverse some worrying trends. The assumption however, that longevity will continue to soar is a dubious one. Gains made in the past century were largely not the result of wonderful technology but due to simple public health measures. One suspects that we cannot expect technology to save us if we ignore the basic pillars upon which good mental and physical health of communities and individuals are built. The gains of the past century were hard won but one suspects they can also be easily lost.

## References

1. Levy B R, Slade M D, Kunkel S R, Kasl S V. Longevity increased by positive self perceptions of aging. *J Pers Soc Psychol* 2002; 83(2):261–270.
2. Fries J. Aging, natural death, and the compression of morbidity. *N Engl J Med* 1980; 303:130–135.
3. Human Population Laboratory. Alameda County Population, 1965. California Department of Public Health. Series A, No. 7, 1966.
4. Wiley J, Camacho T. Lifestyle and future health: evidence from the Alameda County Study. *Prev Med* 1980; 9:1–21.
5. Seeman T, Kaplan G, Knudsen L, et al. Social network ties and mortality among the elderly in the Alameda County Study. *Am J Epidemiol* 1987; 126:714–723.
6. Valliant G, Mukamal K. Successful aging. *Am J Psychiatry* 2001; 158(6):839–847.
7. Hummer R, Rogers R, Nam C, et al. Religious involvement and US adult mortality. *Demography* 1999; 36(2):273–285.
8. Health United States. In: Breslow L, Breslow N. Health practices and disability: some evidence from Alameda County. *Prev Med* 1993; 22:86–95.
9. Michaud C, Murray C, Bloom B. Burden of disease: implications for future research. *JAMA* 2001; 285(5):535–539.
10. Mathers C D, Vos E T, Stevenson C E, Begg S J. The Australian Burden of Disease Study: measuring the loss of health from diseases, injuries and risk factors. *Med J Aust* 2000; 172(12):592–596.
11. Rozanski A, Blumenthal J, Kaplan J. Impact of psychosocial factors on the pathogenesis of cardiovascular disease and implications for therapy. *Circulation* 1999; 99(16):2192–2217.

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