

## Chapter 10

# Successful Aging

*A new vision of ageing was proposed [at the Valencia Forum 2002] that accepts the realities of a fundamental genetically driven bio-molecular process leading to death but with the prospects of achieving healthy, active, productive, successful and positive ageing to the very end through lifestyle modifications and interventions that work.*

(Andrews 2002)

### 10.1 The New Paradigm?

Concerns with securing individual welfare in aging societies have evoked a wide range of ideas about what is essential, including promoting ‘active’, ‘healthy’, ‘positive’, ‘productive’, ‘successful’ and ‘optimal’ aging. All have applications in research and policies concerned with improving prospects for individual older people and easing the transition to an older population. This partly reflects that the meanings of the terms overlap: for instance the World Health Organization’s ‘active aging’ has similarities with ‘healthy aging’ and ‘positive aging’ in national policies. ‘Successful aging’ also incorporates a range of ideas and, in some countries, it has been prominent as a research-based, policy-relevant concept.

Successful aging is relatively new but a classical writer foreshadowed some of the ideas more than 2,000 years ago, producing “perhaps the first powerful statement on the nature of good ageing” (Baltes and Baltes 1990: 2). In 44BC, the Roman statesman and philosopher Marcus Tullius Cicero wrote an essay entitled *De Senectute* (‘On Old Age’), in which he described the means of preserving health and vitality in later life (Cicero 44BC; Jarcho 1971). Cicero was a witness to the assassination of Julius Caesar in the same year and he himself was brutally murdered in 43BC at the age of 63. The following quotation illustrates the lifestyle practices that Cicero advocated for the aged but had little opportunity to test:

But it is our duty, my young friends, to resist old age; to compensate for its defects by a watchful care; to fight against it as we would fight against disease; to adopt a regimen of health; to practice moderate exercise; and to take just enough of food and drink to restore our strength and not to over-burden it. Nor, indeed, are we to give our attention solely to the body; much greater care is due to the mind and soul; for they too, like lamps, grow dim with time, unless we keep them supplied with oil. (Cicero 44BC/1953: 45).

Contemporary interest in successful aging emerged during the 1950s from the then new optimism in aging studies based on growing recognition of the potential for betterment in the circumstances of older people (Baltes and Baltes 1990: 4). Initially, successful aging was associated with activity theory – an early attempt at providing a description of, and prescription for, ‘good’ aging (Havighurst and Albrecht 1953; Havighurst 1961, 1963; McPherson 1990: 134). This was seen to be achievable through maintaining roles and activities into later life or commencing new ones. One of the originators of activity theory, Robert Havighurst (1963: 308), defined successful aging as “satisfaction with present and past life”. A major study of successful aging, edited by the Baltes, appeared in 1990, drawing on European longitudinal studies of aging. Contributors to the volume noted a lack of consensus about the term, and identified various definitions, including: “an effective adaptation process”, “life expectancy and health”, “adaptive competence” and “life satisfaction”. The diversity of meanings reflects the varied emphases of different research perspectives. The Baltes’ own theory of successful aging – ‘selective optimization with compensation’, discussed later in this chapter – is important because of its general relevance to the older population, rather than mainly to a subgroup with the potential to achieve superior health.

Yet particularly influential across a range of academic disciplines and policy contexts has been the concept of successful aging established in publications by Rowe and Kahn (1997, 1998) and their colleagues, whose research interests spanned a number of social and medical research fields. Some describe their ‘successful aging’ as ‘the new paradigm’ or ‘the new gerontology’ (Rowe and Kahn 1998: Xiff; Holstein and Minkler 2003: 787) and express the main objective of gerontology as enabling older people to age successfully (Tornstam cited by Torres 1999: 34). Others view their successful aging as an extension of activity theory, combining the characteristic of being active with good physical and cognitive function and an absence of disease (Menec 2003: S74). Interest in Rowe and Kahn’s successful aging gained momentum because of its contribution to a new positive direction for the study of aging, superseding the ‘old paradigm’ of ‘decline and loss’, which gave particular prominence to impaired functioning (Holstein and Minkler 2003: 787).

Despite the seeming emphasis on ‘success’ and the origin of the concept in success-oriented American culture, it is primarily a concise label for a set of actions conducive to maintaining relatively high levels of physical, mental, and social functioning. As a policy option, it envisages that individuals have the potential to take greater responsibility for pursuing lifestyles that sustain good health – with assistance from public education and health professionals. Rowe and Kahn (1987, 1997, 1998) argued that research on people experiencing ‘normal aging’ as distinct from ‘diseased aging’ had overlooked heterogeneity within the former group. They divided

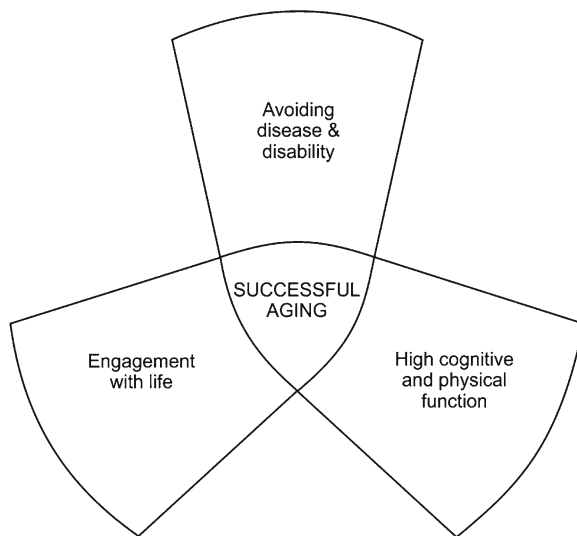
the 'normal aging' or 'non-diseased' group into two categories namely 'usual aging' ('non-pathologic but high risk') and 'successful aging' ('low risk and high function'). Usual aging thus referred to the elderly who are functioning well but are at substantial risk of disease or disability – presumed to be a high proportion of all older people (Rowe and Kahn 1998: 76).

Risks ensue from factors such as smoking, being overweight and having high blood pressure. In distinguishing between usual and successful aging, Rowe and Kahn sought to redirect attention to the nature and causes of successful aging and the appropriate interventions to foster its greater prevalence (Rowe and Kahn 1997: 433). Thus they challenged the expectation that advancing age inevitably brings decline and sought to focus attention on the reasons for the best outcomes. Instead of viewing usual aging – with its high risk of disease and disability – as unavoidable, they argued that many usual aging characteristics were due to lifestyles and could be modified, or even reversed (*ibid.*: 434 and 437). The authors therefore disputed the view that the increasing risk of disease and disability with advancing age is largely an inevitable, genetically determined consequence of aging (*ibid.*: 434). They emphasized that usual aging characteristics are modifiable through diet, exercise, certain medications and social participation. In relation to genetic diseases that shorten life, including cancers and familial high cholesterol syndromes, they contended that “genes ... are certainly less than half the story” (Rowe and Kahn 1998: 4). Similarly, in relation to the role of genetics in impaired physical and mental function they concluded, from studies of twins, that heredity is less important than lifestyle and environment (*ibid.*: 41).

Rowe and Kahn's evidence originated from their \$US10 million longitudinal study in the United States (1985–1994) which, instead of giving particular attention to age-related losses, diseases and disabilities, focused instead on people who were aging well. The research investigated the characteristics of a group of 1,200 people, aged 70–79 at first contact, who were assessed as being in the top third of the American population in terms of their physical and mental functioning. The aim was to investigate how they achieved this. Around 80 subjects in each of the middle and lower thirds were included for comparison. The same people were studied again 3 and 8 years later (*ibid.*: 171). Information was collected on health, physical and cognitive functioning, together with social and psychological characteristics. Blood and urine samples were also obtained and laboratory studies and literature searches supplemented the work. Thus the overall findings arose from a substantial cross-disciplinary research effort.

The longitudinal survey showed that after 8 years, half of the participants had maintained their health and a quarter had improved it (*ibid.*: 173). The factors underlying these results supported the development of a scientifically-based prescription for attaining not just good but optimal outcomes for individuals in their later years. Numerous studies in different countries have corroborated aspects of the findings. Successful aging emphasizes that many of the losses associated with usual aging are not 'normal' aspects of aging but result from risk-taking behaviour, such as poor diet and lack of exercise, and are subject to alteration. The authors envisaged that ongoing research would increase knowledge of how to reduce the risk of adverse events and how to enhance resilience to them.

**Fig. 10.1** Components of successful aging  
(Source: After Rowe and Kahn 1997: 434)



As a proposed new paradigm for research on aging, successful aging represents an important alternative emphasis to management of decline and loss. The concept pioneered the notion that extension of healthy, active life is possible through lifestyle modifications – sometimes in conjunction with use of medications. It also contributed to the body of research that highlights the potentially enormous personal and social benefits of preventative strategies. Rowe and Kahn’s successful aging offered a prevention model, a means of avoiding decline and loss through modifying individual behaviour (ibid.: 787). It recognized that, hitherto, there had been ‘serious underestimation of the effects of lifestyle and other psychosocial factors on the well-being of older persons’ (ibid.: XII). Rowe and Kahn defined successful aging as the ability to maintain three key characteristics: (i) low risk of disease and disability, (ii) high physical and cognitive function, and (iii) active engagement with life, that is, sustained participation in social and productive activities (Fig. 10.1). They saw a hierarchical ordering in the three components, each making the next more attainable; the combination of all three represented the full achievement of successful aging. Successful aging meant aging well, rather than not aging at all (ibid.: 53–55 and 68).

## 10.2 Avoiding Disease and Disability

Regarding the first of the components of successful aging, avoiding disease, the research of Rowe and Kahn and their collaborators pointed to exercise as “perhaps the single most important thing an older person can do to remain healthy”

(Rowe and Kahn 1998: 137). They noted that it helps to prevent cardiovascular disease, high blood pressure, diabetes, some cancers (e.g. cancer of the colon) and multi-infarct dementia, as well as reducing arthritis pain and disability and the risk of falls –through improving balance and strength. Other strategies were refraining from smoking, taking appropriate medications and maintaining a healthy diet and weight control. Their research indicated that stopping smoking brought an abrupt reduction in the risk of coronary heart disease (CHD), although the lung cancer risk persisted longer. Medications having an important role also in disease avoidance include treatments for hypertension, together with vaccines for influenza, which is more likely to have serious consequences for the elderly. They further identified a wide range of health-preserving dietary practices including avoidance of dehydration, the adverse effects of which are more severe for older people, especially during illnesses. The authors observed that it is never too late to benefit from lifestyle changes and that potent risk factors, such as high blood pressure, can be managed effectively through diet, exercise and medication (*ibid.*: 32 and 36).

In Europe, about one half of all premature deaths, and about one third of cancers are thought to be diet-related and often preventable, such as through reducing consumption of high fat and high energy foods and eating more vegetables and fruit. The risk factors are more prevalent in the lower socio-economic groups (Robertson et al. 1999: 181–185). Another study of people aged 70–90 in a number of European countries over a period of 10 years found that adherence to a Mediterranean diet and other healthy lifestyle practices was associated with a more than 50% reduction in death rates (Knoops et al. 2004; see also Tables 4.1 and 4.2).

### 10.3 High Cognitive and Physical Function

In relation to the second component of successful aging, the research linked maintenance of high physical functioning with other indicators of health, such as high cognitive functioning and receiving emotional support from family and friends. They noted that declining physical functioning was associated both with advancing age and with low income (Rowe and Kahn 1997: 437). The authors did not elaborate on the implications for physical functioning of disadvantaged social status, but they did so in relation to maintaining high cognitive functioning.

They identified four ‘predictors’ of maintenance of cognitive function over time, although together these explained only 40% of the variance in cognitive test performance among initially high functioning 70–79 year olds. Among the four predictors of maintenance of cognitive function, education was the most important: the likelihood of maintaining high cognitive functioning rose as the number of years of schooling increased. Suggested reasons were: “a direct beneficial effect of education early in life on brain circuitry and function, and the possibility that education is a proxy for life-long intellectual activities (reading, crossword puzzles, etc.) which might serve to maintain cognitive function.” Thus mental exertion was found to be protective against decline. Physical exertion was also a predictor of high cognitive

functioning. Exercise is believed to enhance memory as well as stimulating thought and protecting against depression (ibid.: 436–437; McCarthy 2006: 135). The other two predictors were a measure of lung function – the pulmonary peak expiratory flow rate – which ranked second, ahead of physical activity – and the personality measure of ‘perceived self-efficacy’, which ranked fourth. Self efficacy, or what the authors later called the “can-do factor”, denotes individuals belief in their own ability to solve problems, meet challenges and influence the course of events in everyday life (Rowe and Kahn 1998: 186).

In their 1998 book the authors added a further predictor of “strong mental function” namely a strong social support system. Social bonds, with family, friends and organizations, help to keep people active and emotionally secure as well as lessening the likelihood of depression, alcoholism and other damaging health effects of stressful life events (ibid.: 215–222). The research of Rowe and Kahn and their colleagues further indicated that ‘plasticity’ or capacity for positive change persists in old age and cognitive function and memory can be enhanced through training and practice in solving problems, although the younger the subjects the more effective the interventions. They concluded that about half of all mental loss with age (e.g. verbal skills, spatial skills, thinking speed and memory) can be attributed to genetic influences, while the other half is related to lifestyle and environment (ibid.: 90). The most common age-related changes in cognitive function are minor changes in memory, as distinct from dementia.

## 10.4 Engagement with Life

The third component of successful aging, ‘active engagement with life’, built on Freud’s assertion that ‘love and work’ are the essentials of human life (ibid.: 234). Active engagement with life includes social relations – contacts, support and assistance – together with productive activity of social value, whether paid or unpaid, such as voluntary work or caring for a relative (Rowe and Kahn 1997: 433–434). Rowe and Kahn emphasized “the importance of close relationships with others and of regular activities that give meaning and excitement to life.” Exchanging social support, through being part of a social network, contributes to health and longevity whereas social isolation is a risk factor for health. Both emotional and instrumental support can benefit health but no single type of support is uniformly effective. Effectiveness depends on the appropriateness of the supportive acts to the requirements of the situation and the person (ibid.: 438). In some circumstances, instrumental support, for example, may reduce physical performance as people become unnecessarily dependent on others. Unneeded or unwanted support, or the wrong kinds of support, “can cause more harm than good, reducing other people’s independence and self-esteem.”

While unpaid activities are sometimes ignored in assessments of economic productivity, most older people in the successful aging research made productive contributions through volunteer work or informal help-giving. The authors defined

productive activity as: “any activity, paid or unpaid, that generates goods or services of economic value” (Rowe and Kahn 1998: 237). They found that people in good health and participating actively in social networks were more likely to be engaged in productive activities. Similarly, education was also associated with productive work, whether because of better health, higher incomes and social contacts, or because education fosters requisite values and habits. Society, however, tends to underestimate the value of the contributions of older people, partly because there is no suitable job description:

Older men and women who run households, care for family members and friends, or volunteer in churches and civic organizations often describe their occupations as “nothing,” or “just a housewife” or “I’m retired”. These self-deprecating responses underestimate the value of what older people really do, and the importance of their contributions to society. (ibid.: 66).

The significance attached to active engagement with life coincides with the long-held emphasis in social gerontology on the social integration of the aged. Social engagement also figures prominently in the determinants of health described in the work of Marmot and Wilkinson and their colleagues. A major finding is that two of the most powerful obstacles to population health are low social status and poor social relations, because of the high proportion of the population exposed to such risks (Marmot and Wilkinson 1999, 2006). A 6 year study in Finland found that people at increased risk of death had no spouse, few friends or others with whom they could exchange support, low participation in organizations and low quality of social relationships (Stansfeld 2006: 154). Other studies have confirmed the life-enriching benefits of social integration versus the life-impoverishing and life-curtailling effects of social isolation (Rowe and Kahn 1997: 437). Communities play a vital role in facilitating social engagement through developing ‘community capacity’ or social capital enabling people to join social networks, participate in community life and give and receive support.

An interesting finding from a small data set on cohorts of white American males, followed through time since adolescence, was that ‘good’ and ‘bad’ aging from age 70–80 could be predicted from variables assessed before age 50, especially absence of alcohol and tobacco abuse, good physical health, absence of a major depressive disorder and a stable marriage (Vaillant and Mukamal 2001: 839). Although the population was not representative of the population at large, the study supported the view that a small number of protective behaviours can, in many cases, underlie successful ageing, or what Vaillant (2002) and others have also called ‘aging well.’

## 10.5 Limits of Successful Aging

Rowe and Kahn’s successful aging is an important approach to addressing issues in aging societies, particularly because of its emphasis on the potential to promote improvements in individual and population health. It proposes ways that may enable more people to enjoy healthier and longer lives. Yet there are limits to the concept

because it does not identify all important influences on health, longevity and activity. Successful aging specifies an ideal, rather than what is proven to be widely attainable at all older ages, and there are varied interpretations of what should be deemed 'successful.' In the wider literature on successful aging some define it narrowly in terms of maintenance of fairly robust physical and mental health (Jorm et al. 1998), while others define it more broadly in terms of high functioning across a variety of domains – mental, physical, social and economic. The former approach relies especially on objective measures of functioning, while the latter gives more emphasis to subjective perceptions, including a sense of well-being, life satisfaction, morale, and subjective evaluations of health and social circumstances (Gatz and Zarit 1999: 396). According to the stringent, objective, definition of successful aging only a small minority of older people attain advanced ages without age-associated disease or physiological deterioration. Hence a policy goal of producing health elites is too narrow for the aged population at large. For example, a review of studies found that the prevalence of healthy aging is low when using Rowe and Kahn's criteria for successful aging – in several studies it was 25% at age 70 and 6% at age 80 (Peel et al. 2004: 118). Factors associated with it varied between different populations, but included social integration, productive work, intelligence, educational and career attainment and financial resources. The review found no clear differences in prevalence between men and women.

The dichotomy of successful aging and usual aging, with the latter attributed particularly to unhealthy lifestyles, omits what may be a large group who have health problems that are unrelated to lifestyles, including many cases of arthritis, deteriorating eyesight, hearing loss and dementia. Some consider that genetic influences account for nearly a quarter of variations in length of life and are responsible for more ill effects as higher proportions reach older ages (Garry 2001). Rowe and Kahn (1997: 434–436), in contrast, argued that the relative contribution of genetic factors to disease decreases with age, while the influence of non-genetic factors increases. As evidence they cited studies of twins which suggested that, with advancing age, there was a decline in the influence of genetic influences on the risk of cardiovascular and cerebrovascular diseases.

Another limit is the concept's neglect of well-being and life satisfaction as considerations important in their own right. Rowe and Kahn (1998: 229) made only brief mention of well-being – as an outcome of social support. Successful aging implies that people without high functional capacity are aging unsuccessfully (Glass 2003: 382). Yet even for very old people with impaired health, promotion of a sense of well-being is a key goal. Research in California found, in a sample of people aged 65–99 years, that 50% were aging successfully in terms of self-rated measures of well-being, compared with only 19% in terms of Rowe and Kahn's criteria (Strawbridge et al. 2002). The authors called for better understanding of the criteria that older people use to assess their own aging. Similarly, a survey of people aged 85 and over in Leiden, the Netherlands, found that only 10% satisfied all the criteria for Rowe and Kahn's successful aging, yet 45% had optimal scores for subjective well-being – social contact was particularly important in this (von Faber et al. 2001: 2694 and 2699). Emphasis on Rowe and Kahn's successful aging, to the neglect of



well-being and life satisfaction, could inadvertently contribute to ageism and fears of aging (Holstein and Minkler 2003: 792–793). Compounding measurement difficulties, however, has been the use of ‘life satisfaction’ interchangeably with terms such as morale, adjustment, well-being and happiness (Gubrium and Lynott 1985: 223). Also, some argue that successful aging entails an orientation to the future, whereas life satisfaction entails an orientation to the past (*ibid.*: 239). If this is so, life satisfaction may be less appropriate as an indicator of successful aging (Torres 1999: 37 and 47).

An alternative view of successful aging is Baltes and Baltes (1990) ‘selective optimization with compensation’, which occurs as individuals choose to make the best use of their existing capacities and resources while finding ways to compensate for limitations. Here, successful aging is ‘good’ rather than ‘optimal’ aging: it entails a continuous process of successful adaptation to decline and loss, rather than maintenance of an optimal state (von Faber et al. 2001: 2694; Bengtson et al. 2005: 11). From this perspective ‘good’ aging is possible for people with different health statuses and activity levels.

Other critiques of Rowe and Kahn’s successful aging have identified a wide range of factors that need to be taken into account:

Good health is only one of the issues on a much larger social agenda that includes the attainment of happiness, wellness, fulfilment, respect and equality in later life. We cannot simply assume that every individual can take sole responsibility and control over their life and make autonomous and informed choices ... if we are to change how people think and experience aging and later life, we need to consider the contexts and constraining factors that influence access to, for example, affordable housing, adequate income, clean environments and quality health care. Policies are required to support the equitable distribution of resources to poor and disadvantaged older persons and reverse the ageist attitudes formed over many decades, if not centuries. (Minichiello and Coulson 2006: xiii–xiv).

A number of authors also include spiritual health as a component of successful aging, arguing that it is important for physical and mental health. Spirituality here is interpreted as “the personal views and behaviours that express a sense of relatedness to something greater than oneself” (Reed, cited by Flood 2002: 107). Rowe and Kahn (1998: 229), noted that those who attend religious meetings “do better” than those who simply say they are religious – a comment made in the context of discussing the importance of social support from family, friends and organizations. From a literature survey, Crowther et al. (2002) observed that spirituality fosters active engagement with life – for example, through participation in religious and community activities. They found that it also benefits health and well-being, enhances purpose and meaning in life, and is associated with lower rates of smoking and drug and alcohol abuse. The Okinawa Centenarians study suggested that low cardiovascular risk was due to “a stress-minimizing psychospiritual outlook”, along with diet, regular exercise, moderate alcohol use, blood pressure control and avoidance of smoking (Suzuki et al. 1995).

Finally, even where functioning is impaired, satisfaction with life appears to remain prevalent – in all age groups – a phenomenon sometimes called the ‘disability paradox’ (Albrecht and Devlieger 1999; von Faber et al. 2001: 2699).

From in-depth interviews with 153 disabled people aged 18–74 in Chicago, Albrecht and Devlieger (1999: 978) concluded that although people with disabilities are assumed to be limited in function and role performance, their perceptions of their health, well-being and life satisfaction were often at odds with their objective health status and disabilities. All the respondents had been diagnosed with a disability including arthritis, cerebral palsy, multiple sclerosis, head injury, HIV/AIDS, heart conditions, vision problems, diabetes, chronic pain and mental illness. Just over half of those with serious disabilities reported an excellent or good quality of life, compared with 80–85% of persons with no disabilities who reported in national surveys that they were satisfied or very satisfied with their quality of life (*ibid.*: 981). The authors considered that respondents who attained high quality of life understood their condition, took control of their lives effectively, obtained resources to assist and conserved their energy. For others the converse was true:

Usually those people with disabilities who do not experience a high quality of life do not have ordered and predictable worlds. Nor do they possess the knowledge, resources and social contacts that provide the social glue necessary to re-construct a balance and well-being in their lives. Often their low quality of life is related to impairments that produce fatigue, constant or unpredictable pain and to physical and social environments that discourage them from becoming empowered and acting as agents in their own lives. The sociological evidence suggests, then, that low quality of life for persons with disabilities is based on difficult-to-manage impairments, lack of knowledge and resources and disabling environments. (*ibid.*: 986).

## 10.6 Obesity

Despite neglecting or underemphasizing unavoidable afflictions, subjective perceptions of quality of life and the role of social and environmental influences, a major contribution of research on successful aging by Rowe and Kahn and others has been to highlight lifestyle-related strategies through which improvements in individual and population health may be achieved. Lifestyle influences on health in later life have become well-known, and widely acted upon them. Yet, at the same time, a new lifestyle-related obstacle to improvements has emerged: the obesity ‘epidemic’. High prevalence of obesity occurs in the United States, Mexico, the United Kingdom, New Zealand and Australia (see Table 4.2). Obesity is also found at levels of around one in five adults in Western and Eastern Europe, Latin America, North Africa and the Middle East (Chopra and Darton-Hill 2004: 1558). In Europe, about half the middle aged adults are overweight, because of a high-fat, energy-dense diet and insufficient exercise (Robertson et al. 1999: 183). The obesity epidemic forewarns of poor health and curtailed survival for many in later life. Its association with diabetes, the sixth leading cause of death in the United States, is a particular cause of concern. Both obesity and type 2 diabetes are potentially preventable (Mokdad et al. 2003: 76 and 78), yet prospective increases in diabetes may decrease life expectancy in developed societies unless the prevalence of obesity is reduced (Mizuno et al. 2004).

The Framingham Heart Study has provided estimates of the impact of obesity on life expectancy. The study began in Framingham, Massachusetts, in 1948 and followed participants, –initially numbering more than 5,000 people aged between 28 and 62 years – through biennial visits and health checks. Applying World Health Organization guidelines, the research defined obesity as having a body mass index (BMI) of 30 or more. Data from this study showed that obesity was associated with a substantially increased risk of disease and early death (Peeters et al. 2003). Risk factors are involved in multiple pathologies and have many causal links between them. Overweight and obesity are significantly associated not only with diabetes but also with high cholesterol levels, asthma, and arthritis (Mokdad et al. 2003: 77). Obesity and high salt intake are causes of high blood pressure and all three have a strong involvement in the occurrence of stroke (Robertson et al. 1999: 181–185).

Compared with those of normal weight, the life expectancy of obese people at age 40 was 7 years lower for women and 6 years lower for men (Peeters et al. 2003: 29). They were also very much more likely to die before the age of 70. The effect of obesity was similar to that of smoking. Consequently, obese smokers faced a doubled risk: they lost an additional 7 years of life compared with smokers of normal weight. Female, obese smokers lost an average of 13 years of life, and males 14 years, compared with non-smokers of normal weight (ibid.: 29). Being overweight (BMI 25–29.9 kg/m<sup>2</sup>) was also associated with a reduction in life expectancy of just over 3 years for 40 year old male and female non-smokers. The study, however, was unable to determine the proportion of the loss of life expectancy directly due to obesity and overweight, since the same groups had other risk factors, such as insufficient exercise, diabetes, hypertension and high lipid levels (ibid.: 30). In addition to the heightened risks of disease, obese older people are also more likely to experience mobility restrictions, withdrawal from social activities and dependence on others for assistance with activities of daily living. They further impose greater risk of injury on nursing staff and carers who help in lifting them (Bennett et al. 2004: 11).

Paradoxically, the obesity epidemic has emerged at a time of better knowledge of lifestyle related risks. The public health response to overweight and obesity has been based mainly on changing individual behaviour, but it has been largely ineffective (Chopra and Darnton-Hill 2004: 1558). There has been widespread failure to modify unhealthy habits and much reliance instead on medications to counter at least some of the risk factors. The epidemic has developed at a time when food and beverages have become more processed and energy dense and there has been a transition to a diet high in fat and sugar, with greater consumption of meat, dairy products and soft-drinks. Half the total dietary energy intake in North America now comes from fat and sugar (Chopra and Darnton-Hill 2004: 1558). Food advertising, supermarkets and fast food restaurants are driving forces in these changes, with the global marketing strategies of multinational corporations having a major role, as they have had in the tobacco industry (ibid.: 1559). To combat obesity, some advocate strategies against the food industry analogous to those used against the tobacco industry, such as through taxes and health warnings on high sugar and high fat foods, litigation against companies that target advertising at children and restrictions on the advertising of unhealthy food products (ibid.: 1559–1560). High prices for vegetables

and fruit, and low prices of high-energy processed foods, will be persistent obstacles although excess consumption of healthy foods can similarly result in appreciable weight gains over the long-term (Everitt 2004: 92; Bennett et al. 2004: 10).

The situation where there is overproduction of food, exceeding the energy-intake needs of the population, might be likened to Woolmington's (1971) notion of a 'Malthusian inversion'. This is the converse of the famous 'principle of population' which Thomas Robert Malthus, one of the pioneers of demographic and economic theory, proposed in 1798. According to Malthus, population growth places pressure upon food supplies, which cannot increase as rapidly as population, continually leading to poverty, famine and high mortality. The Malthusian inversion describes a turnaround in this supposed situation. Instead of scarcity, overproduction is common and producers are engaged in stimulating consumption artificially through advertising. Although Woolmington focused on the implications of overproduction for agriculture and rural settlement, rather than population and food, circumstances underlying the obesity epidemic also constitute a Malthusian inversion: a surfeit of food presses upon the population, members of which are constantly exhorted and tempted to eat more than they need, to their own detriment.

Studies of many short-lived species have shown that calorie restriction – low energy intake without malnutrition – extends life. Among laboratory rats, energy restriction delays the onset of cancers – lymphoma, breast and prostate – as well as diabetes, hypertension, hyperlipidemia, nephropathy and cataracts (Willcox 2004: 792). A 36-year follow-up study of Japanese-American men observed relatively high mortality among men with above-average energy intake and lower mortality among those with below-average intake. Calorie restriction is very difficult for humans to maintain over long periods, however, and drug therapy may produce similar beneficial effects on blood pressure and blood cholesterol (Everitt et al. 2004). Some have claimed that a drug mix, called the 'polypill', could reduce deaths from heart attack and stroke by 80% and extend life by 10 years. The polypill would consist of a statin for cholesterol lowering, three blood pressure lowering drugs at half dose, folic acid and aspirin (Wald and Law, cited in Everitt et al. 2004: 2). Nevertheless, some researchers argue that calorie restriction could have a more general anti-aging effect than drugs, which usually have very specific actions. If this is so, many drugs would be needed to replace the disease delaying action of calorie restriction (ibid.: 3). Yet, overall, the benefits of calorie restriction for human life expectancy remain uncertain because they are largely construed from indirect evidence, including the Okinawa Centenarian Study. Direct evidence requires longitudinal data on diet and other characteristics.

## 10.7 Conclusion

Successful aging provides an incomplete account of the prerequisites for health and well-being. It over-emphasizes individual responsibility for disease prevention and its goals are more attainable among younger and socio-economically advantaged

groups than among the aged generally. Quality of life has become more widely accepted than successful aging as a goal for aging societies as evident at the 2002 Second World Assembly on Ageing (see Chap. 13). Nevertheless, successful aging provides a clear summary and explanation of ways of avoiding or delaying many of the personal and societal costs of health impairments, as well as ways of enhancing the experience of later life. It is an important point of reference for policies concerned with health and social participation in developed countries, not only at older ages, but also at younger ages where habits and behaviour provide the foundation for continuing health or ill health. The concept of successful aging has further applications in extending understanding of stages of later life, especially the nature of the so-called Third Age. Successful aging explains how individuals might sustain their health and quality of life, and thereby prolong their experience of the Third Age. Chapter 11 discusses the Third Age together with the joint contributions of the concepts of successful aging, the Third Age and the Fourth Age to accounts of the experience of the later life.

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