



A healthier elderly population in Sweden!

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Summary

Health trends in older people have a considerable bearing on the need for care but can be influenced by health-promotion and disease-prevention measures.

Making it easier for older people to live an independent life despite ill-health and disability should be a central objective of health-oriented community planning but we must also remember that their needs are highly individualised. Old-age pensioners do not constitute a uniform group. Participation and influence are the watchwords and their importance for older people's health is highlighted by, among others, the World Health Organization (WHO).

Older people's health has improved throughout the 20th century, but the *average life expectancy of 65-year-old women has not increased since 1997*. Sweden is behind Japan, France, Switzerland, Spain, Australia, Italy and Canada in this respect. Swedish men are, on the other hand, at the top of the list alongside Japan. One explanation for the lower position of Swedish women is that they smoke more than in the above-mentioned countries, especially between the ages of 45 and 64. Eating habits are another factor.

There are also regional disparities in Sweden when it comes to older people's remaining life expectancy. A 65-year-old in the counties of Uppsala, Kronoberg or Halland lives on average a year longer than a person the same age in Norrbotten or Västernorrland. The disparities become even more apparent when you compare municipalities and they are most marked among men. Municipalities with the longest life expectancies among both men and women include Danderyd, Härryda and Lomma, whilst Filipstad, Gällivare, Hofors, Ludvika, Malung, Nordanstig and Sundbyberg are among those with the shortest.

Health follows social class patterns and varies according to different living conditions. Many people – especially those with a working class background, who left school early and are low income-earners – do not take enough physical exercise and have poor eating habits. Elderly immigrants make up another vulnerable group. It is particularly important to make it easier for them to change their lifestyles. We know that it is never too late.

Mental ill-health is still a major problem among older people but actual causes of death are completely dominated by cardio-vascular diseases and cancer.

Even if it's just taking a walk, doing the housework or tending the garden, the fact that physical activity promotes good health is becoming general knowledge. Walking at 5 km an hour, older people need to walk for 30 minutes to obtain sufficient physical exercise. They can divide this up into, say, three times 10 minutes, for example. Municipalities, county councils, pensioner organisations and other NGOs have an important role to play as information disseminators in this respect. It is also crucial to make the outdoor environment both accessible and safe for older people.

It is never too late to stop smoking. Positive health effects will immediately ensue and these increase the longer a person stops smoking. Correctly composed meals are also important and obesity is an ill-health factor, but being underweight also

constitutes a serious health problem especially amongst the very old.

It is also important for older people to feel they are needed and that they have access to a social network. Family and friends, neighbours and non-profit associations have a key role to play here. Culture in all shape or form has a positive effect on health. Education, work, social participation and leisure time should run parallel throughout life and create scope for those who want to carry on working even after retirement.

Introduction

Nowadays, we are well versed in how various factors affect our health and in how we can improve it. On the other hand, this detailed knowledge has not been condensed into general, easy-to-grasp information, especially when it comes to older people. This compendium of knowledge appeals to all stakeholders, but perhaps primarily to politicians and other decision-makers in central, regional and local government, health-planners, public health departments, primary care services and those active within non-profit organisations and other NGOs.

The intention of this report is also to try and show some good examples of public health initiatives (methods, etc.) focusing on older people, from both Sweden and other countries.

Age trends

After Italy, Greece and Japan, Sweden currently has one of the oldest populations in the world. At the end of last year, 1.5 million people were aged 65 or over, which is 17.2 per cent of the population. Ten per cent of older people are foreign nationals or were born overseas, and this figure is rising very rapidly. The number of inhabitants over the age of 65 will remain relatively stable until 2009 but will then rocket as a result of the vast numbers of post-war baby-boomers (born 1944–1948). In 2010, the estimated proportion of over-65s will be 18.6 per cent and in 2030, it is likely to be as high as 22.6 per cent.

In its latest forecast (May 2003), Statistics Sweden (SCB) estimates the largest increase will occur in the over-85 age group, which will rise from 210,000 in 2002 to about 354,000 in 2030. Since many people are affected by ill-health after they reach the age of 80, it is also important to point out that the number of over-80s is increasing substantially. The biggest rise, however, will be in the 2020s, and especially in that decade's latter stages, when many of those born between 1944 and 1948 will reach the age of 80.

The SCB forecast is based on a continued annual rise in average life expectancy of about 0.1 years (slightly higher for men), which means that in 2030 men will live until they are 81.9 years old and women until they are 85. SCB does point out, however, that the forecast is very dependent on health trends. As can be seen from the table on page 21, average life expectancy in women has not risen at this rate over the last five years, and this is particularly true of older women.

What is aging?

Despite deriving a great deal of data about older people's health (in this case in the 65–84 age group) and statistics on mortality, average life expectancy and living conditions from the SCB surveys on living conditions (known as the ULF surveys), we

still lack basic knowledge about the aging process.

The latest public health report from the National Board of Health and Welfare says that aging consists of complex biological, psychological and social processes, but that there is no universally accepted definition. It is a slow, gradual process with no pre-determined limits and there is considerable variation from one person to the next. As they grow older, people's functions deteriorate, but we are increasingly aware of the fact that aging also involves positive processes, particularly when it comes to people's mental and social capacity.

Much of what seems to be biological age changes are brought on by environmental factors, such as wear and tear caused by incorrect patterns of movement, unsuitable work postures, unhealthy eating habits, inactivity, smoking and so on. One such example is osteoporosis or bone-brittleness, which leads to decalcification of the skeleton and a higher risk of broken bones. This is basically a biological aging process, but it can be substantially exacerbated by lifestyle factors. Half of all women and 25 per cent of all men contract osteoporosis. Another example is muscle strength. About 40 per cent of the muscle strength variation between people is due to hereditary factors, but it can be maintained and improved by doing physical exercise.

Health changes during aging may be brought on by our behaviour, good and bad habits, which we have cultivated for at least 30–40 years if not longer. In the light of this, it is obvious that preventive measures carried out among young and middle-aged people may reduce ill-health and disability in old age.

People can feel well despite illness and disability. Healthy old age, or what is often referred to as "healthy aging", is characterised by good health in advanced years with little or no disability, a high level of personal satisfaction, active involvement in life, meaningful pastimes, sustained powers of perception, good motor skills, psychological well-being and a feeling of goal achievement. Appreciation from family and friends as well as feeling satisfied with work and leisure time, possible salary and one's home are also important.

It is common knowledge that overall living conditions, i.e. financial situation, housing, which social class one belongs to, etc., have a considerable bearing on health. Older individuals in general, and elderly women in particular, have poorer welfare than the rest of the population regarding health, income, political resources, social relations and a feeling of unease about being exposed to violence (2001 Welfare Audit Committee, Official Government Reports 2001:79). A healthy lifestyle and health also follow class patterns. The risk of ill-health in the 80–84 age group is greatest among single people and those born in other countries, who have the lowest incomes. Pensioners on low incomes are less active physically, socially and culturally, have a smaller social network and enjoy less favourable living conditions (Stockholm Gerontology Research Center, Older people's health and well-being, 2001).

More flexible life trajectories

With more flexible life trajectories, education, work, social participation and leisure time can run parallel at *all* ages and should not just be associated with particular age groups. Flexible life trajectories can help individuals free themselves from roles and limitations imposed on them by the preconceived pigeonholing of people according to their age. This “liberation” need not be restricted to those close to retirement and older. Greater career opportunities and in-service training for people in their fifties would also allow them to spend more time with their children, for example, when they are in their thirties and forties.

The new pension system facilitates flexible combinations of work and semi-retirement and provides a financial incentive for people to carry on working until they are much older. Working until over the age of 70 still increases a person’s pension. The increase in the number of women in gainful employment throughout the 20th century shows that life trajectories can change over relatively short periods of time. Such life trajectory changes must, however, be given time to emerge. It ultimately depends on people’s expectations in life and society (SENIOR 2005, Tearing down the age ladder. Official Government Reports 2002:29).

The SENIOR 2005 report also suggested that political measures in different areas should focus on promoting new and more flexible life trajectories as an alternative to today’s dominant, chronologically constrained life patterns. A wide diversity of new combinations must be stimulated. The effects on health trends must be carefully monitored, particular with regard to disparities between women and men and groups with different economic circumstances. Flexible life trajectories must not, for example, lead to more work duplication for women, wider socio-economic divides or a new “stress culture”, forcing people to be active until they are very old.

Until now, however, actual retirement age has fallen and currently stands at 58 for women and just over 59 for men, according to current statistics from the National Social Insurance Board. According to a TEMO survey carried out on 857 people between the ages of 54 and 75, 31 per cent said they would have preferred to retire later than they actually did (Dagens Nyheter Debate 9 July 2003). Their reasons were both social (they missed the feeling of togetherness and usefulness that working life brought them) and financial, i.e. their pensions were too low.

The WHO policy framework: “Active Aging”

The World Health Organization (WHO) has drawn up a policy framework called “Active Aging”, which was adopted at a UN meeting in Madrid in the spring of 2002. The report points to three cornerstones of active aging: participation, health and security. Participation means the importance of creating opportunity for work, pastime and cultural activity. WHO uses the standard age of 60 to define “older” people. This report uses 65, since this is currently the most common formal retirement age.

The document also stresses the importance of participation by sectors other than the health and medical care sector; namely education, the labour market, social ser-

vices, the construction and transport sector and financial and legal systems. Special attention should be paid to poor older people, living in sparsely populated areas. Preventing accidents is also labelled an important area, as is ensuring housing, public buildings and transport are disabled-friendly. Lifelong learning opportunities are also important.

The report also calls for the quality of life for the disabled and chronically ill to be improved. Groups and activities run by older people should be supported to prevent loneliness and isolation. Intergenerational contact in housing environments and everyday life is also important. A society for all ages should be encouraged, for example, by arranging common activities in schools and the local community.

The report also stresses the importance of helping older people to stop smoking. They should also have access to secure walking areas to improve their scope for taking physical exercise. Support should be given to activity leaders and information about the importance of physical activity.

Other areas developed later on in this publication include diet, dental health, alcohol and medical drugs. The WHO report also points out the importance of lending support to developing people's problem-solving skills to improve mental well-being.

It is also important to train healthcare and social services personnel in the subject of aging and how to activate older people through, e.g. social networks, and in identifying those who risk becoming lonely and isolated. The work of pensioner organisations should be actively supported.

Violence directed at older people (physical, sexual and psychological), as well as economic exploitation and neglect are also problems that need to be recognised. All societal groups should receive training in these issues.

Influence and participation of older people

The influence older people exert on society can be measured by their degree of representation in political assemblies and their election turn-out.

At the last election, 2 per cent of *MPs* were 65 or over (same percentage for men and women), which is a fall of 1 per cent on the previous election. Older people comprise 8 per cent (9 per cent among men and 8 among women) of *county council assemblies*. This is an increase of 2 per cent for both men and women on the previous election. Compared to 1994, the proportion of women has gone up from 2 per cent.

More older people in urban areas and big cities (81 per cent out of a total of 1,020,000) voted than in the rest of the country, where about 78 per cent (of a total of 525,000) went to the ballot box.

The over-65s have also increased their representation in *municipal assemblies* in the last two elections. Elderly women have doubled their representation from 3 to 6 per cent, whilst older men have increased theirs from 6 to 11 per cent.

Many more older people than younger citizens vote in *parliamentary general elections*. An average of 81 per cent of those entitled to vote did so in 2002. About 89 per cent of 65–69 year-olds and 88 per cent of 70–74 year-olds exercised their right to vote. The proportion dropped somewhat to 73 per cent in the over-75 age group.

More men than women voted in the over-65 age group, whilst the opposite is true for the under-65s. Married men and women voted much more than single people. This was particularly true of the over-65s.

High-income earners voted more than low-income earners. The highest percentage (96 per cent) was to be found among those over-65s earning more than about EUR 33,500 a year.

Older people also voted more than their younger counterparts in *county council elections*. In the 65–74 age group, 88 per cent voted compared to the average of 77.4 per cent, and 85 per cent of women in the 65–69 age group and 82 per cent in the 70–74 age group cast their votes, compared to an average of 78.4 per cent.

The turn-out for *municipal elections* indicates a similar picture. *Foreign nationals* vote much less than Swedish people; 31 per cent of men and 39 per cent of women voted in *municipal elections* in 2002. About 40 per cent of men in the 65–69 age group and 35 per cent in the 70+ group went to the polls. Among women, 44 per cent of the 65–69 age group and 28 per cent of those over 70 voted. The highest election turn-out was among women aged 45–54.

The biggest disparity is among foreign nationals in different income brackets. Among those over 65 and earning less than EUR 11,150 a year, about 30 per cent voted, whilst 64 per cent of men and 60 per cent of women earning more than EUR 22,300 cast their votes. Men from Chile had the highest election turn-out among older people.



Older people's health; where are we now compared to previously and set against other countries

All in all, self-assessed health among older people (65–84 years) has improved over the last twenty years even though the picture is not unequivocal (2001 Public Health Report). Similar findings have been presented in Norway (Hjort PF. Physical activity and the elderly – Journal of the Norwegian Medical Association 2000, 120: 2914–22) and the United States (Will there be a helping hand? Appendix 8 to LU 1999/2000). Older people's locomotive power has improved, the number of disabilities has decreased as has the number of older people who find it difficult to manage their daily chores. Eyesight has improved whereas hearing has deteriorated in certain groups. Milder psychiatric disorders are not reported as much as they used to be.

Women have more *aches and pains* than men. Some types of aches and pains decrease when people retire, which is thought to be linked to the reduction in physical strain. There is such a tendency for backache, for example, particularly among men. The incidence of aches and pains decreased during the 1980s for both men and women, but increased during the 1990s. Severe pain, on the other hand, also decreased among men in the 65–74 age group during the 1990s.

Women with a blue-collar working background make up the group that suffers the most aches and pains. The increase during the 1990s in the 65–84 age group seems, however, to have occurred mostly among men and female white-collar workers. Physical mobility has improved in all socio-economic groups both among men and women, but the problem is still more common among former blue-collar workers. In men, the disparities between blue-collar and white-collar workers are accentuated with age. In women, on the other hand, these disparities diminish with age (2001 Public Health Report).

Mental ill-health

Mental ill-health is still a major problem among older people. According to one estimate (2001 Public Health Report), there are about 150,000 older people suffering from depression, 100,000 from anxiety and 100,000 have some kind of psychotic condition. In the younger age groups, depression is more common among women than among men. This disparity evens out with age, but since women live longer than men, there are still more very old women with the diagnosis than men.

The risk of suicide is considerable among older people suffering from depression and particularly among elderly men. There has, however, been a considerable reduction in suicide among men over the last thirty years; nearly 50 per cent among the

over-65s. The frequency among men over 75 years is still double that of men in general, and four times that of women in the same age group (source: 2001 Cause of Death Register). In 2001, 231 men and 99 women aged 65 or over committed suicide, which is 28 per cent of total registered suicides. In addition, there are deaths by misadventure, where there is a strong suspicion of suicide; 28 men and 32 women over 65, which is 17 per cent of all registered cases in Sweden in 2001.

On the other hand, many more people in this age group die of cardio vascular disease or cancer, which is discussed under *Causes of death* later on in this report.

Dementia increases markedly with age. It can, however, begin to appear in 40–60 year-olds. The most common form of dementia is Alzheimer's disease which accounts for about 60 per cent of all cases and is slightly more common among women than among men. Dementia is a life-long disorder and causes severe mental suffering both for those affected by the disease and their families and friends. It often leads to substantial disability. Anxiety and sleeping disorders are also common, particularly in the early stages of dementia. The number of people with moderate to severe dementia was estimated at about 110,000 in 1995 and those with mild/moderate/severe dementia at 165,000, but a similar European study puts the number at less.

About 1 per cent of 65–69 year-olds suffer from some form of dementia and this figure rises to 3 per cent among 70–74 year-olds. Prevalence then doubles every fifth year and in the over-90s is estimated at 21 per cent (2001 Public Health Report).

There is a strong link between cardio-vascular disease and dementia. A Finnish study presented at an Alzheimer's conference held in Stockholm in July 2002 ascertained that hypertension and high blood fat levels increase the risk of contracting Alzheimer's by 4–5 times. Cholesterol, the source of both these risk factors, is more significant than genetic inheritance – a fact that came to light only a few years ago. Several other studies presented at the conference confirmed Alzheimer's to be a social welfare disease; i.e. it is more common in high fat-consuming countries.

An American study was presented in Dagens Nyheter on 29 August 2003, indicating that diabetes doubles the risk of contracting Alzheimer's and that even the early stages of diabetes imply an increased risk.

There is also a connection between socio-economic status and Alzheimer's. Uneducated or poorly educated blue-collar workers and people working in the home run twice the risk of being affected by the disease than those with higher status jobs, claimed Walter Kukull from the University of Washington. Ten years ago, researchers believed smoking prevented Alzheimer's. There is less consensus these days, however. At the Stockholm conference, researcher Monique Breteler from the Netherlands presented several studies indicating that smoking actually increases the risk of Alzheimer's. Sedentary, isolated and passive lifestyles also heighten the risk.

Women of all ages, including older women, suffer from psychiatric disorders, such as anxiety, unease, anguish or sleeping problems, to a much greater extent than men. These disorders increased slightly in men and women in the 65–74 age group during the early 1990s, but have tended to diminish since then – a similar pattern to the rest of the population. Since the beginning of the 1980s, however, milder disorders such as anxiety, unease and anguish have decreased, both among women in this age group and among men and women in the 75–84 age group. The number of

people afflicted by anxiety, unease or anguish has been relatively constant both among men and women over the same period. In 1998–1999, about a third of men said they had trouble sleeping (2001 Public Health Report).

Dental health

The risk factors for older people's *dental health* include less salivary secretion, brought on by old age, medical drugs and an increase in caries-forming bacteria. Mucous membranes become thinner and are more likely to house fungal infection. There is a larger area of tooth for bacteria to attack, which also increases the requirement for good dental hygiene (Swedish Gerontology Research Center, 2001 Public Health Report).

As a result of deteriorating motor skills, many older people have difficulty performing adequate oral hygiene themselves, leaving more bacteria deposits to fester on their teeth. Smokers are especially vulnerable. Problems such as gingivitis and loose teeth correlate with poorer functioning of the skeleton, lungs, heart and muscles, cognitive dysfunction as well as poorer hearing, eyesight and subjective health assessment (H 70 survey, see below). These correlations can be found regardless of smoking habits and socio-economic factors. The correlation was strongest in men and 70-year-old men with good teeth had a better 10-year survival rate than those without teeth (Add life to years, Institute of Public Health, 1998).

According to the H 70 study in Göteborg (a study tracking health trends and mortality in men and women born in 1901/02, 1906/07, 1911/12 and at five-year intervals until they reached the age of 70), just over 50 per cent of 70-year-olds no longer had their own teeth in 1971. Five years later, this figure was down to 38 per cent, dropped to 35 per cent in 1981 and in 1992 stood at only 17 per cent.

This result is confirmed by SCB ULF surveys, which indicate an improvement in dental health over the last ten years. The percentage of older people still having their own teeth has increased among both women and men. There are major disparities in dental health, however. Former blue-collar workers have a much worse tooth status than white-collar workers; 30 per cent of men and 28 per cent of women aged 65–84, who used to be blue-collar workers, still had their own teeth in 1988–1999, while the corresponding figure for former white-collar workers was just over 60 per cent (2001 Public Health Report). Toothlessness is also more common among immigrants than among native Swedish people (Add life to years).

Recurrent cross-sectional studies in a number of county councils in Sweden and other neighbouring Nordic countries show a positive trend in dental diseases such as caries and loose teeth in older people. One example is a survey in Jönköping, indicating that the incidence of caries and loose teeth among 70 and 80-year olds examined in 1993 was substantial less than the same age group in 1973. The improvement in older people's dental health is probably due to several concurrent societal changes that occurred in the 1970s and 1980s; better healthcare and dental care of the elderly, more preventive, causal measures to combat caries and loose teeth (fluoride, dental hygienists), improved oral hygiene and a better diet.

Studies indicate an increase in the prevalence of dental diseases as people grow older. Longitudinal studies of 88–92 year-olds in Göteborg and 79–88 year-olds in Umeå also point to an increased risk of dental diseases. Contributory factors include decreased salivation, caused by the onset of old age, and an increased prevalence of caries-forming bacteria. The greater risk of poorer dental health is a secondary effect of increased morbidity and disability, the physical and social aging process with reduced vitality and a high medical drug intake.

According to an American study of just over 39,000 men working in the health-care sector, alcohol consumption heightens the risk of loose teeth. The risk increased by about 40 per cent and the consumption of red wine implied a slightly higher risk than other beverages, but the difference was not statistically reliable (Pithipat W, Merchant AT et al., *Dental Research* 203; 82:509–13).

Several county councils have started outreach activities aimed at older people, including oral examinations by dentists (Add life to years).

Longer life – better health

The mortality rate among older people decreased dramatically during the 1980s and 1990s, leading to an increase in average life expectancy. Socio-economic disparities in mortality remain at least until the age of 89, but are less obvious than among people of working age. This may be due to the fact that sick people have died at a younger age. Excess mortality in men is about 25 per cent higher among single 65–84 year-olds than among those who co-habit. There is no such discrepancy among women, however. Socio-economic disparities in mortality still remain after standardisation for poor health. Disabled persons (visually challenged or with a physical disability, who cannot clean or buy and prepare food) run about a 50 per cent excess risk of premature death compared to those who do not have such a disability and need no help. Despite women often reporting ill-health and the need for help, their average life expectancy is higher (2001 Public Health Report).

Using the SCB health index, an indicator that combines mortality and morbidity, we can calculate both healthy and unhealthy life expectancy among 65–84 year-olds. Average remaining life expectancy in this age group has increased every year both for men and women. Only some of the years are disease-free, however. According to SCB calculations, the healthy lives of both men and women in the 65–84 age group have been extended by 0.2 years. Health-weighted life expectancy, i.e. where unhealthy survival years carry less weight, has increased by 2.1 years for men and 1.6 years for women in this age group over the same period of time (2001 Public Health Report)

An H 70 study of the three groups previously mentioned indicated that mortality among the two younger groups (1906/07 and 1911/12) was lower than in the oldest group (1901/02), but that there was no difference in mortality between the two younger groups. Reduced mortality in the two younger age groups was more pronounced among those who still lived at home and who had said they felt healthy, did not feel lonely and were neither disabled nor in need of care. Mortality had also decreased among those suffering from one or more diseases.

It therefore seems as if mainly healthy life expectancy has increased despite people suffering from one or more diseases also living longer. The difference between the age groups is only negligible, however. An intervention study makes it possible to make a comparison over time (Intervention of elderly people in Göteborg; IVEG). The results are presented in publications such as *Longer life- Better life. Studies on mortality, morbidity and quality of life among elderly people.* (Katarina Wilhelmson. Doctoral thesis, Public health and Geriatrics, Department of Social Medicine, Göteborg University, 2003).

New data on older people's health trends was presented at a conference organised by the National Institute of Public Health and the Institute for Future Studies in November 2003. Katarina Wilhelmson presented preliminary results from H 70, which did not indicate any further improvement in health for men born 1922 and

1930. The results indicated a poorer state of health among women born in the same years.

Preliminary results from the SWEFOLD study, comparing the living standards of over-77 year-olds surveyed since 1968 (with interviews in 1968, 1975, 1981, 1992 and 2002) were also presented. The current analysis compares 1992 to 2002 and covers 537 people in 1992 (5-percent non-response) and 561 people in 2002 (12-percent non-response). The SWEOLD results indicate a break in the positive health trend, especially for men aged 77–84, whose health status has deteriorated.

The SCB ULF surveys of 2000–2002 also indicate a deteriorating health trend in the 65–84 age groups. The reasons for this may include the fact that more people than previously survive with different disabilities (cardio-vascular diseases, diabetes and cancer).

Average life expectancy at various ages, regional and socio-economic disparities

In comparison with other countries, Sweden has had a high average life expectancy for many years. Periodically, this has been partly explained by lower mortality in the 0–19 age group, where Sweden has made more progress than any other country.

The life expectancy of Swedish and Japanese men is the highest in the world (77.5 and 78.1 years respectively in 2001). Remaining average life expectancy for men increased by a further 0.2 years in Sweden during 2002. In 1999, the remaining life expectancy for 65 year-old men was 16.5 years in Sweden and 17.0 years in Japan. In 1999, 65 year-old men were expected to live as long in Australia, Canada, France, Greece, New Zealand, Spain and Switzerland as they did in Sweden. Since then, the average life expectancy for Swedish men has increased even further (to 16.9 years).

The remaining life expectancy of, for example, a 65 year-old in a particular year is based on mortality among those who are 65 and over. This gives us an average life expectancy at that particular point in time.

By international standards, Swedish women are not in such a good position as the men. In 2001, their average life expectancy was 82.1 years. The corresponding figure for Japanese women was 84.9 years, for French women 83 years, for Italian and Spanish women 82.9 years and for Swiss women 82.8 years. A 65-year-old woman could be expected to live a further 19.9 years in Sweden and 21.9 years in Japan. The corresponding figure in France was 21 years, 20.5 in Switzerland and Spain and 20.2–20.3 in Australia, Italy and Canada (Source: OECD). In 2002, Japanese women were reported as having an average life expectancy of 84.9 years, while for Swedish women the figure was 82.1 years.

During 2003, the average life expectancy of both men (to 77.8 years) and women (to 82.3 years) in Sweden increased.

There has not been the same positive trend for Swedish women as for Swedish men or for women in several other countries. Swedish women aged 45–64 smoke more than men of the same age and more than women in the above-mentioned countries. Work duplication, i.e. working in the home as well as having a normal job, is more common among women and gives rise to stress which influences health and mortality. According to EU statistics, for example, a French person sleeps one hour longer per night than a Swedish person. The differences in dietary habits between Swedish women and women in Japan and the Mediterranean countries also have an effect.

According to the OECD, far more Swedish (and Danish) women are gainfully employed than in any other industrialised country, something which is often forgotten when discussing Swedish ill-health (sick leave). Being unemployed is an ill-health factor, but too much strain and work with a lack of influence and participation also contribute to ill-health.

According to an article published in the *Lancet* (DN 5/7 2002), a British study

claimed that stopping smoking reduces the risk of heart attack by half. Exercise, for at least 30 minutes a day, also diminishes the risk. If people took heed of this fact, the prevalence of stroke and heart attack would decrease by four-fifths. In addition, this would have positive effects on different forms of cancer (lung, large intestine, breast, throat and mouth), different muscular diseases, osteoporosis, diabetes and Alzheimer's disease. Smoking also affects the sight, general mobility and dental health of older people and often leads to the painful condition of chronic obstructive lung disease (COLD).

A new American study, reported on the morning news on Swedish radio (P1 30 July 2003), has ascertained that the most important factor for higher average life expectancy is positive thinking. People aged 50 and over have been studied and if a person stops smoking at this age, his/her life expectancy goes up by 1–3 years and with a positive outlook on life, s/he will live 7.3 years longer than others. A Danish study, presented at the Nordic Conference on Gerontology in Århus 2002, which is based on detailed interviews with a number of people over 100, performed by the Institute of Gerontology in Hellerrup, Denmark, showed that positive thinking or the will to live is the most important explanation for a long life.

Many factors seem to influence positive thinking, however, such as genetic make-up, socio-economic conditions (housing, income/pension), education, support from friends and family, efforts from society (municipalities, county councils and central government) and pensioner organisations/other NGOs.

It is also common knowledge that widows/widowers often die shortly after their spouse – a situation that needs special attention. In many other countries, such as Africa, families and friends take a much more active role in situations like these, whereas Sweden does not have the same tradition.

A study conducted by the Danish Institute of Public Health and the University of Southern Denmark-Odense on all Danes born in 1905 was presented at the above-mentioned conference. The study began in 1998 with 2,249 people and was followed up 15 months later, when 579 people had died. The study indicated that smoking, a number of diseases, education and civil status had no effect on mortality in this age group. A high body mass index (BMI) and high alcohol consumption gave rise to lower mortality. (BMI measures whether people are under or overweight in relation to their height. BMI = body weight in kilos divided by height in metres squared. The limit for being overweight is normally set at 25 and for obesity at 30). A high level of disability/poor mobility led to higher mortality. A Nordic comparative study (Glostrup, Göteborg and Jyväskylä) on the link between BMI, physical exercise and mortality was also presented at the conference. The results showed that physical exercise compensated for excess weight and that mortality was highest among people who had a low level of physical exercise and a low BMI.

The following table shows the change in average life expectancy in Sweden since 1980.

Table 1. Remaining life expectancy in years, 1982–2003, for men and women at birth, at 65 and 80 years old. Source: Statistics Sweden (SCB) population statistic

	Year	Men	Women
At birth	1982	73.4	79.4
	1997	76.7	81.8
	1998	76.9	81.9
	1999	77.1	81.9
	2000	77.4	82.0
	2001	77.6	82.1
	2002	77.7	82.1
	2003	77.8	82.3
at 65 years*	1982	14.6	18.3
	1997	16.3	19.9
	1998	16.3	20.0
	1999	16.5	19.9
	2000	16.7	20.1
	2001	16.9	20.1
	2002	16.9	20.,0
at 80 years*	1980	6.1	7.3
	1999	7.0	8.5
	2001	7.2	8.9
	2002	7.2	8.8

* An explanation of how average life expectancy is calculated is given on page 19.

The table shows how the average life expectancy of 65 year-olds has increased more rapidly for men than for women since 1982. Since 1997, life expectancy of women has only gone up by 0.1 years compared to 0.6 years for men. This change does not apply to 80 year-olds, where average life expectancy for women has risen by 1.5 years since 1980, compared to an increase of 1.1 years for 80 year-old men.

There is relatively little regional variation as regards average life expectancy in Sweden and what there is has remained comparatively unchanged during the 20th century. During the 1986–1990 period compared to 1997–2001, average life expectancy rose decidedly more in three regions than in the others – namely in Västerbotten, followed by Stockholm and Gävleborg. The fact that life expectancy is closely linked to economic development seems to explain the change in Stockholm. *But in Västerbotten and Gävleborg, the change seems partly to have been brought about by conscious public health promotion efforts.* The County Council of Gävleborg began actively promoting public health as early as the late 1970s. See pages 53 and 69 for more information on Västerbotten.

The following table illustrates the composite average life expectancy of 65 year-old men and women for 1997–2001 by county council/region.

Table 2. Remaining life expectancy at 65 years old by county 1997–2001. Source: Statistics Sweden

County	Number year
Uppsala	18.9
Kronoberg, Halland	18.8
Jönköping	18.5
Kalmar, Västra Götaland	18.4
Whole country , Skåne, Stockholm	18.3
Västmanland, Östergötland	18.3
Dalarna, Gotland, Örebro	18.1
Södermanland	18.0
Västerbotten	17.9
Gävleborg, Jämtland, Värmland	17.8
Norrbottn	17.7
Västernorrland	17.6

The table shows that life expectancy is longer in socio-economically strong counties than in those in the north. Northern counties have a higher mortality from cardio-vascular diseases and diabetes. We can also see that, apart from the counties of Uppsala, Kronoberg, Halland, Gävleborg, Norrbotten, Värmland and Västernorrland, there is little variation: ± 0.4 years compared to the national average.

The socio-economic disparities become clearer on the municipality and parish level, but since this requires a large population base, it is difficult to make exact comparisons by municipality, especially when they are small.

The following table shows the municipalities in Sweden that deviate from the national average for women and men respectively.

Table 3. Remaining life expectancy at birth for women by municipality 1991–2000, for municipalities with a life expectancy of more than 82 and less than 80.5 years. Source: Statistics Sweden

Number of years, rounded up/down	Municipalities
83.5	Bollebygd*, Danderyd, Härryda, Lomma,
83.0	Båstad, Essunga*, Falkenberg, Hylte, Hörby, Lidingö, Mörbylånga, Staffanstorps, Öckerö
82.5	Dorotea**, Höganäs, Höör, Kristianstad, Kungsbacka, Kungälv, Laholm, Lerum, Ljungby, Lund, Mark, Mölndal, Nacka, Partille, Skövde, Sollentuna, Svedala, Varberg, Vellinge, Ulricehamn, Uppsala, Växjö, Älmhult, Österåker
82.0–80.5	224 municipalities
80.0	Filipstad, Forshaga, Gällivare, Hallsberg, Hofors, Hudiksvall, Kramfors, Lilla Edet, Ljusnarsberg*, Ludvika, Malå**, Munkfors, Norberg, Sundbyberg, Ånge, Åsele**
79.5	Arjeplog**, Eda*, Grums*, Jokkmokk*, Malung, Nordanstig, Ockelbo*, Övertorneå*
79.0	Bräcke*, Vilhelmina*

** statistical value very unreliable; total population less than 5,000.

* statistical value unreliable; total population between 5,000 and 10,000.

Most of the municipalities in the table above with a high average life expectancy are socio-economically strong, whilst the opposite is true for those with a low life expectancy. The table presents 65 municipalities. The other 224 lie within the 80.5–82 years interval, i.e. there is little variation among them.

The following table illustrates the equivalent data for men.

Table 4. Remaining life expectancy at birth for men by municipality 1991–2000, for municipalities with a life expectancy of more than 77.0 and less than 75.5 years. Source: Statistics Sweden

Number of years, rounded up/down	Municipalities
79.5	Bollebygd*
79.0	Danderyd, Kungsbacka, Vallentuna, Ydre**
78.5	Gagnef, Täby, Vellinge
78.0	Ekerö, Grästorp*, Härryda, Kungälv, Lerum, Lidingö, Lomma, Lund, Orust, Sollentuna, Staffanstorps, Söderköping, Tjörn, Varberg, Växjö, Älmhult
77.5	Alvesta, Aneby*, Boxholm*, Båstad, Enköping, Finspång, Habo*, Herrljunga*, Höganäs, Höör, Lekeberg*, Lidköping, Linköping, Mark, Munkedal, Salem, Storfors**, Säter, Tanum, Tyresö, Ulricehamn, Vaxholm*, Vårgårda, Öckerö, Österåker
77.0–75.5	162 municipalities
75.0	Arvika, Eskilstuna, Fagersta, Gullspång*, Göteborg, Hagfors, Högsby*, Landskrona, Ljusdal, Ludvika, Norsjö, Nordanstig, Orsa*, Oxelösund, Sjöbo, Smedjebacken, Solna, Sorsele**, Storuman*, Strömsund, Sunne, Timrå, Vindeln*, Åstorp
74.5	Berg*, Filipstad, Hällefors*, Kramfors, Malmö, Malå**, Munkfors**, Ockelbo*, Ragunda*, Sundbyberg, Vansbro*
74.0	Grums*, Gällivare, Hofors, Malung, Torsby, Vilhelmina*, Älvdalen*, Överkalix**, Övertorneå*
73.5	Eda*, Jokkmokk*, Kiruna, Ljusnarsberg*, Pajala*
73.0	Haparanda
72.5	Arjeplog**

** statistical value very unreliable; total population less than 5,000.

* statistical value unreliable; total population between 5,000 and 10,000.

The table shows that the variation in average life expectancy on the municipality level is greater for men than for women. This is also true on the county level. We can further ascertain that basically the same municipalities or type of municipality have either high or low life expectancy respectively, i.e. there are strong links with socio-economic variables such as education level, working life, income and housing. Since the population in these municipalities is small, we must exercise caution when interpreting these figures at face value. They should be used as approximate values, especially when the total population is less than 5,000 inhabitants.

If we compare parishes in the three largest cities in Sweden, we find even greater reported differences in average life expectancy. A case in point refers to Malmö, where the municipality's 2001 welfare audit reports that men in Husie have an

average life expectancy of about 80.5 years, which is approximately 11 years longer than men in Södra Innerstaden (south inner city). Women in Hyllie had an average life expectancy of approximately 84.5 years compared to 78.5 years for women in Rosengård. The life expectancy of men in Rosengård was also very low, about 73 years, i.e. 4.5 years lower than the national average. Rosengård has a high proportion of immigrants.

The following tables present average life expectancy for 65-year old women and men, 1993–1997, in municipalities in Stockholm county and the parishes in the City of Stockholm.

Table 5. Remaining life expectancy for women aged 65 years, 1993–1997. Source: *The health status of older people. Interim report 1, Swedish Gerontology Research Center 1999:7)*

Number of years, rounded up/down	Municipalities and parishes
22.0	Danderyd
21.0	Engelbrekt, Lidingö, Oscar, Täby, Vallentuna, Västerled
20.5	Adolf Fredrik*, Hedvig Eleonora, Matteus, Sollentuna, Österåker
20.0	Ekerö, Järfälla, Kungsholmen, Nacka, Nynäshamn, Sankt Göran, Spånga, Upplands-Väsby, Vantör, Vaxholm*, Värmdö
19.5	Bromma, Brännkyrka, Domkyrkoförsamlingen**, Gustav Vasa, Haninge, Huddinge, Hägersten, Katarina, Maria, Norrtälje, Nykvarn*, Sigtuna, Sundbyberg, Hässelby, Södertälje
19.0	Botkyrka, Essinge*, Farsta, Högalid, Sofia, Vällingby
18.5	Johannes, Kista, Skärholmen

** statistical value very unreliable; total population less than 5,000.

* statistical value unreliable; total population between 5,000 and 10,000.

Table 6. Remaining life expectancy for men aged 65 years, 1993–1997 Source: *The health status of older people. Interim report 1, Swedish Gerontology Research Center 1999:7)*

Number of years, rounded up/down	Municipalities and parishes
18.0	Danderyd
17.5	Domkyrkoförsamlingen**
17.0	Ekerö, Hedvig Eleonora, Lidingö, Nynäshamn, Oscar, Vallentuna, Vaxholm*, Västerled
16.5	Gustav Vasa, Huddinge, Järfälla, Nacka, Sollentuna, Tyresö, Täby, Upplands-Väsby, Vällingby
16.0	Bromma, Brännkyrka, Engelbrekt, Kungsholmen, Norrtälje, Södertälje, Värmdö, Österåker
15.5	Adolf Fredrik*, Essinge*, Maria, Matteus, Salem, Sigtuna, Solna, Spånga, Sundbyberg, Upplands-Bro, Vantör
15.0	Botkyrka, Enskede, Farsta, Hägersten, Katarina, Sankt Göran, Skärholmen, Sofia
14.5	Johannes, Kista
14.0	Nykvarn*

** statistical value very unreliable; total population less than 5,000.

* statistical value unreliable; total population between 5,000 and 10,000.

The Swedish Gerontology Research Center ascertains (in its report Older people's health and well-being – a public health challenge, 2001 Public Health Report) that average life expectancy varies depending on income and that mortality is higher in poor areas.

The tables illustrate that the disparities between the municipalities/parishes with low and high life expectancies respectively are similar for both men and women aged 65.

Danderyd municipality has the highest life expectancy for both 65 year-old men and women, whilst the parishes of Johannes, Kista and Skärholmen have the lowest. The dominant cause of death among the elderly is cardio-vascular disease (see page 41). A number of studies point to socio-economic conditions as one of the factors. In tables 5 and 6 above, the disparity in average life expectancy at 65 years old is more than 3 years between socio-economically strong and weak municipalities/parishes.

The health of elderly immigrants

In 2001/2002, immigrants, i.e. foreign-born nationals, made up 10 per cent of the over-65 population in Sweden. This percentage is set to rise quickly over the next few years. There is still a basic lack of data on the health of older people and their situation in life. This is all the more obvious when it comes to elderly immigrants. The SCB ULF surveys provide an insufficient number of interviews to be able to draw any reliable conclusions. One particular problem is the heterogeneous nature of immigrants as a group, which makes it even more difficult to draw conclusions from the existing data.

The National Board of Health and Welfare presents (in one of the few studies carried out called Different conditions – different health, a study of Chilean, Iranian, Polish and Turkish immigrants in the report series Immigrant living conditions, 4, SoS report 2000:3) the health status of immigrants from these countries compared to Swedish-born people. The analyses are based on ULF data from 1996 and are restricted to the 27–60 age group.

Immigrants generally have a good level of education, 42 per cent of them having at least three years of upper-secondary school education, compared to 36 per cent of the nation as a whole in the same age group (SCB 1997; Welfare and inequality in a 20-year perspective, 1975–1995). More immigrants are unemployed, on the other hand, even though the situation has improved in recent years as a result of special measures being implemented in metropolitan areas, and more of them receive disability pension.

Twice as many immigrants as native Swedish people, 9 per cent, feel they are in a poor state of health. More of them are also afflicted by some kind of long-term illness or high-grade disability. Immigrants visit the doctor more often but the dentist less often than native Swedish people. Few objective disparities have been ascertained as regards their state of ill-health. There are, however, marked differences regarding subjective health assessment (How significant is the country of birth? – A report on the health of different immigrant groups in Sweden, Report 2002:29, National Institute of Public Health). The Welfare Audit for the 1990s (Official Government Reports 2001:79) concludes that immigrants, and other socially vulnerable groups that suffer more-than-average ill-health, do not visit the healthcare service as often as their needs suggest.

Immigrants have less contact with their neighbours and their work colleagues outside work and are less likely to have a close friend in which to confide. This is particularly true of immigrants who have been in Sweden for less than 10 years (SCB 1997, Welfare and inequality in a 20-year perspective 1975–1995). Studies of older Swedish people (see above) tell us that contact with one's neighbours and with one's family and friends decreases with age. Elderly immigrants therefore risk having a very limited network of contacts.

Concerning contact with Swedish society, there is a considerable risk of elderly people with an immigrant background becoming even more isolated as a result of

language difficulties. This is particularly true of people who arrived in Sweden late in life, people from countries with a completely different language structure and people who develop dementia. It should also be noted that older family members coming to Sweden seldom benefit from the societal measures aimed at immigrants in general. Special measures are therefore needed from society, immigrant organisations, etc.

Morbidity and mortality in older people

– scope for preventive measures

The most common long-term diseases in elderly people affect their circulation and motor organs. The latter are often associated with joint problems, backache or leg-ache. As presented above, mental problems and disorders are common, as are hearing and sight impairments. The disparities are striking between different social groups, as touched on earlier in this report. According to the SCB ULF surveys, only a quarter of former blue-collar male workers in the 65–74 age group are 100 per cent healthy compared to almost half those in the former high-level white-collar worker category. Similar disparities can be found in the 75–84 age group. Only among the very old do these disparities start to even out.

According to data from the Kungsholmen Project in Stockholm, 22 per cent of old people in the 85–89 age group are completely disease-free and this figure falls to 19 per cent in the over-90s. Women are more disabled than men, partly due to a higher prevalence of dementia and other chronic diseases. One theory is that the proportion of severely disabled old women (85 and over) is higher than in men because women survive with their disability whereas men die younger (Source: Older people's health and well-being, Stockholm Gerontology Research Center 2001).

The most common disease group afflicting the elderly Kungsholmen population is cardio-vascular disease (44 per cent of men and 46 per cent of women). It is also the most common cause of death according to SCB statistics, as presented in Table 7 on page 41. In all age groups, women suffer more bone fractures and other musculoskeletal disorders, such as osteoarthritis and osteoporosis, than men whilst cancer is more prevalent among the latter. Cancer is the second most common cause of death in both men and women.

Cardio-vascular disease

According to the National Board of Health and Welfare's Healthcare in Sweden report published in 1998, nearly half the people over the age of 65 in Sweden have some form of cardio-vascular disease. Mortality in this disease group, after age factor standardisation, has fallen by nearly a third over the last 20 years. An increasing number of older people are receiving treatment for myocardial infarction and heart failure. Almost one in three 75–84 year-olds take some kind of heart medicine.

The decline in the numbers of new cases of *ischaemic heart disease* (coronary diseases, extensive myocardial infarction, sudden heart death and angina pectoris) is due to diminishing risk factors. The most important factors are smoking, high blood fats, hypertension and obesity. Diabetes and hereditary factors also increase the likelihood of contracting coronary disease. After a dramatic rise pre-1980, male mortality has fallen rapidly. Female mortality has followed a similar pattern. This can partly

be explained by a reduction in the number of smokers, especially among men (Source: Older people's health and well-being, Stockholm Gerontology Research Center 2001).

Ischaemic heart disease is the second biggest cause of death in people aged 65–79 years. There are, however, major disparities between the municipalities in Stockholm county, for example, especially for men. Mortality is twice as high in Sundbyberg as in Danderyd and Vallentuna. Even central Stockholm, Sigtuna, Solna and Södertälje municipalities have a high death toll from ischaemic heart disease among men in this age group. Preventive measures to combat cardio-vascular disease should ideally be implemented earlier on in life since arteriosclerosis starts in early middle-age. There are studies however advocating treatment of 70–80 year-olds as a preventive measure.

Relatively few intervention studies have been carried out into the prevention of cardio-vascular disease in older people. It is important to point out the positive effects of stopping smoking regardless of how old a person is. Epidemiological studies show that smokers who stop when they are 65–70 years old reduce the excess risk of premature death by half. The positive effects of smoking cessation programmes for elderly people are also well documented internationally (Source: Older people's health and well-being, Stockholm Gerontology Research Center 2001).

Blood fat is one of the most important risk factors for coronary disease and is partly due to the consumption of saturated fat. A commonly used blood fat indicator is a person's cholesterol level. Populations with very low cholesterol levels seldom contract coronary diseases. Sweden is in the top third of countries as regards international cholesterol comparisons. If we set the upper limit at 5.5 mmol/litre blood, blood cholesterol levels in 80 per cent of the Swedish population are too high (Stockholm Gerontology Research Center 2001).

According to an article in Dagens Nyheter on 31 August 2003, a survey of more than 70,000 women in the United States showed that the risk of contracting cardio-vascular disease among those who slept for less than five hours a night was nearly 50 per cent higher than normal. A survey of the sleeping habits of almost 2,000 people in Dalarna (Jerker Hetta, et al), indicates that men who have difficulty falling asleep run approximately three times the normal risk of dying from a heart attack within 12 years.

A good diet and physical exercise are the best preventive measures apart from medicine to tackle excessive blood fat levels. This is discussed in more detail under the section on lifestyles.

Heart failure is caused by the heart's inability to pump blood. The symptoms include fatigue and breathlessness upon exertion. In serious cases, fluid collects in the legs and breathlessness occurs even at rest, especially when lying down. The prevalence of heart failure increases dramatically with age and occurs in about 10 per cent of those who are 80 years old or more. Estimates put the number of people with heart failure in Sweden at about 200,000. Heart failure is one of the most important causes of morbidity in older people and implies a significant deterioration in the individual's quality of life. The condition can occur after a heart attack or onset of some other cardio-vascular disease. The risk factors are approximately the same for other cardio-vascular diseases (Stockholm Gerontology Research Center 2001).

Apoplexy or stroke is another of our widespread diseases. It occurs either as a result of a blood clot on the brain, a cerebral infarct or haemorrhaging. Every year about 25,000 Swedish people suffer a stroke, 20,000 of whom are first-time sufferers, and the risk of having one increases with age. The average age of stroke-sufferers is 73 for men and 77 for women, with 80 per cent of those affected being over 65. As the proportion of older people in the population is set to increase over the next few years, we can anticipate the number of stroke-sufferers to rise by 30 per cent from 2000 to 2010.

Stroke mortality, standardised for an aging population, has decreased in the last 25 years both for men and for women, although the risk of suffering one has not diminished at the same rate. Nearly 8,000 people a year currently die as a result of a stroke. The remaining life expectancy of those who survive the acute phase of the disease during the first month, has increased between 1983 and 1994 for 75 year-old male stroke sufferers from 4.8 to 6 years and for female sufferers of the same age from 6.2 to 7.0 years. The remaining life expectancy of the population as a whole at 75 is 9.5 years for men and 12 years for women.

An increasing number of people have suffered a stroke and an estimated 100,000 people in Sweden live in some kind of residual state after the initial acute phase. When the brain is affected by disease or damage, different types of problems occur to those that are associated with injuries to other bodily organs. Frontal lobe damage may lead to major personality disorders including an impaired sense of judgement and a lack of disease awareness. Damage to parts of the brain that process sensory impressions may lead to a change in how an individual experiences his/her own body and spatial relationships. This type of difficulty often causes a lack of awareness as to the extent and significance of the problem and makes it more difficult for the individual to mentally come to terms with what has happened. Language difficulties and an inability to conceptualise, understand and solve problems also complicate matters (Stockholm Gerontology Research Center 2001).

Preventive measures to combat stroke have not been as successful as those employed to reduce myocardial infarctions. The risk of having a stroke has remained unchanged over the last decade. The risk of cerebral infarct is greater for people with hypertension, diabetes and atrial fibrillation. The most important and most easily influenced risk factor is blood pressure. The most significant risk-enhancing lifestyle factor is smoking, estimated to cause about 2,000 strokes a year. Other factors indirectly heighten the risk of stroke by accelerating the onset of arteriosclerosis and hence the risk of all vascular diseases. These include high alcohol consumption, increased blood fats, obesity and a low level of physical activity. The risk of brain haemorrhaging is greater in people with hypertension and a high alcohol intake (Stockholm Gerontology Research Center).

Cancer

Cancer is the collective name for more than 200 different diseases of varying character. The risk of contracting cancer is closely related to age and the increase in average

life expectancy is in itself an important cause of the rise in the number of cases. Two-thirds of those affected are over 65. Every third Swedish person will contract cancer at some time during his/her life and every fifth death is caused by the disease. The risk of contraction has basically remained unchanged over the last 20 years with a slight increase for women and a decrease for men.

The most common form of the disease among women is breast cancer and among men is cancer of the prostate. Other common forms are cancer of the lung and of the gastrointestinal tract (Stockholm Gerontology Research Center 2001). See also the section on causes of death on page 41 of this report.

The substantial variation in cancer forms means there is also a wide diversity of more or less substantiated risk factors. Smoking is the single biggest factor. Nine out of ten lung cancer cases are caused by smoking. Alcohol is also a risk factor for certain forms of cancer (of the mouth, throat, liver, thyroid, etc.) Food and eating habits also play an important role in several forms of the disease. According to studies, a diet including plenty of vegetable, fruit and berries helps to reduce the risk of cancer as does one rich in fibre. Sunlight and ionised radiation, e.g. from x-ray machines and radioactive materials, also increase the risk of certain cancer forms.

A characteristic of many cancer forms is their long latency periods, i.e. the time that elapses between exposure and contraction. This means that preventive measures combating cancer must be implemented early on and will only have an effect in the long term. According to Hans Gilljam, associate professor at the Centre for Tobacco Prevention at Karolinska Institutet (KI), at least 30 per cent of all cancer cases are preventable (Dagens Nyheter 6 August 2003). Many measures aimed at stemming the development of cancer, such as those encouraging people to adopt better eating habits – increased fibre content, less fat, more fruit and vegetables – stop smoking and take regular physical activity, also have immediate effects on health and well-being, which is one reason why they should be implemented regardless of age (Stockholm Gerontology Research Center 2001).

Breast cancer is on the increase. But despite this, age-standardised mortality is not rising. The same applies to prostate cancer. This form of the disease develops slowly and does not necessarily spread and lead to symptoms. Lung cancer is decreasing among men but increasing among women. This trend follows that of smoking habits with a time-lag of between 15 and 20 years. Cancer of the large intestine is another common form of the disease. There has been a slight increase in the number of cases over the last 20 years whilst mortality has decreased as a result of early detection and treatment. Sitting still (a sedentary lifestyle) seems to increase the risk of this type of cancer.

There are large regional disparities when it comes to cancer mortality. Mortality in Stockholm county, for example, is higher than the national average. There is also considerable disparity within Stockholm county. The incidence of mortality caused by malignant tumours in the 65–79 age group is nearly 50 per cent higher for men in Högalid parish compared to Västerled parish between 1991 and 1995, and nearly twice as high for men in Sundbyberg municipality than for men in Danderyd in the same period. There is much less disparity among women (Stockholm Gerontology Research Center 2001).

Diabetes

Type 2 diabetes is currently one of the most rapidly increasing diseases in Sweden. This is partly related to an increasing number of people and particularly men being overweight. The prevalence of type 2 diabetes, i.e. non-hypoglycaemic diabetes or diabetes affecting middle-aged and older people, increases with age and an estimated 20 per cent of all over-80 year-olds have contracted the disease, i.e. about 100,000 people in that age group alone. Several surveys indicate that there may be twice as many people with undiscovered diabetes. Low glucose tolerance coupled with moderately high blood sugar levels, which can be detected using a glucose intolerance test, are often the precursors of full-scale diabetes.

Diabetes sufferers are more likely to contract cardio-vascular diseases and there is an increased risk of damage to various body organs, in particular the eyes, nervous system and kidneys, and of foot sores. Known risk factors for diabetes are obesity, especially round the midriff, physical inactivity and, in certain male individuals, smoking. Women should have a waist measurement (at the navel) of less than 88 cm and men less than 102 cm. Studies have shown that it is possible to dramatically reduce the onset of diabetes in glucose-intolerant individuals by changing their diets and increasing physical activity. This is especially important for very fat people (Stockholm Gerontology Research Center 2001).

Osteoarthritis

Osteoarthritis destroys articular cartilage, causing disability and pain. One of the problems of osteoarthritis is that the disease can only be detected by x-ray at a very late stage of development and surgery is often the only effective treatment available. The disease is more common in older people and among women and physical activity is the most effective preventive measure.

Accident injuries

Fall injuries among older people constitute one of today's most widespread public health problems. The number of older people with *hip fractures* has doubled over the last decades. Every second 50-year-old woman runs the risk of suffering some form of fracture at some stage during the rest of her life. The injuries cause suffering for the individual, put pressure on families and friends and burden society with high costs. The majority of the accident injuries in the cause of death and inpatient care statistics befall older people.

According to the latest statistics from the Swedish Rescue Services Agency on accident deaths in 1999, the percentage of deaths from *fall accidents* in the over-65 age group is very high (just over 80 per cent or 1,100 people), compared to 17 per cent of the over-65 population who die from accidents in general.

Every third 80-year-old woman is expected either to have already suffered a

fractured femur or will suffer one in the future. Fall accidents are more common among women than men and they also increase dramatically with age. They are five times more common in the 80–84 age group and 8.5 times more common in the over-85s than among those aged between 65 and 69. On average, two-thirds of older people are injured inside, in the home or in nursing homes/old people's homes/housing for the elderly. Half the injuries befalling younger pensioners happen outside. The vast majority (84 per cent) of 85–89 year-olds are injured inside (Stockholm Gerontology Research Center 2001).

Fall accidents mostly happen on level floors. Getting up from bed or a chair or moving from one room to another can lead to a fall. Surfaces such as slippery floors or loose rugs coupled with poor footwear increase the risk of fall accidents. Being injured in a fall is difficult for all elderly people, but for many, it is catastrophe. A fractured hip can cause great pain, as well as lead to the person being totally dependent on others for a long time and enforced isolation. Bone fractures in elderly people are described further under the section on osteoporosis.

For fear of falling again, many avoid moving at all, which further increases the risk since they become instable and have a poor sense of balance. Only half of hip fracture patients have regained their previous functional status one year on from the accident. Many never return to their previous homes. Mortality is high among the very old, even if the hip fracture is not always listed as a clear contributory factor in the cause of death register. Many elderly people contract pneumonia or suffer a heart attack.

The fact that injuries in the elderly population are on the increase despite their improved health in general may seem a contradiction in terms. The contributory causes of this include less physical activity and a less varied diet, particularly among old people living in urban environments. Smoking also plays a part. Reduced physical movement can in turn be due to musculoskeletal pain, increased medication or practical difficulties in getting outdoors. The causes are complicated since the risk factors to a certain extent influence each other. Some important environmental factors to consider can be found in the home, outdoors and in traffic. The social risk factors for injuries and accidents include a poor social network and insufficient support (Stockholm Gerontology Research Center 2001). See also the section on public health promotion focusing on older people and the best practice examples at the end of this report.

Systematic preventive efforts have long since been performed in some municipalities, such as those in Skaraborg county (see the example at the end of this report). According to an article on Swedish Radio P4 on 4 August 2002, the number of hip fractures among pensioners in Tidaholm municipality has gone down by 50 per cent in the last two years. According to public health coordinator Ann-Britt Lindén, the municipality, in partnership with the county council and various pensioner organisations, has actively informed older people on how to prevent fall accidents. The drop in accidents has saved an estimated EUR 500,000 in medical care costs.

Other causes of death in which older people are over-represented include *suffocation* (about 70 per cent or 70 people), *smoke and fire* (just under 60 per cent or 45 per cent according to the Swedish Rescue Services Agency's statistics from 1999).

When it comes to *traffic accidents*, older people are over-represented among pedestrians (just over 50 per cent) and cyclists (just over 40 per cent). Forty-five per cent of those who *drowned* (55 people) were 65 or over. These percentages should be compared to 17 per cent, which is the proportion of older people in the population as a whole.

Osteoporosis

Osteoporosis is a skeletal disease characterised by low bone-mass and changes in the micro-structure of the skeleton, leading to increased frailty and a greater risk of fracture. It mostly affects post-menopausal women. As people grow older, they lose about 1 per cent of their bone tissue per year. The skeleton becomes more brittle. This normally happens gradually, starting from about 30 years old. It varies considerably from one individual to the next, however. A report from the Swedish Council on Technology Assessment in Healthcare (SBU) measuring bone density indicated that 22 per cent of Swedish women between 60 and 69, 31 per cent in the 70–79 age group and 36 per cent of those aged between 80 and 89 have osteoporosis in the neck of the femur. A lot less men are affected. Heredity plays a much bigger part than previously thought. *Being outside in daylight has a positive effect on vitamin D supply to the body, which helps to maintain calcium and phosphorus levels and hence strengthen bones* (Dan Mellström et al).

An estimated 70,000 fractures occur as a result of osteoporosis. Most common are fractures of the wrist, vertebra and hip. An estimated 25,000 forearm fractures, 15,000 vertebral fractures, 18,000 hip fractures and 10,000 humerus fractures occur every year. A person who has previously suffered a fracture is much more likely to have a recurrence of the same injury compared to those who have never suffered one. The risk factors of osteoporosis which we can influence include insufficient physical activity, smoking, alcohol abuse, low calcium intake and oestrogen deficiency (Stockholm Gerontology Research Center 2001).

The examination of 300 women in the 55–75 age group, who have sustained a “low-energy fracture”, i.e. one that has occurred in connection with a traffic accident or other significant trauma, showed that as many as 92 per cent of them had a low bone density, as presented in a doctoral thesis by Owe Löfman, senior specialist at the Centre for Public Health Research in Linköping. He ascertained that someone who takes exercise and supplies the body with plenty of calcium early on in life builds up a higher maximum bone mass. He also discovered that the proportion of men sustaining hip fractures has gone up from one in three to one in two over the last twenty years.

Hearing impairments

Hearing impairment is one of the most common disabilities. Every tenth person is expected to suffer from it and eight of these ten are over the age of 60. Between 25

and 40 per cent of all those over 65 are thought to have impaired hearing and this percentage increases dramatically with age. It is clearly more common among men than among women. More than two-thirds of 90-year-olds who otherwise enjoy good health have a hearing problem. The prevalence of impaired hearing rose between 1980–83 and 1994–97, according to the SCB ULF surveys. This was particularly true among men.

Hearing impairment is mostly caused by changes in the inner ear, the auditory canals and the brain's hearing centre, coupled with genetic factors, disease and "everyday noise" affecting the organ of hearing. Hearing loss often occurs gradually over a number of years. It can also be due to obstructive wax, which is easily rectified. A Swedish study showed that two out of five 90-year-olds had obstructive wax, half of them in both ears.

Hearing impairment often causes a feeling of insecurity and isolation which in themselves constitute a threat to the mental health of older people. Many stop socialising as they feel embarrassed about having to ask for repetition all the time. It is tiring trying to differentiate words and sentences when many people are talking at the same time. There is also a risk of those with hearing impairments reducing their outdoor activities, being less able to cope with everyday challenges and a greater risk of morbidity. In addition, dementia sets in more rapidly when a person is hard of hearing (Stockholm Gerontology Research Center 2001).

Sight impairments

Nearly 15 per cent of elderly people over 65 are estimated to have impaired sight. Half of these suffer from such a severe sight impairment that they are unable to read the newspaper even with the aid of spectacles. As is the case with hearing impairment, age-related changes, especially cataracts and glaucoma, cause this deterioration in sight. More than a third of the population will need an operation to remove a cataract at some time during their lives. The risk of glaucoma is higher in smokers. Glaucoma affects about 1 per cent of the over-50 population. According to the findings of the H 70 surveys in Göteborg, low physical activity and a high BMI also heighten the risk of sight impairment.

Macular degeneration is the most serious cause of impaired sight among the over-65s. This causes age-related changes in the macula lutea (yellow spot) on the retina, destroying the photosensitive cells. The retina changes with age and the eye of an old person needs three times as much light as it did in younger years to maintain good vision. The consequences include a greater risk of fall accidents and fractures, more restricted daily activities, social isolation and poor self-confidence. As with hearing impairments, this condition may lead to a poorer sense of reality and exacerbated mental health problems if psychosis occurs.

As is the case with hearing impairments, many of those with impaired sight go undetected. In addition, many elderly people have very poor lighting in their homes (Stockholm Gerontology Research Center 2001).

Incontinence

Urinary incontinence is one of our most widespread public health diseases and can be defined as sufficient involuntary urine leakage as to cause a social and hygiene problem. About half a million Swedish people experience incontinence but only 25–50 per cent actually consult a doctor with their problem. Incontinence can therefore be classed as a hidden epidemic.

Incontinence is still a taboo subject for many older people and many feel ashamed and guilty about their problem. Among older people, incontinence is one of the single most important factors leading to the need for special service accommodation and it is not uncommon for as many as three-quarters of those living in special service accommodation to be incontinent.

Every tenth 50-year-old woman and every fourth 80-year-old woman is incontinent. The prevalence of urinary incontinence is lower in men, just under one in ten is estimated to be affected at the age of 70 and one in five at the age of 80 or over. Urinary incontinence in older people can be, as it often is in younger individuals, a transitory problem or one of a more permanent nature.

The known risk factors of urinary incontinence in women include childbearing, excess weight, gynaecological surgery, defective connective tissue, long-term constipation, chronic bronchial diseases and heavy lifting. In men, the two most important, known risk factors are prostate conditions and surgical removal of the prostate. Temporary incontinence can be caused by coughing, laughing, walking, lifting or other strenuous exercise.

All in all, there are a number of different risk factors for incontinence. Urinary incontinence in the very old is often associated with other serious disabilities such as dementia and stroke (Stockholm Gerontology Research Center 2001). Preventive measures include kegel exercises, which many women learn in connection with childbirth.

Musculoskeletal pain

As previously discussed under the section on *old people's health* on page 13, we know how many of the under-84 population experience aches and pains. However, there are still considerable gaps in our knowledge when it comes to the causes of musculoskeletal diseases. These types of disorders cause the most sick leave, long-term incapacity and early retirement due to disability and give rise to considerable pain and suffering.

Aches and pains are common among elderly people, mostly because the prevalence of diseases and conditions that cause pain, such as rheumatoid arthritis, osteoarthritis and cancer, increases with age. The Kungsholmen Project in Stockholm and the SWEOLD study have shown that musculoskeletal aches and pains are reported by about two-thirds (62 and 73 per cent respectively) of older people (Stockholm Gerontology Research Center 2001).

Allergies and hypersensitivity

Allergies and hypersensitivity represent one of the few widespread diseases that are more common in younger people than in the elderly. Just over 40 per cent of older people say they have some kind of problem. Problems such as asthma, hay-fever and eczema are becoming increasingly common. The percentage of asthmatics in the population has risen from 2 to 7 per cent since the 1960s. These problems are basically equally common among men and women, apart from hand eczema, which is twice as prevalent among women. Risk factors for allergies include poorly ventilated housing, exposure to tobacco smoke and other substances that irritate the airways. Measures to combat passive smoking, cleaning and ventilation have been discussed as part of possible preventive action.

Asthma can develop into chronic obstructive lung disease (COLD). Smoking is a significant risk factor. Smokers who have contracted the disease can become “respiratory invalids” if they don’t stop in time. These disorders occur in about 15–20 per cent of smokers as a result of inflammation of the bronchial membranes and damaged alveolae and cause emphysema. About 8 per cent of men and 5 per cent of women aged 65 years suffer from the disease (Stockholm Gerontology Research Center 2001).

Mental ill-health

Mental ill-health has already been discussed in detail on pages 13–15. In the section on various disabilities, it was ascertained that older people, who find it difficult to manage their daily activities, run a greater risk of developing some kind of mental illness. It is therefore important from a prevention point of view to pay attention to this early on and take the necessary compensatory measures. Other risk groups include people who have met with painful life experiences or have a poor social network. Mental ill-health is more common among single people. Social isolation affects mental well-being. The risk of older people being lonely is considerable when friends and life partners die.

Findings from the Kungsholmen study in Stockholm show that 10–15 per cent of older people have depressive symptoms and about 5 per cent suffer a very serious, life-threatening depression. These figures are similar to the younger population, but depression in older people tends to be longer drawn-out. Mortality is higher among depressed older people than among those who enjoy good mental health. This higher mortality cannot solely be explained by the prevalence of bodily disease nor by the increased risk of suicide (Stockholm Gerontology Research Center 2001).

A common belief in society, expressed not least by older people themselves, is that *memory functions* deteriorate as part of the normal aging process. This does not always tally with the findings of scientific studies, however. Modern science normally differentiates between four types of memory:

- semantic memory stores general knowledge
- unconscious memory is used in connection with motor movements, e.g. driving a car

- short-time memory stores information we can temporarily keep in our consciousness
- episodic memory refers to the conscious recall of information that is needed in a specific place and at a specific time.

Studies indicate that the first three types of memory remain unaffected or only negligibly affected by the normal aging process. We can see a gradual deterioration in episodic memory, which requires us to engrave new information on our minds and consciously recall it, as adults get older. This is true, for example, of texts, words, TV programmes, objects, faces, events and places. In addition, the speed at which the nervous system can process information gradually decreases throughout life.

We can compensate for this deterioration by allowing more time for memorizing, targeted instructions and clues or motor movements in connection with learning. Normal older people are always capable of improving their minds with sufficient support. There are also relatively strong links between the level of social and physical activity and memory capacity (Stockholm Gerontology Research Center 2001).

A psychotic condition is characterised by the occurrence of delusion, misinterpretation and hallucination. Other symptoms are speech and behaviour that are disorganised and difficult to comprehend and negative symptoms in the form of emotional ramblings, impoverished thought and apathy. The most common psychotic condition in older people is paranoid delusion. Most studies ascertain a frequency of psychotic symptoms in older people of 1–2 per cent. This does not include dementia with psychotic symptoms. A population-based study of paranoid delusion indicates an incidence of 4 per cent. The H 70 studies in Göteborg showed that 5 per cent of 85 year-olds had a schizophrenic or paranoid illness syndrome (Stockholm Gerontology Research Center 2001).

Dementia diseases have been discussed on page 14, but we add some facts here. Dementia conditions are all slightly different, but all are characterised by a gradual deterioration in intellectual functions leading to social consequences. Memory disturbances, problems with abstract thinking, practical everyday functions, recognition and executive functions are among the symptoms caused by nerve cell damage/degradation. Changes in personality, emotional and psychotic symptoms (mostly delusion) and behavioural disturbances (aggression, screaming, wanderings, etc) are also part of picture and can be caused by brain damage or interaction with the environment.

Dementia sufferers run twice or three times the risk of dying compared with those who do not have the disease. Dementia also shortens average life expectancy for the very old, especially women. Dementia also exacerbates other health problems, such as fall accidents, burn injuries (caused by smoking in bed, cookers left on, etc), urinary incontinence, etc.

As mentioned on page 14, Alzheimer's disease is the most common form of dementia. In 1993, the Kungsholmen Project indicated a link between thoracic exertion and an increased risk of contracting Alzheimer's late on in life, which suggests there may be one or more significant occupational exposures. Reports have since been published indicating that organic solvents and electro-magnetic fields in work-

ing life may increase the risk of Alzheimer's syndrome. It is a well-known fact that alcohol causes one specific type of dementia, known as alcohol dementia. The Kungsholmen Project found a link between alcohol abuse and an increased incidence of Alzheimer's.

In the H 70 surveys, scientists have reached the conclusion that there is a link between excess weight and Alzheimer's (Dagens Nyheter 15 July 2003). Women who were overweight at the age of 70 were more likely to contract the disease when they were 79 to 88 years old. The risk increased for every additional BMI unit. The link was much more tenuous in men. A total of 392 people were monitored for a period of 18 years. Of these, 93 people contracted Alzheimer's. It should be noted that there were much fewer men than women, since the latter live longer on average. This makes it more difficult to evaluate the statistics for men.

Hypertension is felt to be a significant risk factor for dementia. A recent population study in Göteborg showed that raised blood pressure also increased the risk of Alzheimer's. The Kungsholmen Project indicated a link between both high and low blood pressure and an increased incidence of the disease. This has produced the theory that low blood pressure might be an early indication of neurological degradation – the precursor of Alzheimer's syndrome.

New findings from the Kungsholmen Project show that a poor social network increases the risk of dementia diseases. Analysis of separate components of the social network indicates that people living alone and above all those who have little contact with others (no family or friends) run a greater risk of developing dementia. New studies also point to the need for intellectual stimuli, such as crossword solving, as a preventive factor. As mentioned previously (page 14), smoking is also a risk factor for Alzheimer's (Stockholm Gerontology Research Center 2001).

Causes of death in older people

Mortality and causes of death have been presented above. An abridged table of the causes of death in older people is presented below. Of those who die in a given year (2001), 86 per cent are 65 or over (82 per cent of men and 90 per cent of women). In 1980, the corresponding figure was 82. The difference can be explained by an increase in the life expectancy of the very old. The percentages have, however, remained constant for the last three years. This means that mortality in recent years has dropped at the same rate among both young and older people.

Table 7. Causes of death in the 65–74 and 75+ age groups, men and women respectively, 2001. Percentages. Source: Statistics Sweden

Cause of death	65–74		75–	
	Men	Women	Men	Women
Cardio-vascular diseases	42.8	32.7	50.2	51.8
Tumours	34.6	43.9	21.7	16.1
(of which in the prostate	6.0	–	6.3	–
breast	–	4.9	–	1.8
lung, trachea	7.4	7.6	2.7	2.0
large intestine	2.8	3.8	1.6	1.6
leukaemia)	3.3	3.8	1.9	1.4
Respiratory diseases (influenza, pneumonia)	5.3	6.2	8.2	6.6
External causes of disease and death, including accidents and suicide	3.8	2.5	2.9	2.6
(of which accidents	2.2	1.5	2.2	2.2
suicide)	1.2	0.7	0.4	0.2
Diseases of the digestive system	3.1	3.4	2.7	3.1
Diabetes	2.1	2.1	2.0	2.1
Mental diseases	1.7	1.7	4.0	6.8
Nervous system, eye, ear	2.1	2.8	1.9	2.0
Urinary/reproductive organs	1.0	0.9	2.2	1.6
Certain infectious diseases	0.8	1.1	1.2	1.3
Other causes of death	2.7	2.7	3.0	6.0
Total	100	100	100	100

As the table above shows, cardio-vascular disease is the dominant cause of death among both men and women. Tumours are, however, a common cause of death among women aged 65–74. The number of women dying from a tumour decreases dramatically after they reach the age of 75. Mental illness (especially Alzheimer's disease) is the third biggest cause of death among women in the 75+ age group.

The frequency ratios are higher since many more women die in the 75+ age group than between the ages of 65 and 74. Nearly 11 times as many women and 4.1 times as many men in the 75+ age group die of cardio-vascular disease compared to the 65–74 age group.

A comparison between 2000 and 2001 shows reduced mortality from cardio-vascular diseases among both men and women. The number of deaths related to influenza has also dropped, probably because of an increase in vaccinations. Fewer women have also died of breast cancer, whilst lung cancer has claimed more lives.

Living conditions and lifestyles

– possible preventive measures

Social networks

Humans are social creatures. The extent and content of social relations are of central importance to health and well-being in all age groups. Helping to create and maintain strong social networks and preventing social isolation are key aspects of public health work. According to a public health survey, performed by Stockholm County Council in 1998, people who are married or co-habit felt their health was better than those who were single. This disparity is true across the age groups even though it evens out somewhat in very old people (Stockholm Gerontology Research Center 2001).

An evaluation of an occupational therapy programme indicates that it is possible to influence the health and well-being of older people by activating them. The programme aims to provide meaningful activities for the individual, increase independence in daily life and improve functional health. Older people who participated in the programme had better health, quality of life and could function better than the control groups (Clark F et al. Occupational therapy for independent living older adults: a randomised controlled trial. *JAMA* 1997; 278:1321–6).

Social support and informal relations with the family and society are key aspects of successful aging (Lafferriere RH, Hamel-Bisell BP. Successful aging of oldest old women in the northeast kingdom of Vermont. *Journal of Nursing Scholarship* 1994; 26(4):319–23). A study shows that social, daily and physical activities reduce mortality among individuals in the over-65 age group. Individuals who are socially active and take part in daily activities live longer irrespective of factors such as gender, smoking, previous strokes, diabetes, cardio-vascular disease and disability. The most significant benefits of social activities can be observed among less healthy and less physically active individuals (Glass TA et al. Population-based study of social and productive activities as predictors of survival among elderly Americans, *BMJ* 1999; 3319:478–83). See also Veenstra G. Social capital and health [plus wealth, income, inequality and regional health governance] *Social Science and Medicine* 2002; 54:849–68).

Older people who keep up social, daily and energetic leisure activities enjoy better functional health, both physically and mentally (Everard KM et al. Relationship of activity and social support to the functional health of older adults. *Journal of Gerontology* 2000; 55B(4):208–12). Older people who are dependent on others to perform daily activities feel they have a lower functional health status (Whittle H, Goldenburg D. Functional health status and instrumental activities of daily performance in noninstitutionalised elderly people, *Journal of Advance Nursing* 1996; 23:220–7).

The chance of being able to carry on an active life is one of the key components of successful aging (Stockholm Gerontology Research Center, report 2000:7; Daily activities: the importance of activity and social togetherness). Activities that older people perform alone, such as carpentry and gardening, reduce the risk of mortality in very old people. Activities – even if they are not social – can have a positive effect on survival (Lennartsson C, Silverstein M. Does engagement with life enhance survival of elderly people in Sweden?: the role of social and leisure activities. *Journal of Gerontology* 2001; 56B:335–42).

Almost every old-age pensioner has someone they can turn to with personal problems. The difference between men and women is marginal. Nonetheless, it is slightly more common in younger age groups not to have someone to turn to. People who say they do not have such personal support feel they are less healthy. The family, especially the spouse and children, constitutes the most important social network for most older people. The percentage of married people in the over-75 age group has increased throughout the country, from one third in 1975 to four out of ten in 1999. This is partly explained by longer life expectancy in men. The percentage of people living alone has increased among younger people, but has remained constant among old-age pensioners over the last 20 years.

Two-thirds of the over-75s meet one or more of their children at least once a week. Nine out of ten people in this age group talk to their children on the telephone every week. Only 4 per cent do not receive a visit nor have telephone contact each week. Two out of three people in this age group have brothers and sisters still alive. Since an increasing number of older people are or have been married, more of them have children. Even if the percentage of older people with children living in the same house has gone down from just under 40 per cent in 1954 to 9 per cent in 2000, at least half of them still have at least one of their children living within a 15-kilometre radius (National Board of Health and Welfare, The Elderly Persons Commission 2000:11).

A third of people in the 65–74 age group and half of those between the ages of 75 and 84 live alone. Those living alone receive much more elderly care than those who co-habit. Those living alone also constitute a heterogeneous group, where there are clear disparities between people who have never been married and widows/widowers/divorcees. Those who have never been married often have a poorer social network than those who are widows/widowers or divorcees.

When we study the significance of loneliness and social networks, it is important to differentiate between actual and perceived loneliness. A person living alone does not have to feel lonely. On the other hand, a person surrounded by many people may still feel lonely. A study of EU member states and Sweden in 1992–1993 (prior to Sweden's membership of the Union) indicated that there were substantial disparities in perceived loneliness among the over-60s. The percentage of those who often felt lonely in Sweden and Denmark was 4–6 per cent, whereas in Italy it was 17 per cent, in Portugal 23 per cent and in Greece a full 36 per cent. The perception of loneliness is hence much more common in traditionally family-oriented cultures in southern Europe than in the more individualistic countries of northern Europe (Stockholm Gerontology Research Center 2001).

From a civil status point of view, loneliness is most common amongst single men and least common amongst married men. Two out of three in the 75+ age group meet their friends at least once a week and the same number meet a neighbour to talk or do something together. The percentage of men in the 80–84 age group who did not have a close friend was 35 per cent in 1994–1997. For women of the same age, the figure was 33 per cent. Compared to the situation at the beginning of the 1980s, these percentages have decreased, especially in the 65–74 age group, where they have dropped by just under 10 per cent, according to the SCB ULF surveys.

The percentage of former blue-collar workers who did not have a close friend was higher than among high and medium-level white-collar workers. The disparities have increased during the 1990s; 42 per cent of former blue-collar workers in the 80–84 age group did not have a close friend, compared to 28 per cent of high and medium-level white-collar workers in 1994–1997 (SCB report: The living conditions of the elderly 1980–1998, 2000).

Isolation, i.e. a total or almost total lack of social relations, is a stronger concept than loneliness. Only a small percentage of older people in Sweden can be considered isolated. This percentage is higher in metropolitan areas than in the country as a whole and especially among low-income pensioners. For example, 17 per cent of those in the 65–84 age group with a pension of less than approximately EUR 11,000 per year between 1990 and 1995 said they felt socially isolated in the City of Stockholm, compared to 7 per cent as the national average.

In contrast, only 5 per cent of people of the same age with a pension of more than EUR 11,000 a year said they felt isolated in Stockholm compared to 4 per cent in the country as a whole (Stockholm Gerontology Research Center, report 1997:9). We can also differentiate in the same way here between perceived and actual social isolation. *Perceived isolation* is a lack of anyone to turn to or confide in, whereas *actual social isolation* can be described as not having a place in an accepted community group. Those who both feel isolated and are actually socially isolated stand to benefit most from targeted community-group activities (Stockholm Gerontology Research Center 2001).

The health-promoting effect of *pets* should also be pointed out. Dogs that need exercise also give rise to both social contact and outdoor physical activity.

Another debated area is *car driving among the elderly*. According to the Road Traffic Injuries Report published by Statistics Sweden and the Swedish Institute for Transport and Communications Analysis in 2000, the number of people aged 65 and over killed in road traffic dropped by 60 per cent between 1975 and 1982. This downward trend has continued during the 1990s and the number of deaths in 2000 was a full 30 per cent lower than in 1982. This decrease is much bigger than in the 18–64 age group. As mentioned on page 35, elderly pedestrians and cyclists are considerably over-represented in the road deaths statistics.

Apart from children under 11, the 45–54 age group has the lowest number of deaths. Compared to this age group and taking the number of kilometres a person travels into consideration, people between the ages of 65 and 74 run about a 55-per cent higher risk of dying in road traffic. This risk is nearly 11 times higher in the 75–84 age group. It should be noted that this comparison is not completely reliable

since older people are more often killed as pedestrians and cyclists and they also travel shorter distances. Statistics compiled by the Swedish National Road and Transport Research Institute (VTI) also show that the number of injured people per million person kilometres is 0.6 in the 55–64 age group, 0.85 in people aged 65–74 and 2.6 in those between 75 and 84 years of age.

The overall risk of death for pedestrians and cyclists is 6.5 and 5.5 times higher than for passenger-car drivers. A total of 125 people aged 65 or over were killed in road traffic accidents in 2000. Surveys show that the level of activity among older people is fairly high. About 90 per cent go outside every day, but going outside by no means implies a trip away from home (The problems of elderly motorists in road traffic. National Road Administration, Publication 1998:63).

Older people generally travel less than younger people. Men between 18 and 64 years old travel about 60 km per person per day on average, compared to 23 km per day for the 65–74 age group and 15 km per day for those aged between 75 and 84. The corresponding figures for women are about 40 km for the 18–64 age group, 28 km for those aged between 65 and 74 and 10 km for people aged 75–84. This data is for 1995–1997. Source: The National Travel Survey (Riks-RVU) Concerning the 75+ age group, 60 per cent of the men but only 15 per cent of the women drove a car at least once in 1996. The figure for women in the 65–74 age group was 50 per cent (National Road Administration 1998:63).

We can ascertain that the driving skills of the very old are affected by various diseases, which seem to cause difficulties especially when they drive long distances. At the same time, however, the car gives those who are not entitled to the disabled transport service, have good access to public transport or can't cycle the chance to maintain or create social networks, keep their holiday homes or get out into the countryside (Add life to years).

Culture

Active participation has a positive impact on health and conversely, good health facilitates such participation. Many studies have shown that a high level of activity in older people is associated with both lower mortality and less disability. *People who are socially active and participate in daily activities live considerably longer than those who are inactive, all other risk factors being equal* (L-O Bygren et al).

Slightly more women than men participate in cultural activities, 11 versus 8 per cent of people in the 65–84 age group. About 13 per cent of 65–69 year-olds are culturally active compared to just 6 per cent of the very old. A person's education plays a major role in their cultural involvement. Only 5 per cent of those with just a basic education participate in cultural activities, whereas the corresponding figure for those with an upper-secondary education is 13 per cent and 29 per cent for those with post-secondary education. There is no difference between native Swedish people and immigrants in this respect.

The ULF surveys show that people who often participate in some kind of cultural activity – the theatre, concerts, art exhibitions or the cinema – clearly enjoy better

health than those who never or seldom do so. Only 5 per cent of those who often do it, i.e. at least once a month, experienced serious ill-health, whereas the corresponding figure for those who seldom or never partake of cultural activities was 17 per cent. The cause and effect of this is more uncertain since ULF is not a longitudinal study, i.e. a study that follows the same people over time. The reason people do not participate in cultural activities may be because of frailty or disability.

A longitudinal study provides us with the opportunity of comparing the health development of active and inactive people over time and hence find out what effect the activity has had. Such studies from other countries clearly indicate the positive health effects of social and cultural activities (Stockholm Gerontology Research Center 2001).

Research by Lars-Olov Bygren et al at Umeå University has also pinpointed the significance of culture for health (Bygren L-O, Konlaan BB, Johansson S-E. Attendance at cultural events, reading books or periodicals and making music or singing in a choir as determinants for survival: Swedish interview survey of living conditions. *Br Med J* 1996;313:1577–80. See also Rådström A-L. Culture for senior citizens in Umeå municipality. Department of Culture and Media. Umeå University, 2003).

Service and security

Some older people are very active until a very advanced age; they educate themselves, participate in public life and do all kinds of leisure activities. Keeping up activities like these is quite legitimately seen as promoting health and improving the quality of life. Access to public places and public transport has a bearing on the activities and level of participation for older people in these respects, since being able to move around in society is a crucial prerequisite of all activities, including leisure and culture (Iwarsson S, Ståhl A, Lund University: Access to the physical environment. Comments based on the SENIOR 2005 directive (1998:109, appendix D; Access and accommodation, Official Government Report 2002:29).

A healthy local environment for the elderly implies close proximity to shops, a post office, bank, chemist's, other social amenities and public transport. Housing areas must have satisfactory lighting, a safe traffic environment and be free from anti-social behaviour. It is important for elderly people to feel secure and obtain the help they need when their strength and health begin to waver. Home help, for example, adds to their sense of security and allows them to carry on being independent. Housing cooperatives can offer the elderly help with simple chores around the house, such as changing a fuse or a light bulb. Some housing companies also offer specific services, on top of their normal property management responsibilities, such as watching apartments when the occupier is away, handyman chores, courier services and cleaning (Stockholm Gerontology Research Center 2000:7; Daily activities – the importance of activity and social togetherness).

The number of people receiving municipal elderly care has decreased during the 1990s. About one in six people over 75 years old in need of help decline the offer of

home help services because they are too expensive. Those on low pensions naturally decline more often than others. The reduction in municipal elderly care and home help has led to an increase in informal help, i.e. help from a spouse or other person, or help purchased on the private market. The percentage of less well educated elderly people receiving only informal help has increased, whilst it has decreased among the better educated (Welfare Audit, Official Government Report 2001:79).

Exposure to violence

Almost half the women aged between 75 and 84 years old have given up going out in the evenings for fear of being subjected to violence. This figure has basically remained constant over the past ten years, but was lower during the 1980s (about 40 per cent). The corresponding figure for men of the same age is just under 20 per cent, a figure that has remained constant since the middle of the 1980s. At the beginning of the 1980s, the figure stood at 10 per cent. The percentage of women aged 75–74 years who refrain from going outside for fear of violence has basically remained the same over the last 20 years (35 per cent), whilst it has increased for men, from 8 to 12 per cent (SCB ULF surveys).

The proportion of women who have been the victim of street violence or been threatened has at the same time fallen from just over 1 per cent, in the 75–84 age group at the beginning of the 1980s, to 0.4 per cent. For men, however, the figure has gone up from 0.5 per cent in the middle of the 1980s to just over 1 per cent in 2000–2001. For men in the 65–74 age group, there has been an increase from just over 1 per cent to just under 2 per cent over the last twenty years. The figure for women in the same age group has also gone up, from 0.5 per cent to just over 1 per cent.

The percentage of those subjected to some form of violence resulting in bodily injury is less than 0.5 per cent for both men and women aged between 65 and 84 years. The lowest percentage is among those in the 75–84 age group. If we also include those who have been threatened, the percentage rises to about 2 per cent among men and women in the 65–74 age group and to about 1 per cent for those aged between 75 and 84.

The proportion of men and women aged 65–74 who have been exposed to violence or threat in their homes is about 1 per cent – a figure that has increased somewhat over the last twenty years. The figure for men and women in the 75–84 age group is less than 0.5 per cent.

Accommodation for older people

Older people are thought to live in more than 800,000 dwellings out of a total housing stock of four million. The vast majority live in ordinary dwellings. For many, the home signifies security, continuity, control over daily life, a feeling of identity, relations and social behaviour. Older people spend a lot of time taking care of their

homes, shopping and taking a daily walk. The majority of elderly people attach considerable value to their accommodation and the opportunity to keep on living in a well-accustomed environment. Being forced to move against their will can constitute a direct health risk. The principle of older people living in their own homes has been an integral part of Swedish policies for the elderly for decades (Stockholm Gerontology Research Center, Report 2000:9; The importance of the home and the housing area for elderly health and well-being).

A prerequisite for older people to be able to stay on in their own homes and live as independent a life as possible is good accessibility both to the accommodation itself and the housing area (Stockholm Gerontology Research Center 2000:9). Inaccessible accommodation is a potential health problem, since it is a threat to both an older person's independence and subjective well-being (Ivarsson S, Isacson Å, Quality of life in the elderly population: an example exploring interrelationships among subjective well-being, ADL dependence, and housing accessibility. Archives of Gerontology and Geriatrics 1997(26):711–83).

Report 97, Disabled people 1988–1999, published by SCB in 2003, specifies how many 65–84 year-olds couldn't walk up and down stairs without difficulty in 1996–1999. The figure was 23 per cent for the age group as a whole, but it was much higher for many disabled people. Seventeen per cent of those in the same age group were unable to take a short walk.

The inability to carry out daily activities is more common among older people in demanding physical environments, where several accessibility problems can be identified (Ivarsson S. Functional capacity and physical environmental demand – explorations of everyday activity and health in the elderly population. Doctoral thesis, Lund University, 1997, pages 163–187). The housing environment in a broader perspective can be seen as either supportive or as a hindrance in relation to the independence of older people as they go about their daily activities (Add life to years, 1998).

During the 1970s and early 1980s, the service apartment was a viable alternative for older people in need of accommodation. Nowadays, a person must be in considerable need of nursing care to obtain social assistance to live in a service apartment. Accommodation for older people must therefore be solved within the framework of mainstream housing policy. A model that emerged during the 1990s was senior citizen accommodation. Senior citizen apartments are normal accommodation units for older people who have not been allocated housing following a needs assessment and decision on social assistance. As a rule, occupiers must be aged 55 or over (Stockholm Gerontology Research Center, report 2000:9). There are an estimated 10,000 + senior citizen housing units in Sweden, mostly apartments, but some detached and row houses. The form of ownership for senior citizen housing is normally cooperative housing, presupposing therefore that older people can afford to purchase the lease (Sundberg S, Paulsson J, Senior citizen housing in Sweden: ideas, experiences and future perspective. Göteborg: Global print, 2001).

Senior citizen housing can provide social support and security in a wide sense. One of the characteristics of this form of housing is that it is chosen by the residents and can be developed in partnership with them. The tenants are involved as much as

they can be in management, maintenance and daily life. The apartments are the same as any other and must be adapted to suit the needs of the disabled and the elderly. There are communal areas for preparing food, socializing, hobbies and exercise and these extra facilities are easily accessible from the apartments themselves. There is a housing association, which acts as a forum for common ideas and interests. The tenants are not in need of care when they move in and they can live there for the rest of their lives (Sundberg S et al, see above).

Accessible outdoor environments

Being outside is beneficial to both mental and physical health (Kuller R & M, Urban green areas, the outdoor activities of older people and health. Council for Building Research, R24:1994. Stockholm; Fors E, Löf A, How healthcare personnel training influences the outdoor activities of older people in special service accommodation. The human health-promoting effects of being outside, R&D report 9:2003, Linköping and Norling I, Health and leisure. Studies in 10 municipalities of the interaction between health status, lifestyle and economic factors. CEFOS, Göteborg University, 1996). The positive effects of being outside can be summarised as follows:

It enhances skeletal strength and combats osteoporosis. It preserves musculature and mobility. It combats excess weight. It improves sleep quality. It combats depression and anxiety. It increases resistance to infection. It heightens stress tolerance. It alleviates cardiac complaints (though not in very cold weather). It promotes social life and combats loneliness.

Reduced muscle strain is another positive effect. Being outside also gives rise to a positive change in cerebral activity, as well as lowers the pulse rate and blood pressure. It relieves pain, reduces medical drug intake and helps to shorten hospital stays. Being outside also has a positive impact on a person's concentration and attention span, enhances well-being and leads to better hormone balance. It also facilitates the assimilation of vitamin D, which prevents bone decalcification.

Physical activity

Our knowledge about aging and the significance of lifestyles in the aging process has increased markedly over the last few decades. There has been a decrease in the levels of physical activity in western industrial society as people grow older and it is unclear how much disability in old age is actually due to inactivity (Add life to years, National Institute of Public Health).

Statistics from the Swedish Sports Confederation indicate that 69 per cent of men and 72 per cent of women in the 60–70 age group take physical exercise at least once a week and for at least 20 minutes at a time. Thirty-seven per cent of the men and 39 per cent of the women in this age group say they exercise twice a week. A breakdown of the types of exercises done by 50–70 year-olds indicates walking to be the

most common (48 per cent), followed by cycling (12 per cent), work-out (10 per cent), swimming (9 per cent), cross-country skiing (8 per cent), golf and power-walking (7 per cent each) and jogging, weight training and dancing (6 per cent each). Several activities are presented for each respondent.

A link between low physical activity and disorders, such as joint problems, hypertension, diabetes, cancer of the large intestine, depression and anxiety, has also been established in older people. There are theories claiming that basically our entire historical existence on Earth has been dominated by outdoor activities and abandoning the habits of the hunter/food gatherer to adopt a modern, high-tech lifestyle can be considered a risk factor. Humans are probably designed for a high level of regular physical activity, which implies negative consequences for elderly people who are too passive in relation to the body's needs. Bodily functions must be put to use and skills must be maintained for them not to regress. Physical activity and exercise play a crucial role in the preservation of functional health (for references, see *Add life to years*).

A general impression of the H 70 studies in Göteborg is that the Swedish population is somewhat more physically active than, for example, American people. The report *Longer life and better health* from the Swedish Council on Technology Assessment in Health Care (SBU) highlights the importance of physical activity. This report also points to a clear trend in the form of reduced daily energy consumption in both Europe and North America and 20–30 per cent of the adult population now lead a sedentary lifestyle. The SBU report underlines the need for more physical activity in the entire elderly population, which would reduce the risk of premature death and disability in old age.

One of the H 70 studies – known as IVEG (Intervention among the elderly in Göteborg) – was carried out as an intervention study, during the course of which the people involved were monitored from the age of 70 to 76. The study was interdisciplinary and involved scientists from many different fields. The population comprised a representative sample of 70-year-olds, divided into an intervention group and two control groups, one of which was examined at the age of 76. Intervention involves actively giving advice in order to change people's lifestyles for the better. The study indicated that the most common form of exercise among men was walking, followed by gardening, building work and outings into the countryside, and gardening, outings and work-out among women.

The IVEG study showed that *older people who walk for at least half-an-hour a day had better leg muscle strength, a higher bone calcium level and lower blood fat content than those of the same age who walked less*. Another study, focusing on lifetime activity patterns, concluded that those who had been most active in sports during their youth continued to be so throughout life and vice versa. This points to the importance of establishing good exercising habits in childhood and of finding forms of training that the individual enjoys. A feeling of pleasure and stimulation when exercising is of crucial importance if people are to continue to be physically active.

In addition to the projects mentioned above, a large number of other studies confirm the link between a person's level of physical activity and functional health and the benefit of early preventive measures to combat unnecessary disability in old age.

Several general studies from the United States, and one from Norway (Hjort PF. Physical activity and the elderly, *Journal of the Norwegian Medical Association* 2000; 120:2915–22), point to strong evidence claiming that exercise reduces the risk of cardio-vascular disease and premature death. These general studies quote other surveys indicating that exercise is beneficial for people over 65 and there are health benefits to be derived even when starting to exercise late on in life, whilst it is harmful to stop taking exercise (Add life to years, National Institute of Public Health et al, 1998).

A study from Massachusetts (Hakim A, Petrovich H, et al. Effects of walking on mortality among non-smoking retired men. *N Engl J Med* 1998;338:94–9) followed about 700 pensioners between 61 and 81 years old, who took part in an organised programme of regular walks, i.e. a relatively low-intensity activity. All the participants were non-smokers. When compared to control groups, it was established that regular low-intensity physical activity in pensioners led to significantly lower mortality. The study showed that this reduced mortality concerned both cardio-vascular disease and cancer. Those who walked less than 1.6 kilometres a day were 60 per cent more likely to die prematurely, compared to those who walked more than 3.4 kilometres a day. The risk of dying from cardio-vascular disease and cancer was more than double.

In its report 93, *Living conditions of the elderly 1980–1998*, published in 2000, Statistics Sweden analysed ULF data and compared it to interviews conducted on two occasions (1980–1985 and 1988–1993) for a group of individuals (5,349) aged between 65 and 84 years. During the follow-up period, 3,190 individuals died. The ULF surveys include questions on spare-time exercise habits. Quite a high proportion of the population, about 50 per cent of those aged between 45–74 years, are almost completely inactive. Medium and high-level white-collar workers exercise more than blue-collar workers – about 58 per cent compared to 44 per cent. Men who don't take exercise run about a 50 per cent higher risk of dying compared to those who are active (take exercise at least once a week), when we take age differences within the exercise groups into consideration. The disparities in the mortality risk were substantially greater among women; inactive individuals running an 80 per cent higher risk than active women.

The incidence of hip fracture has increased dramatically in Sweden since the 1950s, but those who have suffered a fracture have been shown to be more brittle and much less active even before the injury. Apart from the above-mentioned study from Linköping (in the section on osteoporosis), there are several foreign and Swedish studies presented in the *Add life to years* publication. One well-received study looking into the possibilities of reducing the risks of falling showed that there was a significant drop in the number of fall injuries among 70-year olds with at least one risk factor – low blood pressure, intake of certain medical drugs, poor mobility, strength or balance, movement or walking problems – and who had received help to stop taking medicine and start participating in an exercise programme. Similar findings were established in another study, in which a group of 65–83 year-olds received a combination of weight, balance and walking training, which led to better results than weight training alone. *There are studies indicating that the very old have the most to*

gain from an increased level of activity.

Since activity patterns seem to accompany a person through life, it may be helpful to find out the different interests of pensioners. Doing housework, for example, has been shown to increase the heart beat to the same level as walking, implying it can provide fragile people with the required level of exercise to prevent them from becoming dependent on personal assistance. Elderly people should therefore be encouraged to do as much as possible on their own, since receiving too much help can rob them of much needed exercise.

A report from the American Surgeon-General on physical activity and health was published in 1996, which emphasised the benefit of regular, low-intensity training and a daily 30-minute walk – even for older people. This extensive scientific compilation points to increased physical activity as a substantial public health challenge and its benefits above all as a preventive measure to combat premature death, unnecessary disease and disability, to keep healthcare costs under control and to maintain a high quality of life in old age.

Over a ten-year period, 73,622 people in Sweden have been studied, all of whom have taken part in the Vasaloppet cross-country skiing race at least once between 1989 and 1998. The risk of dying of a stroke, heart attack or diabetes is 52 per cent less than the national average. A total of 410 deaths occurred among the skiers during the period, which can be compared to 850 as the population average. The health backgrounds of the Vasaloppet skiers are no different from the rest of the population. Mortality from cancer and other diseases is just as common in their families as in other people's, which indicates it is the training that makes them healthier (Björn Ekblom, Stockholm University College of Physical Education, Metro newspaper 12 June 2003).

A British longitudinal follow-up study of 18,403 men in the 40–64 age group over a period of 25 years (Batty GD et al. Physical activity and cause-specific mortality in men: Further evidence from the Whitehall study. *European Journal of Epidemiology* 2001;17:863–9), analyses smoking habits, physical activity, lung function, BMI, glucose levels, blood pressure and cholesterol. The men are divided into four different occupational groups; administrators, high-level white-collar workers, low-level white-collar workers and others (caretakers and manual workers).

The study presents the differences in mortality for different levels concerning how many minutes per day they walked or cycled to and from work; 0–9 minutes, 10–19 minutes and more than 20 minutes. A total of 4,672 deaths have been studied during the period. It should be noted that the first two groups could be considered to have a very low level of physical activity. The risk of death from any cause was about 6 per cent higher in the group with the lowest level of physical activity. The results have been standardised for differences in age, work, blood pressure, cholesterol level, smoking, BMI, glucose intolerance, diabetes and lung capacity. The risk of dying from cardio-vascular disease was about 10 per cent higher, whilst from stroke it was lower for the group that did not cycle or walk to work.

In general, there was no difference between the groups when it came to cancer, but substantial disparities were noted between the different forms of the disease. There was a positive link, i.e. mortality was higher in the group/those groups with

the lowest level of physical activity, for cancer of the lung, large intestine, rectum and stomach. Percentages cannot be given here since there are only a small number of deaths but a wide dispersion. Excess mortality from lung diseases among those who exercised least can also be noted.

An extensive study, in which 80,000 American nurses (presented below in the section on diet) are being followed up over a 14-year period, shows that the risk of contracting cardio-vascular disease increases gradually, the less exercise a person takes. Those who exercise more than 5.5 hours a week at a speed of 5 km an hour or more were chosen as a standard group. The risk of contracting cardio-vascular disease is about 30–50 per cent higher in those who exercise less than one hour a week.

The best example in Sweden of how to get an entire population to exercise and eat a healthier diet is the Norsjö project in Västerbotten, which began in 1984 with the support of municipalities, county councils and voluntary organisations, Umeå University and the National Food Administration. The serum cholesterol level in the population was measured every year between 1985 and 1995 and a statistically reliable decline could be established (Lindholm L, Rosén M, Weinehall L, Asplund K. Cost effectiveness and equity of a community based cardiovascular disease prevention programme in Norsjö, Sweden. *Journal of Epidemiology and Community Health* 1996;50:190–5). The project has had knock-on effects in all the municipalities in Västerbotten and the results of this project seem to have contributed to average life expectancy increasing more in Västerbotten than in other Swedish counties over the last five-year period.

Smoking

Smoking increases the risk of contracting a large number of diseases and has considerable significance for public health. The percentage of daily smokers has decreased dramatically since the beginning of the 1980s. According to SCB ULF surveys from 2001, 18 per cent of men and 20 per cent of women over the age of 16 smoked. The biggest decrease is among men, who have reduced their daily smoking from 35 per cent. The corresponding proportion of women was 28 per cent in 1980–1981. Sweden has the lowest percentage of daily smokers in the world, but this is thanks to the low level among men. Fewer women smoke on a daily basis in many other countries.

A substantial proportion of both men and women used to smoke every day but have now stopped. Among men, the proportion of former smokers is now higher than the percentage of them who still smoke. They are more men who have stopped smoking than men who still smoke in all age groups over 35 years. There are more women who have managed to give up than who still smoke from the age of 55 and upwards. The best news, however, is that the percentage of people who never start smoking has increased dramatically among young people (by 22 per cent among 20 year-olds).

Far fewer pensioners than younger people smoke and the figure is constantly falling. About 10 per cent of 75–84 year-olds smoke daily, but as many as 60 per cent have never smoked at all. This figure is much less than among middle-aged people.

There are also substantial gender differences among pensioners. Fewer older women pensioners smoke daily and this figure has gone down slightly since 1980. The figures for men are slightly higher, but the fall in numbers has been that much more dramatic. It is also noticeable how many very old women have never smoked; 79 per cent in the middle of the 1990s (Statistics Sweden. Report 93. The living conditions of the elderly 1980–1998. Stockholm 2000).

The drop in the number of smokers is greater among retired men than women, but it started from a higher level at the beginning of the 1980s. If anything, we can see a slight rise in daily smoking among elderly women. There are substantial class differences in the under-50s when it comes to smoking. Blue-collar workers smoke much more frequently. The class differences for women of pensionable age are negligible, but they have increased for 65–84 year-old men during the 1990s. The differences were most marked in 1982–1983. In 1998–1999, 13 per cent of men who used to be medium and high-level white-collar workers smoked compared to 20 per cent of former blue-collar workers and 18 per cent of former low-level white-collar workers (National Board of Health and Welfare, 2001 Public Health Report).

Using a similar method to the one employed in the section on physical activity above, Statistics Sweden estimates that daily smokers have about 70 per cent excess mortality compared to non-smokers in the 45–74 age group. Since smoking has such a substantial effect on health, even relatively small differences in smoking habits can influence mortality risk between different socio-economic groups. About 13 per cent of medium/high-level white-collar workers currently smoke daily compared to 25 per cent of blue-collar workers.

In an article in *Dagens Nyheter* on 6 August 2003, Hans Gilljam from the Centre for Tobacco Prevention at Karolinska Institutet presented study findings showing not only that smokers die younger (7–8 years on average), but they are also unwell for longer (5–7 years on average) than non-smokers. For example, a woman smoker starts on average to feel unwell at the age of 54 and dies at 74. The average woman who has never smoked or who stopped before she was 35 feels healthy until the age of 68 and dies at 81, i.e. a total difference of 14 years in healthy life expectancy. This shorter period of ill-health represents a humanitarian benefit of economic significance, Hans Gilljam points out in his article.

A follow-up of the so-called Nordkarelen Project in eastern Finland indicates a considerably lower average life expectancy among smokers. A total of 5,247 men aged 25–59 were monitored for 19 years (1972–1991). The results indicated a 3-year difference in life expectancy between smokers and those who had never smoked plus 2.6 years in lost working time. The difference in life expectancy between smokers and former smokers was 1.8 years with 1.6 years lost working time (Kiiskinen U, Vartiainen, Puska P, Pekurinen M. Smoking-related costs among 25–59 year-old males in a 19-year individual follow-up. *European Journal of Public Health* 2002;12:145–51).

A new Danish study, comprising 12,000 men and women (*Svenska Dagbladet* 16 August 2002), shows that smoking is more dangerous for women than for men. The study began in 1976 and all the participants were over 20 years old. Researchers have uncovered a clear link between the smoking habits of the participants and the risk of

having a heart attack or dying from some other disease. To double the risk, men needed to smoke between 6–9 cigarettes a day, whereas among women 3–5 cigarettes a day were enough.

Every second smoker dies prematurely and those who do lose an average of 13 years in healthy life expectancy. Smoking also increases the risk, in some cases by 10–20 times, of contracting 40 or so different diseases. Smoking causes about 7,000 deaths in Sweden every year. The annual death rate among middle-aged (45–64 years) cigarette smokers, who have smoked for many years, is three times higher than among those in the same age group who have never smoked. Stopping smoking at any age reduces the risk immediately. The longer the person stops for, the greater the risk reduction (National Board of Health and Welfare, Public Health Report 2001).

Many diseases are caused or exacerbated by smoking. These include cancer of the lung, stomach, liver, nose, mouth, throat, breast (in women who start smoking in their youth), pancreas, kidney, bladder and blood. Smoking may also be a contributory cause of cot death (sudden infant death syndrome). This is also true of myocardial infarction, angina, stroke, osteoporosis, diabetes, asthma, emphysema, chronic obstructive lung disease (COLD), prolonged bronchitis, pulmonary tuberculosis, aortic aneurysm, other vascular diseases, pericardial haemorrhaging, chronic rheumatoid arthritis in men, gingivitis, loose teeth, gastric and duodenal ulcers, Alzheimer's (see above under *Mental ill-health*), Crohn's disease and loose teeth (2001 Public Health Report, Add life to years, National Institute of Public Health, 1998, Smoking and oral ill-health; SBU report 157, 2002).

Studies in recent years indicate that smoking is a contributory cause of cataracts and that stopping smoking (even for elderly people) reduces the risk of contracting or exacerbating them. Changes in the macula lutea (yellow spot) and toxic goitre, infertility and impotence are also affected by smoking (SBU periodical – Vetenskap & praxis (Science and practice) issue 1/2002).

Taking moist snuff increases the risk of hypertension, which suggests snuff-takers are more likely to contract cardio-vascular diseases. They also run a greater risk of contracting type 2 diabetes (National Board of Health and Welfare, 2001 Public Health Report). Nicotine from both smoking and snuff-taking hampers the blood supply to a number of bodily organs. Joints and the back are particularly affected. Smoking also causes premature aging in the inter-vertebral disks. In all likelihood, the muscles also suffer some kind of nutritional deficiency. Bone calcium levels are lower in smokers (especially in post-menopausal women). Wounds and sores don't heal as quickly in smokers, and this is also true of the healing process after an accident.

There is probably a connection between increased morbidity and the combination of smoking and insufficient physical activity. Smoking and, to a certain extent, snuff-taking debilitate immunological response and blood circulation, with a resulting detrimental effect on sore and wound healing after an accident or surgery, and complicate all kinds of infections. This applies especially to older people. Smoking has been proven to be a contributory risk factor in femoral neck fractures, which all too often befall older people. Smoking in older people is thought to accelerate the aging

process, leading to them needing help on a daily basis.

It is a well-known fact that smoking combined with dementia constitutes a serious fire risk. Several serious fires – resulting in many fatalities – at various elderly institutions in the Nordic countries have been caused by elderly and sick people smoking hazardously (Add life to years, National Institute of Public Health, 1998). Smoking is in any case the most common cause of fire in Sweden.

A comprehensive study of just over 80,000 American nurses (presented below in the section on diet) shows that the risk of cardio-vascular disease went up by more than five times during a follow-up period of 14 years for those who smoked more than 15 cigarettes a day.

Only in exceptional cases has Sweden promoted anti-smoking measures among older people, but the positive effects of such measures on this group are well documented internationally. Epidemiological studies have shown that smokers who stop when they are 65–70 years old reduce the excess risk of premature death by half. These calculations are especially true for lung cancer mortality. The risk of dying from a heart attack is also very much reduced if a person stops smoking as a pensioner. Even if a coronary disease has already been diagnosed and symptoms are already apparent, stopping smoking reduces the risk of an elderly people dying from the disease (Add life to years).

Findings from the major H 70 population study of older people in Göteborg show that the health status of certain pensioner age groups has improved over the last few decades. There is however a risk that their health status will once again deteriorate when those age groups that have a higher percentage of women smokers get older (cf the section on average life expectancy among 65 year-old women above). A long-term follow-up study, performed in Eskilstuna, of people who had just reached pensionable age at the end of the 1960s indicated smoking to be the lifestyle factor which posed the highest risk of mortality in general and of mortality from cardio-vascular disease in particular during their retirement.

There are several studies indicating that an elderly male or female smoker who stops smoking as a pensioner reduces the risk of stroke and bronchial disorders and of dying or being serious ill as a result of influenza and pneumonia, as well as increases his/her lung capacity. Several reports point to the early discovery of hypertension coupled with smoking cessation in elderly people as the only proven primary preventive treatment of dementia (add life to years).

A number of smoking cessation methods, primarily developed for young and middle-aged people have proven equally effective for older people. It is well documented that doctor's advice – with or without written information material – is just as effective for elderly smokers as for other age groups. It is a question of the doctor being aware of his/her key role in this respect. In-service training for doctors in methods of supplying information on tobacco to patients who smoke – even elderly ones – has proven to be effective.

Only 40 per cent of GPs ask a patient whether s/he smokes when they present symptoms without any known link to smoking. About half of all outpatient clinic nurses and over 80 per cent of those in inpatient care never actively support and encourage patients to stop smoking. Neither do dental care personnel provide this

kind of assistance very often. Every other dentist and every third dental hygienist believes it not to be part of their job. Current dental care reimbursement levels do not promote preventive treatment (SBU periodical – Vetenskap & Praxis (Science and practice), issue 1/2002).

Nicotine substitutes in the form of chewing gum or patches seem to increase the number of non-smokers among older people as they do among other age groups. Successful anti-smoking campaigns among elderly people have clearly increased the quality of life both because the people in question now have more physical energy and because they feel good mentally after having kicked the addiction.

Anti-smoking campaigns aimed at older people have proven to be just as cost-effective as those aimed at other age groups (Add life to years. See also Stevens W, et al. Cost-effectiveness of a community anti-smoking campaign targeted at a high-risk group in London. Health Promotion International. Vol. 17, No. 1, Oxford University Press, 2002, page 43).

Diet/excess weight

There are cultural, social, psychological, nutritional physiological and medical aspects to food and eating habits. Nutrition is a key area both in gerontology and geriatrics, as it is important for both the prevention and rehabilitation of older people. A good food status is important for the well-being of healthy older people, to postpone and even prevent disease and its onset altogether. Furthermore, good eating habits and adequate nutrition are necessary if other forms of disease treatment are to be as effective as possible. Good eating habits are particularly important for older people, since the prevalence of most chronic diseases is very high in the oldest age groups.

General dietary recommendations on what we should eat to be healthy are relevant and important to older people as well. This applies, for example, to choosing food that does not contain a lot of fat or sugar and has a high carbohydrate and fibre content, and to preparing food with a minimum of cooking fat (Add life to years). According to Herman Adlercreutz, Institute of Preventive Medicine, Nutrition and Cancer, rye-bread reduces the risk of breast cancer and coronary sclerosis by between 60 and 100 per cent.

The balance between energy and nutrients should receive particular attention. The body's energy requirement decreases as we grow old, even if we are healthy. This is partly due to a drop in metabolism, by about a third in the course of a healthy lifetime, but also to a gradual decrease in the level of physical activity. Merely cutting one's diet by a third is not the right thing to do, however. An elderly person certainly needs less energy, but the requirement for essential nutrients is just as high as previously. This places special requirements on food quality, i.e. how much nutrition it contains in relation to its energy content. A sick person may also have a greater nutritional need than a healthy person and this is true of any age group.

Living alone, having a disability, losing a close relative or friend can all lead to a feeling of loneliness, which may also affect a person's food and nutritional status to

the extent that s/he loses interest in food and cooking altogether. A person who feels lonely also feels more ill, consumes more medicine and is more tired than others (Add life to years).

Social networks and support have also been proven to have a clear connection to eating habits and health. A study of 68 year-old men in Malmö showed that only 12 per cent of those who enjoyed good social support had a poor diet whilst 30 per cent of those with poor social support had poor eating habits.

Another Swedish survey studied the eating habits of female municipal employees both prior to and after retirement. Their intake of energy and almost all basic nutrients had a clear tendency to drop from the time prior to retirement to afterwards, despite an increase in body weight and abdomen size, suggesting a decrease in physical activity after retirement. The survey also showed an increased consumption of Danish pastry, potato chips and similar food. There is therefore reason to believe that retirement, at least for women, can imply negative changes to eating habits.

There are at least two aspects to the relationship between nutritional status and alcohol. Firstly, there are well known social and medical consequences of alcohol abuse that affect a person's financial situation and his/her choice of food. Secondly, alcoholic beverages are low in nutritional value. They provide the body with plenty of calories, but very few important nutrients, and are therefore particularly unsuitable for people with a low energy requirement (Add life to years).

Nutrients that are particularly important include vitamin D and calcium, both of which combat osteoporosis and hip fractures. Attention should also be paid to the dietary fibre content of food, since older people's consumption of fibre-rich food is somewhat lower than it should be. This can help reduce the risk of e.g. constipation, colorectal cancer and diabetes. There is strong evidence to suggest that a diet rich in vegetables, fruit and berries helps to reduce the risk of common cancers.

Water is very important for elderly people. Water imbalance can be caused by conditions that are common to old age, e.g. diarrhoea, fever and kidney disease. This is partly due to a reduction in the water content of the body as people get older and partly to a decreased sensation of thirst in elderly people, especially the very old. Many elderly people may therefore develop a negative water balance, which often necessitates active prevention measures.

The common belief that elderly people in most western countries undereat cannot be substantiated, at least not in people under the age of 80. But there is considerable variation and in Sweden, about 10 per cent of those aged between 70 and 80 are likely to suffer some degree of malnutrition. Various studies have been able to show that there are specific malnutrition risk groups among the elderly, such as those with only a short education, those with low incomes, those living alone, widows and widowers, people who do not eat prepared food on a regular basis, disabled people, those suffering from depression or other mental disorders. The following ten risk factors can be highlighted:

- Fewer than eight main meals a week
- Very little milk consumption
- Major lack of fruit and vegetables
- Food not consumed, despite being delivered hot and ready to eat

- Long periods during the day without food or drink
- Depression or loneliness
- Unexpected weight change, noticeable weight gain or loss
- Difficulties in shopping for food
- Poverty
- Notes in medical records pointing to disability and alcoholism.

The risk factors vary during different periods of life. A survey in Göteborg, for example, has shown that survival between 70 and 80 years was positively related to a high BMI in both men and women, high total cholesterol in men and low triglyceride levels in both sexes. Survival was not significantly related to total cholesterol in women or to systolic blood pressure in either sex. BMI is the index most commonly used to define excess weight and obesity, where an index of 20–25 is considered normal, 25–30 as overweight and over 30 as obesity requiring treatment. Preserved body weight in elderly people can probably be seen as a health indicator and hence a higher body weight does not necessarily mean a poorer health status (Add years to life).

At the Nordic Gerontology Congress, held in Århus in May 2002 (see also page 20 of this report) data was presented showing that a BMI value of over 25 (25–30) was not correlated to higher mortality particularly among men. Women, however, should have a BMI value of less than 25. A Nordic comparative study with a follow-up period of eight years (Törmäkangas T, Heikkinen E, Steen B et al. The relationship of Body Mass Index and physical fitness to survival in elderly people) sampled a total of 933 people and found that mortality is lower among physically active people in all BMI categories. Mortality among active, overweight individuals was the same as among physically active people of normal weight and was lower than for thin, physically inactive people.

A comprehensive study on the contraction of cardio-vascular disease in female nurses with different BMI values was performed in the United States. A total of 84,000 women in the 30–55 age group, who were not diagnosed as having cardio-vascular disease, cancer or diabetes in 1980, were registered in an extensive questionnaire, asking them questions about their BMI, smoking habits, alcohol consumption and physical activity. The group is being constantly monitored and an article in *The New England Journal of Medicine*, 6/7 2000 (Stampfer MJ, et al. Primary prevention of coronary heart disease in women through diet and lifestyle) presented the results up to 1994 regarding the analysed risk factors.

A Greek study referred to in the *New England Journal of Medicine*, June 26, 2003, has monitored 22,043 people over 44 months. Information about their diets has been compared to gender, age, education, BMI, physical activity and smoking data. Cancer and cardio-vascular disease mortality was significantly lower among those who ate a traditional Mediterranean diet based on fish, vegetables, fruit and olive oil than among the others.

The group with a BMI of less than 23 was used as a standard. A higher risk of contracting cardio-vascular disease was already noted in the 23–25 BMI group and this risk rose dramatically in the 25–30 group. *Those with a BMI of over 30 run about a*

50 per cent higher risk. Just over 1,800 cases of cardio-vascular disease including stroke were registered in total.

Excess weight is a risk factor of poor general health, morbidity and mortality. Very overweight people display symptoms of tiredness, ache and diminished mobility much more often than people of normal weight. If the excess weight is concentrated to the abdomen, the risk of hypertension, cardio-vascular disease, stroke and type 2 diabetes increases. Several studies from different parts of Sweden show that the number of overweight people is constantly rising.

The ULF surveys present data on excess weight gathered from interviews in 1980–1981, 1988–1989 and 1997–1998. The percentage of men in the 66–73 age group with a BMI of 25 or more has increased from about 50 to about 60 per cent (1981–1997). The corresponding rise in women has been from about 50 per cent to about 55 per cent (National Board of Health and Welfare, 2001 Public Health Report).

Obesity (a BMI of 30+) has considerable bearing on total mortality. The excess risk of death, age-standardised in the 45–74 interval, is 34 per cent for men and 46 per cent for women. The follow-up period was 1980–1998. The percentage of obese people in this age group is still relatively small (about 10 per cent), but did increase during the period. The percentage among blue-collar workers was about 11 per cent and about 7 per cent among medium/high-level white-collar workers (SCB report 93, Living conditions of the elderly 1980–1998).

One woman in ten in the 75–84 age group can be described as underweight (BMI of less than 20). The corresponding figure for men in this age group is a mere 3 per cent. Every tenth individual in the over-85 age group says s/he eats neither vegetables nor fruit and berries (Stockholm Gerontology Research Center, Public Health Report).

An extensive study on excess weight and cancer mortality (Calle E, Rodrigues C, et al. Overweight, obesity and mortality from cancer in a prospectively studied cohort of U.S. adults) was published in *The New England Journal of Medicine* in April 2003. More than 900,000 adults who did not have cancer in 1982 were monitored for 16 years. The link between BMI and cancer mortality was studied and it was concluded that the risk of mortality from cancer went up by 50 per cent in men with a BMI in excess of 40 and by 60 per cent for women in the same category. There was no excess mortality in men (and only a slight increase in women) with a BMI of between 25 and 30. The mortality risk increased gradually for people with a BMI of between 30 and 40. The following cancer diagnoses are linked to men and women with a high BMI: cancer of the throat, large intestine/rectum, liver, gallbladder, thyroid and kidney. The risk of contracting cancer of the stomach and prostate is greater for men and women run a greater risk of breast, uterine, cervical and ovarian cancer. According to the American study, excess weight and obesity are responsible for 14 per cent of all cancer mortality in men and 20 per cent in women.

In conclusion, most healthy older people eat well and change their eating habits the same as other age groups do. Older people currently use more low-fat milk produce and they eat plenty more vegetables than they did in the 1970s and 1980s. Fibre intake has increased but is still under the recommended daily level. Meals are spread

out during the day, they eat breakfast, prepare food for lunch or the evening, or make a lighter lunch and eat a cooked meal in the evening and a few snacks in-between (Add life to years).

Alcohol

The alcohol-related diseases that affect older people in particular include early dementia of various forms, intestinal damage caused by insufficient nutrition uptake, cirrhosis of the liver, diabetes, heart failure, osteoporosis and gout. There is also a connection between alcohol consumption and suicide. These diseases could at least partly be prevented or postponed if people adopted better alcohol habits earlier on in life. An estimated 5–12 per cent of men and 2 per cent of women in the western world have an alcohol problem when they reach the age of retirement (National Board of Health and Welfare, 2001 Public Health Report).

Persistent alcohol abuse accelerates the normal aging process. Neurotransmitter levels in the brain decrease with age. A 70-year-old does not derive the same feeling of satisfaction from consuming alcohol as s/he did forty years earlier. But although the perceived positive effects of alcohol decrease, its negative effects remain the same or intensify with age. Many people also reduce their alcohol consumption as they grow older, probably because the body is less tolerant of the substance in old age. It is also important to point out findings in recent years indicating lower heart mortality in people who regularly consume moderate amounts of alcohol compared to those who never drink or are large-scale consumers (Add life to years).

In the American study of over 80,000 nurses referred to above, a reference group that drank the equivalent of 1 dl of wine or more a day was compared to three other groups that drank less. Only 1.2 per cent drank more than 4 dl of wine a day. The less alcohol that was consumed, the higher the risk of cardio-vascular disease or stroke. Excess risk in the group that didn't drink at all was 50–80 per cent. The comparison only included people who had no previous history of cardio-vascular disease.

According to the ULF surveys, a fifth of men and a third of women aged 65–74 are teetotal and the corresponding figures for the 75–85 age group are a third of men and almost half the women. Alcohol consumption varies between socio-economic groups. Large-scale consumers of alcohol are basically as common among former blue-collar as among former medium/high-level white collar workers or higher. The percentage of large-scale women consumers is highest among medium/high-level white-collar workers or higher but is low among blue-collar workers. Forty-five per cent of those in the latter group are teetotal (National Board of Health and Welfare, 2001 Public Health Report).

In a public health survey in Stockholm County Council in 1998, 15 per cent of men and 8 per cent of women in the 65–84 age group said they drank the equivalent of more than two bottles of wine on the same occasion at least once a month. This is much less than in younger age groups, especially for men (Stockholm Gerontology Research Center, 2001 Public Health report). Drinking large amounts of alcohol on the same occasion (intensive consumption) has, however, always been most common

in the lower social classes (Leifman H. Social class and alcohol habits in different social strata and the implications for the formulation of alcohol prevention measures. National Institute of Public Health, 1998). The consequences of alcohol abuse are also more serious in the lower social classes (Add life to years).

The generation that is now over 70 grew up in a climate of alcohol restriction. Those who will reach the same age in 15–20 years time have been brought up in a much more “alcohol-liberal” climate. We can therefore expect the alcohol consumption of elderly people to increase in the future. A high consumption of psychotropic drugs, a not-uncommon occurrence among elderly women in particular, accentuates the problem. At least 50 per cent of all medicine prescribed to elderly people interacts with alcohol. Chronic damage will only emerge a long time after the rise in consumption but acute damage may increase after a very short latency period.

The aging process leads to a reduction in the body’s fat and water content. This applies to both women and men. Since alcohol is only distributed to body water and this volume of water decreases with age, alcohol levels in older people will be higher than in younger people, assuming the alcohol intake is constant.

Medical/illicit drugs

Some registered medical products are addictive, such as sedatives and sleeping pills. Studies and statistics both indicate that they are prescribed far more than they should be. Their side-effects include impaired memory function, sense of balance and social relations. Sleeping pill consumption increases dramatically with age and the average intake of women is double that of men. About 50 per cent of sleeping pills are taken by the over-65 age group. The fact that use increases with age is probably due to greater morbidity. If the drug is used correctly, treatment should not last longer than three months (Add life to years).

The number of older people being treated with antidepressants is rising rapidly according to a report from the National Board of Health and Welfare (Medical drugs in use – changes and trends. Medical drug use among the over-80s. An interim report 2002:2). About 14 per cent of people over 80 use antidepressants. At the beginning of the 1980s, this figure stood at 1 per cent. The over-80s constitute 5 per cent of the population but are responsible for 19 per cent of total medical drug consumption.

It is generally accepted that consumption of a long period of time can cause addiction and abstinence, but opinions are divided as to the extent of the addiction problem. Some patient organisations claim that addiction to sleeping pills and sedatives is now so common, it should be viewed a widespread disease. On the other hand, many psychiatrists feel the problem to be quite rare. The body’s ability to break down these drugs varies considerably from one individual to the next and diminishes with age. Large doses can lead to memory loss and several studies point to such drugs causing memory disturbances even when conventional doses are administered on a regular basis. They affect muscular tension, balance and reaction time. This means they also increase the risk of falling, and subsequent injuries such as femoral neck fractures (Add life to years).

As people grow older, their bodies change, both as the result of illness and of the aging process itself. Greater morbidity and the occurrence of various ailments and disorders also lead to the use of medical drugs potentially being widespread. The proportion of body fat in relation to body water increases. Fat-soluble drugs can therefore be distributed into a larger volume, resulting in them remaining in the body for longer and perhaps accumulating. Psychotropic drugs such as sedatives and sleeping pills are fat-soluble. The number of drugs represents the most significant, and only reliably proven, risk factor for side-effects (Stockholm Gerontology Research Center, 2001 Public Health Report).

Illicit drug abuse is not a major problem among the elderly. Out of a survey of 14,000 individuals receiving treatment for diagnosed drug abuse, only 2.1 per cent were 65 or older. This group was dominated by women, however. The risk of continuing to abuse illicit drugs after having tried them is strongly influenced by social background variables (Add life to years).

Improving public health

– the responsibility of the whole society

The history of public health work stretches over several centuries. It is only recently however that the focus has been turned on older people both in Sweden and abroad. Scientific data has been compiled at the EU level to promote successful public health measures for older people (Proven strategies to improve older people's health. A Eurolink age report for the European Commission. Edited by Elizabeth Drury, July 1999).

Awareness of how the design of society influences health is the basis of all public health work. Living conditions and the criteria upon which we base our choice of lifestyle should be such as to delay the onset of ill-health and disability until as late in life as possible. Making it easier for the elderly to live an independent life despite ill-health and disability should be a central objective of health-oriented community planning. This is also true of health impact assessments (HIA) as an aid to incorporating health effects into enquiries and planning (Stockholm Gerontology Research Center, 2001 Public Health Report).

Successful public health initiatives are being pursued today in many countries. Under Swedish law, the main principals of healthcare (the county councils) are obliged to promote good health among the population in the area for which they are responsible. A common characteristic of public health promotion is that it has only focused on older people to a limited extent up to now. This is starting to change. The above-mentioned report from the European Commission, which has also formed the basis of much of the *Add life to years* report from the National Institute of Public Health et al and the 2001 Public Health Report from the Stockholm Gerontology Research Centre, referred to above, states that there is considerable potential for public health initiatives aimed at older people.

Health trends in older people have a considerable bearing on the need for care. These trends can be influenced through health-promotion and disease-prevention measures (Will there be a helping hand?, appendix 8 to LU 1999/2000, National Public Health Committee; Health on equal terms – national objectives for public health, Official Government Report 2000:91, Stockholm Gerontology Research Center, 2001 Public Health Report).

The whole of society must be mobilised, and not just the health and medical care services, if we are to achieve the national objectives. The government can, for example, promote older people's participation on the labour market. Housing, traffic, parks and support to associations are municipal concerns. Other more targeted measures, such as those directed towards elderly immigrants and the families and friends of dementia-sufferers, can involve county councils and municipalities as well as housing companies, associations and other NGOs. Measures targeting the individual come under the remit of both the health and medical care services and the home-help services. Trends in older people's health and well-being ultimately depend on the

actions and involvement of older people themselves. Enjoying good health presupposes a feeling of meaningfulness, participation and cohesion in elderly people themselves. Without this, health-promotion measures for the elderly cannot be successful, however well-intended and well-organised they may be (Stockholm Gerontology Research Center, 2001 Public Health Report).

Local conditions and requirements determine to what extent older people can cope with daily life. Disability becomes a problem when requirements exceed ability, for example when it is too far for an older person to walk to the shop or when the steps on the bus are too high for him/her to get on. Community planners should aim to design a society in which older people can live an independent life for as long as possible. Social services should for example be based on respect for people's rights to self-determination and personal integrity. Consequently:

- Living conditions and the criteria upon which we base our choice of lifestyle should be such as to delay the onset of ill-health and disability until as late in life as possible.
- Society should be designed and social measures should be implemented in such a way as to allow people to manage on their own for as long as possible even if they suffer from ill-health and disability.

Health and well-being have a strong connection with an individual's control over his/her own life. At the same time, humans are social creatures. Interacting with people and being important to others are central human needs. Findings from various studies indicate that many older people, indeed perhaps the majority of them, feel quite satisfied with life and lead healthy lifestyles. They take regular exercise, and are well aware of the benefits of a healthy diet. But a healthy lifestyle is not everyone's lot. Health adheres to class patterns. Many people – especially those with a working class background, who left school early and are low income-earners – do not take enough physical exercise and have poor eating habits. It is particularly important to make it easier for them to change their lifestyles. We know that it is never too late.

The Social Services Act and Health Services Act of 1982 underline the importance of participation in community planning. The social services should also familiarise themselves with the living conditions in their municipality and promote healthy environments in partnership with other societal bodies, organisations, associations and individuals. The health and medical care service should promote good health for the entire population.

Many of the ideas that guided community planners in the 1970s have taken root. For example, facilities for the disabled and accident prevention have pervaded the design of dwellings and housing areas. The realisation that we can influence how society is designed and that this is important for public health has held true. The concept of community planning, however, has partly been given new meaning. Today, it is more about conscious and systematic changes that can be initiated in all sectors of society and that are based on an understanding of what creates good conditions for the citizens (Stockholm Gerontology Research Center, 2001 Public Health Report).

Public health promotion among the elderly

Old-age pensioners do not constitute a uniform group. Their needs and what suits them are highly individual. Some proposals presented in the above-mentioned report from the Stockholm Gerontology Research Center are reproduced below.

Togetherness and participation in social activities are important for health and well-being. Support to neighbourhood communities and access to premises for the elderly can, when correctly formulated, be a cost-effective way of stimulating them in their daily lives and thereby promoting their health and ability to cope on their own. NGOs are a considerable resource and can prevent social isolation among older people who have a poor social network and have been struck by failing health. One success factor has been a professional coordinator, who has been able to support the development of voluntary organisations and then provide continued guidance and inspiration.

Many immigrant associations run activities, for example in the form of day centres, where older people get the chance to meet people with the same cultural and linguistic background. Experience shows that associations with good linguistic and cultural skills have recruited many elderly people to their activities. This points to a considerable need for day centres such as these and proves that they fulfil a major function for older people (Stockholm Gerontology Research Center, 2001 Public Health Report and the National Institute of Public Health report 2002:27, Invest in older people's health).

Apartments that are easy to keep clean, access to a lift in the building, proximity to supermarkets and good access to public transport are some of the important factors if the elderly are to stay active, have contact with their families and friends and live as independent a life as possible. Community planning and the supply of housing are hence two important components when it comes to promoting good health among older people. Having social support in their living environment means people are better equipped to tackle their everyday problems. The vast majority of older people wish to carry on living where they are. Forcing them to move may constitute a health risk. Even dementia-sufferers should have the opportunity to stay in their own homes as long as possible.

A number of surveys suggest that most older people do not want to live in categorised housing, i.e. senior citizen housing, but in apartment blocks and housing areas where there is a mixture of ages. Dwellings should therefore be designed and equipped in such a way as to make them suitable for older people with disabilities as well. It may seem the rational choice to move when still in your sixties, when you are still active and can still feel at home. Several studies indicate, however, that it is not especially common for people to plan how they are going to live when they need a lot of care. A study of people born between 1944 and 1954 indicates that a majority want to stay on in their homes even as pensioners and several want to move to another house from their existing one (Stockholm Gerontology Research Center, Public Health Report).

The home can provide good opportunities for an active life and improve a person's chances of being able to manage on his/her own. It must of course have a well-planned,

well-equipped kitchen that stimulates and facilitates cooking one's own food. A practical, easy-to-clean bathroom with a good level of safety – handles, non-slip mats, etc., is also important. Most accidents that befall elderly people happen in the home and often in or near the bathroom. The equipment must be designed so that using it requires a minimum of physical exertion and no external help. Several studies of senior citizen housing point to a poor standard of indoor lighting. Elderly people need stronger lighting to be able to see even with the aid of spectacles. Poor lighting increases the risk of accident and makes activities such as reading and handicraft more difficult (Stockholm Gerontology Research Center, 2001 Public Health Report).

Nine out of ten 55–64 year-olds feel it is important to be close to the natural environment when they get older. Living centrally in a lively, vibrant environment is not as highly valued (Tearing down the age ladder, a report from the Senior 2005 Committee). Seventy-four per cent of those aged between 65 and 80 in Stockholm county say they are often outside in green areas adjacent to their homes. Proximity to parks with good paths without steep hills, plenty of high park benches (easy to get up from) in sheltered, sunny or shaded spots means that even frail elderly people can get out on their own, enjoy the sunshine and nature, meet friends and feel affinity (Stockholm Gerontology Research Centre, 2001 Public Health Report).

Accidents and injuries are most effectively prevented in the place they happen. Many places where injuries occur are the municipality's responsibility. The municipalities that participate in the WHO programme "A safe and secure community", a Swedish initiative, undertake to make broad, long-term efforts to prevent accidents and injuries. Falköping municipality got going quickly (as early as 1978) with active injury-prevention measures, as did Motala in 1984 (National Institute of Public Health 2001, Of course injuries can be prevented).

Other municipalities that have participated in this programme include Arjeplog, Borås, Falun, Katrineholm, Krokoms, Lidköping, Ludvika, Mariestad, Nacka, Skövde, Tidaholm and Uddevalla.

The WHO programme specifies four steps:

- information and explanation
- education and training
- various forms of supervision
- improvements and changes in the physical environment.

A greater selection of specially adapted products, such as anti-slip devices, and also the legal ownership of these products can be added to these four points.

Measures in the home are often easy and can be done by older people themselves. Regarding the external environment, it might be a case of improving steps, maintaining paths, pavements, etc., and adjusting pelican crossings and traffic lights to more suit the speed of older people. One study has indicated a reduction in femoral fractures by 6.6 per cent per year for women and 5.4 per cent for men in Linköping during 1987–1992. Linköping municipality has implemented measures on a broad front to prevent fall accidents and was the first municipality in Sweden to be designated *a safe and secure community* by the national injury programme and WHO (Svanström

L, Ader M, Schelp L, Lindström Å. Preventing femoral fractures among elderly: The community safety approach. *Safety Science* 1996;Vol 3(1):1–7).

Within the framework of the Safe Seniors in Sundbyberg project, the local tenants' association, pensioner and disabled organisations have been involved in identifying obstacles that hamper access in housing areas and the street environment. This work has been characterised by the cooperation of many different actors, a necessity for successful work (Stockholm Gerontology Research Center, Public Health Report).

In issue 1, 1994 of *Socialmedicinsk Tidskrift* (Swedish Journal of Social Medicine), the costs of care and rehabilitation for municipalities and county council during a patient's first year after suffering a femoral fracture were estimated at EUR 16,700, the equivalent of EUR 18,600 in current prices. If, using the injury prevention initiative in Linköping as a working example, we assume femoral fractures drop by 6 per cent for the country as a whole (from about 19,000 to 17,900), this would represent a saving of nearly EUR 22.31 million in one year.

Some best practice examples of public health promotion for older people

Public health promotion in Västerbotten

The Norsjö project has already been briefly presented in the section on physical activity above (page 54). Apart from the article referred to in that section, the project is described in detail in the Swedish Institute of Health Services Development (Spri) report 226. Preventive health initiatives – an example from Norsjö. 1987. Written by Inger Brännström and by the same author: Public health promotion in Norsjö municipality. Spri report 142. 1987. A report on how the project then spread in Västerbotten county can be found in the Spri report 306 – Rings on the water – experiences of preventive health promotion in Västerbotten, 1991. The project has also been described in Inger Brännström's doctoral thesis (Brännström I, Community participation and social patterning in cardiovascular disease intervention. Department of Epidemiology and Public Health, Umeå University, 1993) and Brännström I, Weinehall L, Persson L-Å, Wester P-O, Wall S. Changing social patterns of risk factors for cardio-vascular disease in a Swedish community intervention programme. *International Journal of Epidemiology* 1993;22:1026–37.

There are a number of articles in the *Scandinavian Journal of Public Health* 29 (Supplement 56) 2001 (editors Lars Weinehall and Carol Lewis) that describe, analyse and compare the Norsjö project with other similar projects.

A safe local environment can prevent femoral fractures in older people

There are a number of best practice examples in this field. The former Skaraborg County Council established a department for local health promotion as early as the 1970s, with the aim of coordinating safety-promotion and injury-prevention

measures within the county. A reference group was established with representatives for the local health and medical care organisation, the municipal social services and pensioner organisations. Municipal administrations such as the town planning department and the environmental health office also took part.

They found that 75 per cent of accident injuries among the elderly happened in the home and that the causes of falls and fractures are complex. Social network, living alone and risk factors in the local environment may be part of the causes, as may individual factors such as physical activity, dietary habits and lifestyles in general. Even medical factors such as fatigue, osteoporosis and other conditions and medication may also play a role.

The programme therefore had a broad focus. Training for personnel from the health and medical service and the social services was an important element. The supervision of older people in their home environments was improved. Information to the general public and to various stakeholder groups was disseminated in the form of printed material, exhibitions and conferences. Local "rounds" were carried out, leading to improvements in the physical environment.

Apart from the scientific article referred to above, there is documentation in issue 1, 1994 of *Socialmedicinsk Tidskrift* (Swedish Journal of Social Medicine); Injuries in older people. *Contact persons:* Maj Ader, Health and medical care secretariat, Regionens Hus, SE-542 87 Mariestad, tel: +46 501-623 22, e-mail: maj.ader@vgregion.se, Lothar Schelp, Swedish Rescue Services Agency, tel: +46 586-623 00 or Gudrun Eriksson, National Institute of Public Health, tel: +46 8 566 135 20. Easily accessible tips can also be found in the publication *Keep on your feet*. Some tips on how you can avoid falling and injuring yourself, and Preventing fall injuries among older people, The National Injuries Programme, National Institute of Public Health, 1995. Sundbyberg is also one of the municipalities designated a safe and secure community. An anthology of methods of preventing fall injuries in older people; *Safe seniors*, Hökby A, Sadigh S, Stockholm County Council, Department of Public Health Norrbacka, 2001. The book can be ordered by tel on +46 8 517 779 25 or by e-mail: socmedlib@smd.sll.se.

Public health promotion in Habo

A health council was formed in Habo as early as 1984 on the initiative of the Director of Healthcare, Kjell Lindström. The Health Council gradually developed into a multi-disciplinary cooperative body consisting of civil servants and politicians from primary care, municipal administrations, the pharmacy, church, police and NGOs.

In 1997, the Health Council was reformed into a Public Health Council, in which the municipality received a clearer responsibility for society-oriented health promotion than previously. The Public Health Council comprised politicians and civil servants from both municipalities and county councils. The municipality held the chairmanship.

From 1981 to 1991, primary care district nurses in Habo performed outreach home visits to all those aged 75. The purpose of this visit was to identify accident risks in the home, inform about accident prophylaxis and give simple advice on

beneficial lifestyles. Since the middle of the 1980s, all the inhabitants of Habo aged 30 and 35 have been offered a health discussion at the healthcare centre to improve their health status in the long run with regard to cardio-vascular disease, cancer, diabetes and mental ill-health.

Since the middle of the 1980s, a substantial drop in the number of deaths from heart diseases in those under the age of 75 has been noted. Age-standardised male mortality from heart disease in Habo has halved and for women has dropped by about three-quarters. This dramatic improvement is clearer than for the rest of Sweden and means that mortality from heart disease is now among the lowest in the country. This data is presented in a doctoral thesis by Kjell Lindström: *Methods for Quality Development of the Primary Health Care Structure*. Linköping University, Medical Dissertation, No 719, Division of General Practice and Primary Care, 2002.

Improvements in diet, smoking habits and physical activity have also been noted in the doctoral thesis. Similar measures can be introduced into primary care without any increase in costs, but they do require a high level of manpower, which the primary care service in Habo has had. Instead, the consumption of inpatient care and elderly care has been much less than the national average (Spri report 285, Habo and Bankeryd – Healthcare consumption, costs and quality in two primary healthcare districts).

This public health promotion is now continuing in Habo with society-oriented measures – cultural activities, group travel and arrangements to strengthen the social network, balance and strength day-camps with tests, training groups, power walking, quiz walks, beginner orienteering, accident rounds and special activities to improve dietary intake and the opportunity to improve the social function of mealtimes. They are also continuing to do home visits to selected age groups to also reach those who are socially isolated and those who find it difficult to take their own initiative to discover individual and environmental factors in the home which have a negative impact on health and quality of life.

Habo documentation

Lindström K, Gustavsson M, Henriksson I, et al. Meaningful health checks of 75 year-olds. An obvious task for the primary care services. *Läkartidningen* 1986;83:1195–96. Lingfors H, Persson L-G, Lindström K, Ljungquist B, Bengtsson C. Time for a “zero vision” concerning premature death from ischaemic heart disease? *Scandinavian Journal of Primary Health Care* 2002;20:28–32.

Project: Increasing the quality of life for senior citizens in Habo. *Contact persons:* Monica Gustafsson, Director of education and training in Habo municipality, tel: +46 36-483 07, Paula Eriksson, public health planner in Habo.

The Bozorgan day centre in Gottsunda (Uppsala)

The Bozorgan (the colourful flower) association started a day centre in Gottsunda in 1996, funded by the Ministry of Health and Social Affairs. The association, which mostly appeals to elderly Iranians, had 25 members at the start. About 100 people

now take part in different group activities. The aim of the activities is to promote health, well-being and adjustment to Swedish society. The activities are now run under the management of Uppsala municipality and the project staff are still there, although voluntary measures are also performed. The voluntary workers have been recruited by knocking on doors.

Health-promotion information is given by district nurses, occupational therapists, assistance administrators, dentists, gynaecologists and nutritionists. An evaluation has shown that the number of doctor's visits for six observed Iranian women went down by well over 50 per cent. A voluntary on-call service is manned 24-hours a day and this has helped save several people's lives.

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The Loket service home in Emmaboda

The National Institute of Public Health will publish a report presenting public health initiatives among the elderly in ten municipalities/municipal districts (Emmaboda, Högsby, Majorna and other municipalities/municipal districts). One example presented is Emmaboda municipality.

Emmaboda is one of the municipalities that received funding from the Ministry of Health and Social Affairs and the National Institute of Public Health to develop social and health-promoting measures for the elderly. The activities have been evaluated in the form of a peer review, which involves the municipalities meeting each other several times and reviewing and comparing their various projects. The reviews have analysed things like the project management, control and support. The evaluation has been presided over by Monica Nordström, FoU i Väst, who has produced a report documenting the evidence: *Vibrant meeting places – creating networks* (April 2002). Emmaboda's social approach and the role of the Loket service home have been reviewed in a second evaluation by Peter Westlund, Fokus Kalmar län.

The Loket service home in Emmaboda is a meeting place for elderly people and a place where different generations with different cultural backgrounds can meet. The aim has been to create new and develop already existing meeting places to heighten people's quality of life, make it easier for people to stay on in their own homes, neutralise the need for nursing care and prevent ill-health. It was a normal service home for the elderly from the beginning with apartments and communal areas, such as a restaurant, round an open-air courtyard. For the last six years, Loket has had a clear public health profile. Participants are active and exert influence over the activities.

The effect Loket has had on older people's health has yet to be evaluated, but less of a need for elderly care has been established. The project, which has now been finalised, has had strong political support and the written intentions of the project can be found in the municipal social services plan. The centre has hence become permanent and similar activities are being developed in other parts of the municipality.

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Physical activity, good eating habits, social relations and a meaningful life are the four pillars of good health among older people.

This publication is for politicians, decision-makers and others working with older people. The report contains arguments and facts about the health development of older people and gives some examples of best practice as regards public health promotion among the elderly.

The author is a special investigator at the Unit for Community Participation and Health at the National Institute of Public Health in Sweden. His main task is to build up a knowledge base on how to improve the health of older people.



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