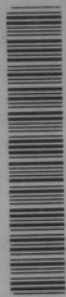




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The 21<sup>st</sup> century technological development is revolutionizing medicine and health, offering new hopes to human suffering by offering cures and treatments which were undreamed of decades ago. This is where anti-ageing medicine finds its niche. Anti-ageing medicine aims at slowing, arresting, and reversing phenomena associated with ageing by merging biotechnological innovation and engineered solutions. Ideally, by means of the newest medical technology, the 'body machinery' should be kept fit and at peak performance all life long. Early detection of age-related dysfunction should thus be 'fixed' at any age with interventions such as metabolic fine tuning, enhancement, regeneration, restoration or replacement of 'body parts' (i.e. organs, skin, bone or muscle). It covers a vast array of domains: from cell therapy to pharmaceutical interventions, from bio-surgery to aesthetic surgery, from human enhancement to fortified food, from smart housing and robots to toxic-free environments. Anti-ageing medicine holds promises but also significant risks and safety issues which are addressed in this book. It presents the latest scientific evidence on what works or does not work. It also provides public policy recommendations to ensure the protection of consumers and their rights while encouraging research and development. This book is intended for academics, health professionals, business persons, consumers and policy-makers interested in the latest evidence and ethical issues about anti-ageing medicine.

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Anti-Ageing Medicine: Myths and Chances

Zentrum für technologischen Assessment  
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 Centre for Technology Assessment



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# Anti-Ageing Medicine: Myths and Chances

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'Better Ageing' includes all dimensions of healthy ageing and active ageing, but goes beyond the traditional concept of health by taking into account new scientific determinants of quality of life in old age, human rights and equity, as well as environmental and technological factors. The European Commission (EC) has highlighted the importance of this issue in its EU Public Health Programme, and in 2004 the EC approved support for the three-year multinational project 'Healthy Ageing'<sup>8</sup>, which aims at reviewing the literature on evidence-based health promotion, synthesising current practices and policies for older people's health across Europe and making findings accessible to practitioners and policymakers.

The need to improve and increase the exchange of knowledge on healthy ageing is a challenge for industrialised countries. Prevention for older people is a developing new policy area in Europe, which has closely followed the establishment of national health strategies such as the EU Policy on "Healthy Ageing in Europe: a Keystone for a Sustainable Europe" (2007)<sup>9</sup>, the EU report "Healthy Ageing: a Challenge for Europe" (2006)<sup>10</sup> or the WHO "Age-friendly Cities" initiative (2007).<sup>11</sup>

In a report published in 2006, Switzerland has been pinpointed by the OECD and WHO for not investing more in prevention and health promotion while it has one of the most costly health systems in the world. The OECD-WHO report stresses that while Switzerland has the highest health-care costs in the world after the United States, other industrialised nations achieve comparable or even better results on smaller budgets. They also note that just 2.2% of the Swiss health budget goes towards prevention and promotion work compared with an average of 2.7% in other OECD countries.<sup>12</sup>

<sup>8</sup> See: <http://www.healthyageing.nu/templates/Page.aspx?id=1054>

<sup>9</sup> "Healthy ageing, a keystone for a Sustainable Europe", EU Health Policy in the Context of Demographic Change (January 2007): [http://ec.europa.eu/health/ph\\_information/indicators/docs/healthy\\_ageing\\_en.pdf](http://ec.europa.eu/health/ph_information/indicators/docs/healthy_ageing_en.pdf)

<sup>10</sup> <http://www.healthyageing.nu/templates/Page.aspx?id=1258>

<sup>11</sup> [http://www.who.int/ageing/publications/Global\\_age\\_friendly\\_cities\\_Guide\\_English.pdf](http://www.who.int/ageing/publications/Global_age_friendly_cities_Guide_English.pdf)

<sup>12</sup> For full text of OECD report on Switzerland, see report: [http://www.oecd.org/document/27/0,2340,en\\_2649\\_201185\\_37561819\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/27/0,2340,en_2649_201185_37561819_1_1_1_1,00.html)  
German press release: [http://www.oecd.org/document/23/0,3343,en\\_2649\\_201185\\_37567831\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/23/0,3343,en_2649_201185_37567831_1_1_1_1,00.html)  
French press release: [http://www.oecd.org/document/47/0,3343,en\\_2649\\_201185\\_37562223\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/47/0,3343,en_2649_201185_37562223_1_1_1_1,00.html)

Prevention for older people is effective, affordable, and fulfils moral and ethical responsibilities. During the last decades, a wide-ranging body of evidence has been amassed to show that prevention strategies do delay or prevent disease disability and dependency, and so reduce the need for health and social care support in later life. Results, however, take time to prove since it is a longer term process than, say, a coronary bypass operation. And while both actions aim to reduce the impact of coronary heart disease, the money invested in prevention has a long term profit for health care expenditure by postponing first occurrence and decreasing the incidence of the disease. Hence, prevention is a motivation both for policymakers and the population; it holds an underestimated positive impact on many people of all ages for invaluable periods of time. It is a low-risk, high-value expenditure.

Much can be done, after the age of 65, by society and by older people themselves, to enable every ageing citizen to remain active and in good health; nonetheless, health in later life obviously reflects the experiences and choices made earlier in life. These measures do not necessarily entail costly public policy interventions, but rather require an effort to ensure consistent messages and actions across sectors of society. Research shows that the key factors influencing health are predominantly outside the health sector and cover a wide range of other policies.

A recent study, "Healthy Ageing in Europe" (Dahlgren and Whitehead, 1991), shows that the factors, which influence health are numerous and interrelated (figure 2). The first layer includes the close family relations such as children's relations with adults, the social network and support from friends and neighbours and the community. The next layer includes the lifestyle factors such as eating habits, physical activity, sleeping habits, alcohol, and tobacco use. The more peripheral circle includes social, environmental and institutional conditions in which people live and work. These are determined by housing, education, social services, traffic, work environment, health care and others. In addition, there are major structural determinants, including environmental and socio-economic strategies.