

SOCIAL, ENVIRONMENTAL AND SOCIO-POLITICAL FACTORS OF ACTIVE LONGEVITY

by Prof. V.N. Shabalin, Prof. V.A. Grachev



Vladimir A. Grachev
Professor

President of the V. Vernadsky Nongovernmental Ecological Foundation, Russia;

D.Sc., Professor, Corr. Member of the Russian Academy of Sciences

Prof. Grachev started his career in 1960s as an engineer, then as a lecturer at the Penza State Polytechnical Institute. In 1990 he was elected a People's Deputy, Deputy Chairman of the Committee on Science, Higher Education and Training at the Supreme Council of the Russian Federation. In 1993 - 1999 V. Grachev was the Head of Staff of the Federation Council Committee on Science, Culture, Education, Health and Ecology. In 1997 – 2007 he was elected a deputy of the State Duma, the Chairman of the Committee on Ecology. Prof. Grachev is an honorary member of the PACE. Since 2011 he has been the President of the Vernadsky Nongovernmental Ecological Foundation.

Prof. Grachev is the author of 243 inventions, 625 published works, 29 monographs, 10 textbooks, 15 manuals.



Vladimir N. Shabalin
Professor

President of the Russian Association of Gerontologists and Geriatrists, D.Sc., Professor, Academician of the Russian Academy of Sciences, honoured worker of science of the Russian Federation

Professor Shabalin started his career in 1962 as a doctor of Omsukchansky regional hospital of the Magadan Region. From 1965 to 1975, he held various scientific posts of the Leningrad Scientific Research Institute of Hematology and Blood Transfusion. From 1975 to 1985 he was the director of the Institute. From 1985 to 1992 Prof. Shabalin was the Head of the Main scientific department of the RF Ministry of Public Health. From 1993 to 1997 he was the deputy minister of the RF Ministry of Public Health. From 1997 to 2013 he was the Director of the Russian Clinical Centre for Gerontology of the Russian Public Health Ministry. Since 2013 till present Professor Shabalin has been the Head of the Gerontology and Geriatry Department of the Russian National Research Medical University named after N.I. Pirogov.

Professor Shabalin is the author of 670 scientific works, 9 monographs, holds 72 patents for inventions, as an academic advisor he supervised 25 doctoral and 32 master's theses.

The most important demographic phenomenon at the turn of the 20th and 21st centuries was a global increase in life expectancy and, as a consequence, an adequate increase in the proportion of older people in the general population of the world. The growth rate of the elderly population is far ahead of the growth rate of the total population. At the same time, the older the age group, the more intense its population is growing. Dramatic aging of the population

is a major social problem that has a significant impact on the economic, industrial and social relations of the present-day world. Importance of demographic aging is so great that the UN puts it on a par with the problem of preserving peace in the world.

Diversity of processes, affecting the aging of the human body, requires formation of a complex state and international measures

to prevent the disease of aging, measures to ensure compliance with the dynamic adaptive capacity of the human body with natural and anthropogenic environmental changes.

Throughout the human history, there are many examples of longevity. It is known for the fact that there were people being up to 120-122 years

old. Women live longer than men. Jeanne Louise Calment lived 122 years. This Frenchwoman lived the longest life of all people. The oldest man is 118 years old. Apparently, these are the limits of human life.

Important facts are not only isolated cases of longevity, but also the general increase in life expectancy (Figure 1.).

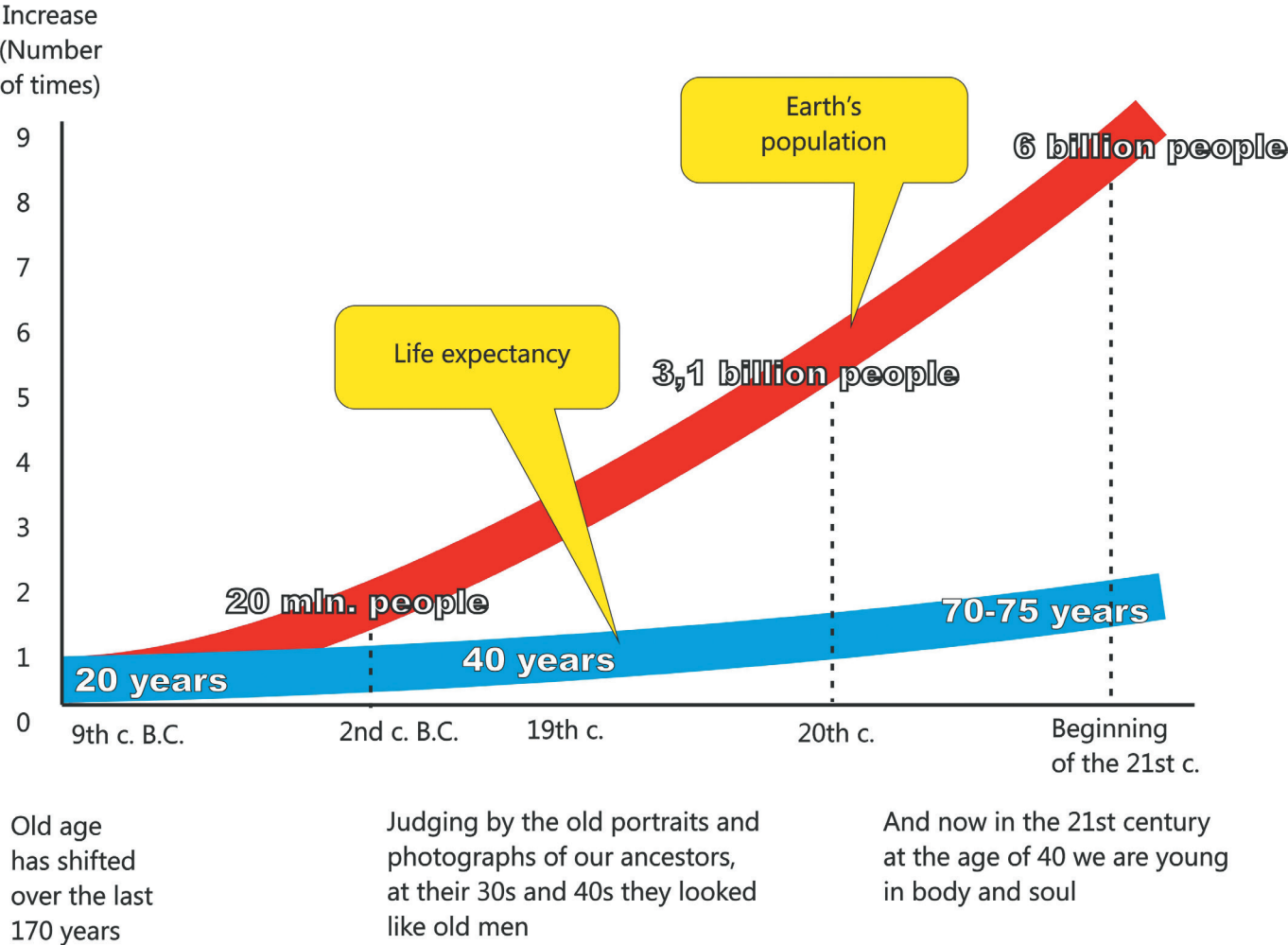


Figure 1. Life expectancy of people

It is important to note as well that the important thing is not HOW MUCH, and HOW to live your life. There are many examples of active aging: the famous Russian actor V.M. Zeldin at his 99 continues to perform on stage. Well back in the early 30-ies of the last century he became famous for his roles in the movies (almost 85 years ago). Artist Boris Yefimov lived 106 years, 103 years of which he regularly went to work. Shigechiyo Izumi of Japan lived longer than all men in the world - 120 years. His job seniority is 98 years.

No biological differences among centenarians have been found. They differ in moderation in everything, calm character, sociability and love for their neighbours. Whereas their main feature is a permanent intellectual and physical LABOUR.

Most importantly is that one must make your brain work continually. Studies have shown that actively working with the brains makes it possible to offset the inevitable dying nerve cells well into a great

age, thus increasing the working quality of the remaining nerve cells. Here are the most obvious examples, showing that old age can be as fruitful as the youth. Sophocles wrote a brilliant tragedy 'Oedipus' when he turned 100 years old. Leo Tolstoy, Voltaire, Goethe, George Bernard Shaw continued to create literary masterpieces at the age of eighty years and older. Ilya Repin, Ivan Aivazovsky created the best canvases at 80 - 85 years of age, Arthur Rubinstein gave a concert at the age of 89. Michelangelo and Titian were still creative at their 90s. Great scientists - Pavlov, Krylov, Zelinsky, Gamaleja, Michurn - continued to experiment and lecture when they were in their eighties.

It is true that physical and even some mental abilities deteriorate with the age, and memory is visibly losing. Many people feel they could not keep up with the changes happening around them. There is a desire to dissociate themselves from the rest of the world. It is wrong. It is important not to be afraid of novelties, try at least to elementary understand it. After all, intellectual capacity not only



Fig.2 Ivan the Terrible here is 48 years old (1581), and the author of this article is 70.

strengthens the brain, but also develops confidence. For a man who exceeded sixty, there is only one recipe for longevity - work. This is the basis of longevity system (Fig. 3).

Sense of happiness is the psychological basis of longevity. And happiness is more dependent on our internal systems than the external conditions. Centenarians are able to control their mood and even see the silver lining of the cloud. For them, the vessel is always half full, rather than half empty.

A human being is a favorite child of evolution, because he is the most developed. Our improvement and elevation have processed everything both flora, and fauna. And the evolutionary quest for the best, most perfect structure now led to the creation of a higher sample of matter - it is the human brain, intelligence. And because

humanity has become the most progressive branch of biological matter, it was the evolution that increased the population of the homo sapiens species, and allowed him to live long.

Brain is our most lazy organ. The hardest thing is to overcome mental laziness. Brain often suffers not from work rather from idleness. It does not wear at all from an active work, but only consolidates and develops. Just like muscles, the brain grows old without work. It is true for all age groups. The active work of the brain is especially important in the old age for preserving memory and mental clarity. If it is possible, it would be necessary to continue working professionally, helping young colleagues write articles, books, learning foreign languages, solving crossword puzzles, memorizing poems and verses. It prevents decrepitude brain.

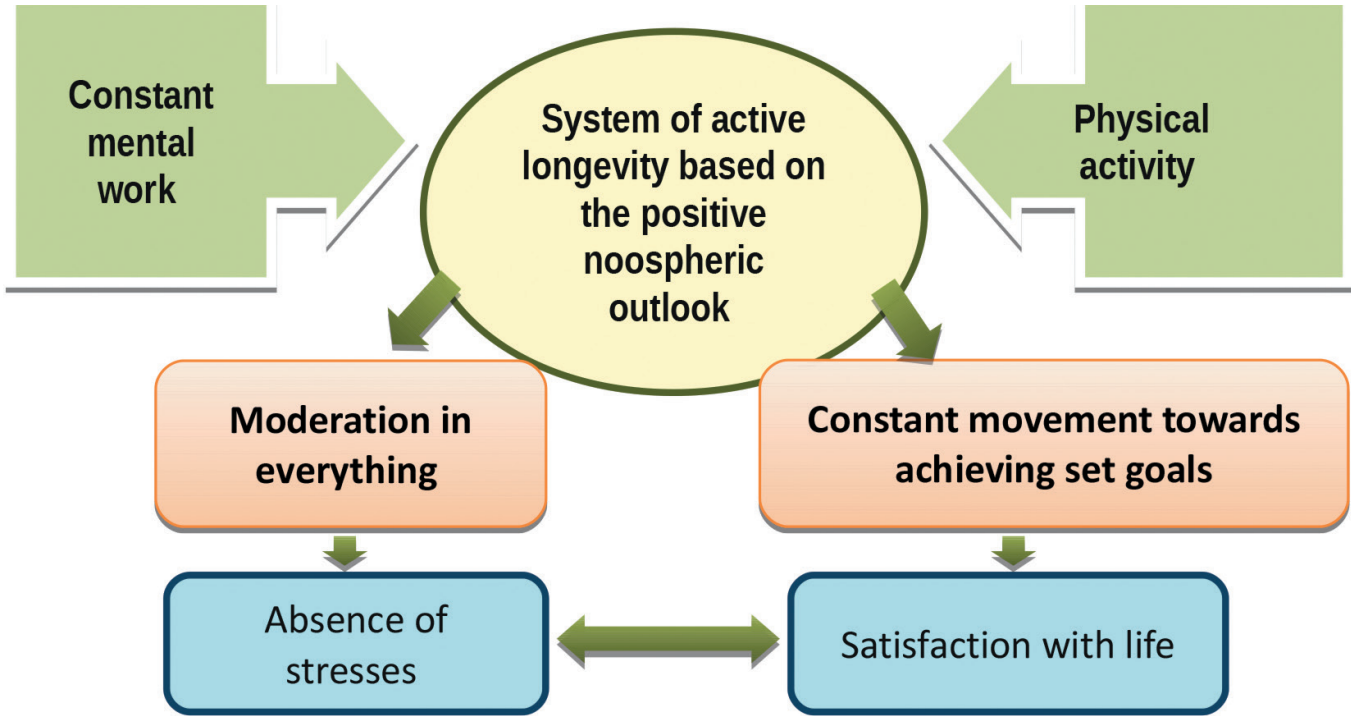


Fig. 3. Wise active longevity

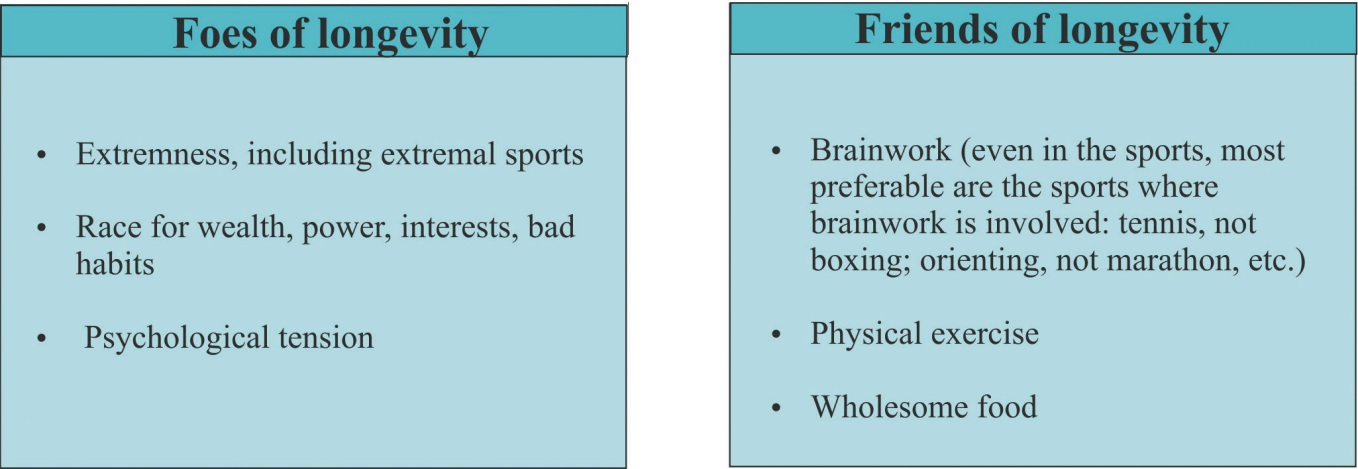


Fig.4. Friends and foes of longevity

However, we should not overstrain our brain because it could lead to stress, and there would be no benefits of such activity. An excessive stress is mentally and physically harmful. There are no professional athletes among centenarians, but there are many scientists (members of the Academy of Sciences live longer than businessmen).

Active longevity and psychological stress are incompatible. Among centenarians the share of laid back, friendly, 'balanced' people actively involved in both mental and physical labor is the biggest (Fig. 4).

Personality development begins in childhood and never stops: it is necessary to purposefully think hard, act, perfecting the world and ourselves, accumulating knowledge and skills to pass them to the next generations. Education, professionalism and, to some extent, the success of each individual are the basis of the constant improvement. One should start to think about longevity already during his younger age. The correct way of life and self-development are the basis of longevity (Fig. 5).

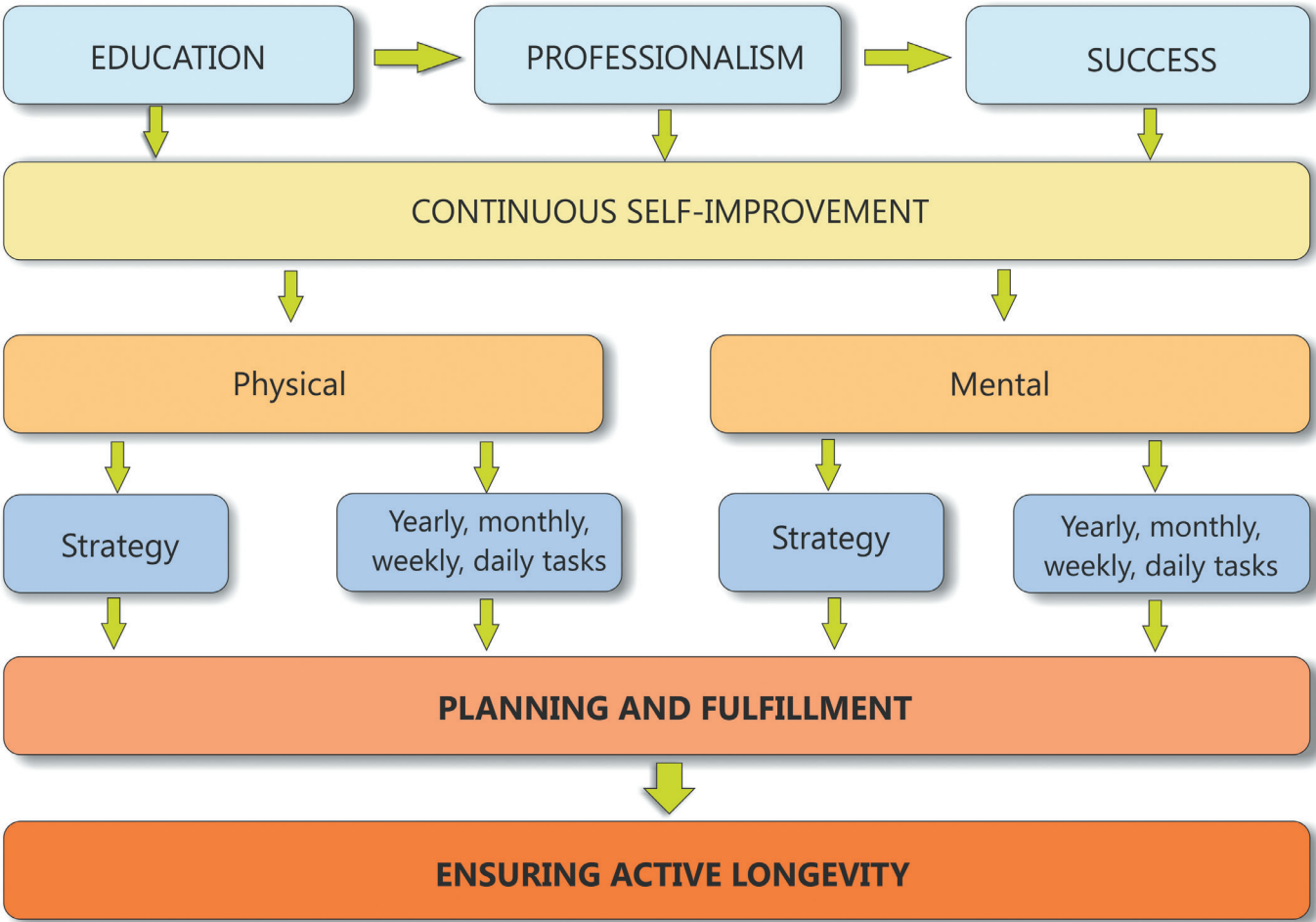


Fig.5. Self-improvement is the basis of the wise active longevity

Attitude towards older people is an important criterion of political, economic and moral well-being of society and the definition of a positive perspective for the further development.

Summing up, we would like to recommend organizations to use active longevity of older workers. Our recommendations to scientists-gerontologists is to develop a program of active longevity, together with trade unions and political parties, in those countries that support the PACE resolution on this issue.

In everyday life in Russia we see, unfortunately, a very different picture. Despite the fact that the Russian Constitution stipulates in the Paragraph 2 of the Article 19 the prohibition of any form of restrictions imposed on the citizens' rights on social affiliation, in-laws of the Russian Federation have bans and restrictions, prohibiting occupation of certain positions on the age indicator, excluding the actual physical and mental condition of the individual.

An unreasonable prohibition on practicing research and teaching positions (rector, provost, etc.) seems unreasonable. Since the Article 332 of the Labour Code (as amended. Federal law dd. 30.06.2006 N 90 -FZ) prohibits from holding the provost position at the age of 65 and older. Many examples of highly efficient work of scientists, including in management positions, suggest that this namely age is a heyday for scientists, as well as of CEOs. The legendary Russian Minister of Atomic Energy Ye.P. Slavsky took his position when he was 60 years old and

then led one of the most important industries in the Soviet Union for almost 30 years. The whole world practice confirms this thesis. Just look at the age composition of the parliaments of the leading countries of the world. In the Japanese parliament 60 years old means young parliamentarians. Wisdom is more important than all other factors. Wisdom comes with experience and knowledge, and those who accumulate knowledge during all the life, analyze the experience; the one who has proven that he is socially useful and needed by the society as a wise vault of the world experience, has the right to work.

And indeed, we should fall into a muse 'Is it ethical to deny a person his right to work, a creative work!'. In our view it is immoral and impractical in terms of the interests of the society.

In conclusion, let us say a few words about the prospects for longevity. Everybody is trying to find some secrets –but there are no secrets. Bases are given above. The perspective lies only with the scientific research. The science of the 20th – 21st centuries works wonders. Biological processes in living nature are very long-lasting (Fig. 6).

What are we worse than perch, sea urchin or parrot? 'They remember Pushkin and will remember us.' We are confident that it is real to extend people's life up to 100 years old, and the records like 120 years old and even 150 years are quite beatable. In the nearest future science is likely to discover inexhaustible sources of energy and reveal the reserves of prolongation of the human life.



Fig. 6. Life expectancy of fauna in the biosphere