

# INTERNATIONAL ASSOCIATION OF GERONTOLOGY AND GERIATRICS European Region

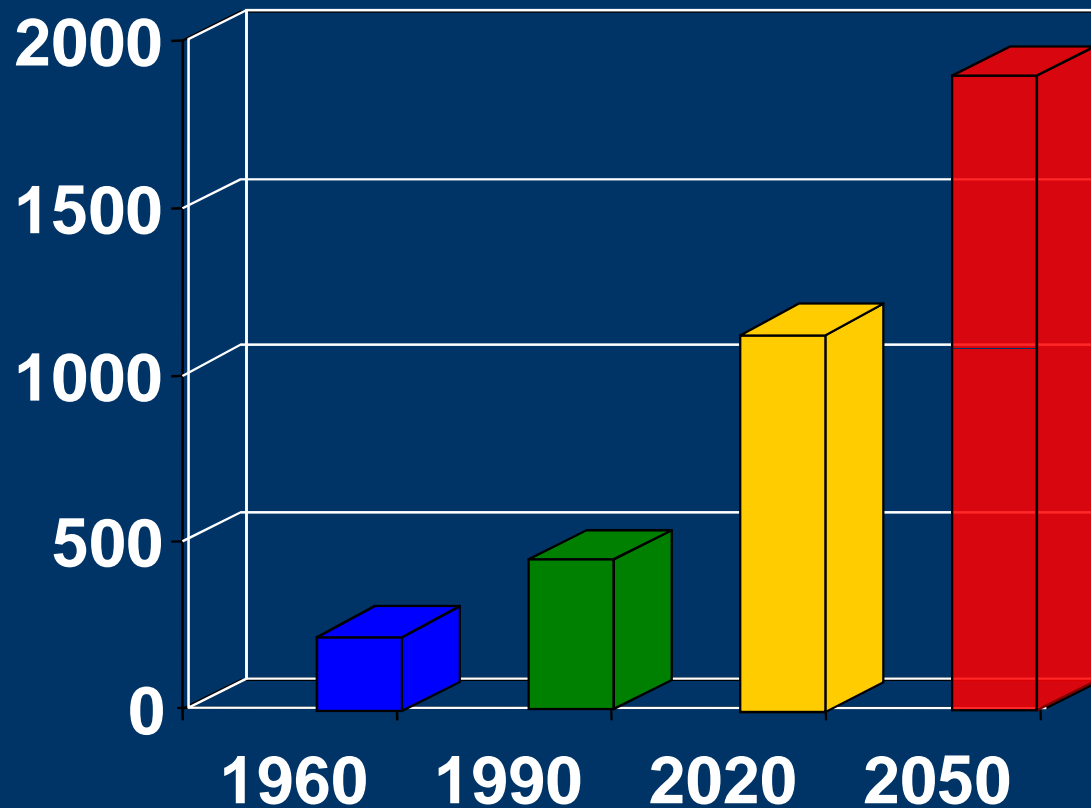
## INTERNATIONAL DAY OF OLDER PERSONS 2011

Science based approach

Prof. **Vladimir Khavinson**, M.D.,Ph.D.  
President IAGG-ER



# Global ageing

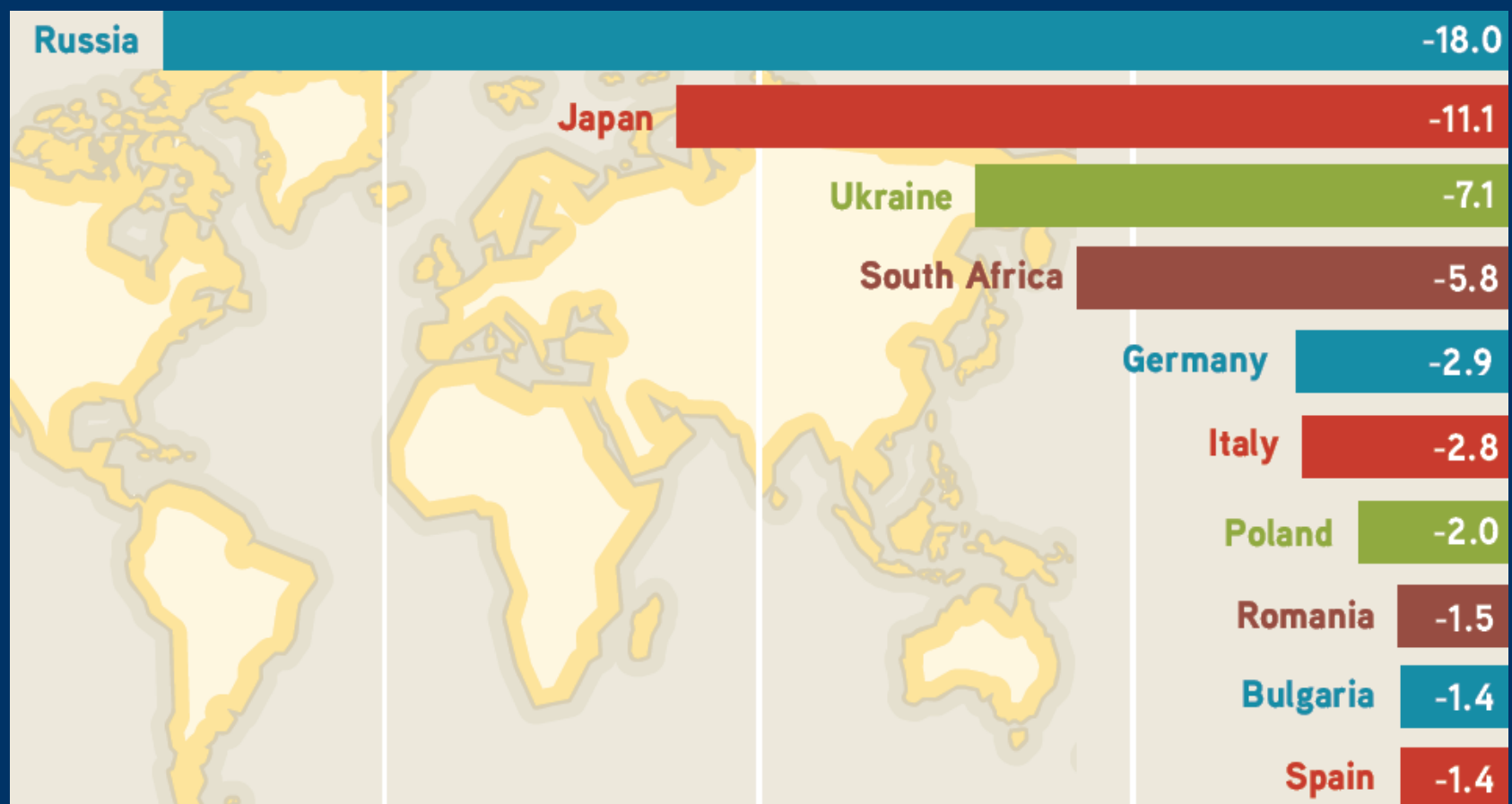


World population over 60 years old

The number and proportion of older persons is growing rapidly. In the past three decades their numbers have doubled. By 2050, the global population of older persons will total 2 billion

*Ban ki Moon,  
UN Secretary-General, IDOP  
2010*

# Projected population decline between 2006 and 2030 (in millions)



# International Day of Older Persons 2011

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**«Active and Healthy Ageing  
2012»**

**“Launch of Madrid+10:  
The Growing Opportunities &  
Challenges of Global Ageing”**

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# Major ageing-related transitions

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- A rapid increase in life expectancy in developed nations in the 20th century;
- reductions in infectious diseases and declining early age and maternal mortality;
- medical advances in recent decades that led to declining middle- and old-age mortality;
- rapid demographic shifts in the age structure known as population ageing.

*Kinsella and He, 2008*

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## MADRID INTERNATIONAL PLAN OF ACTION ON AGEING



239 recommendations  
in 18 fields



7 recommendations  
directed to the science  
and the scientists  
working in the field of ageing

- ❑ Understanding the biology of the ageing process;
- ❑ What is healthy ageing;
- ❑ What are risk factors for unhealthy ageing;
- ❑ Developing appropriate and timely interventions at a societal and individual level to reduce unhealthy life years and maximize health of our older populations.

# “Active and Healthy Ageing 2012”

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- Improving quality of life of the older persons;
  - Stimulate the technological innovation in care;
  - Increase the employment degree of the general population through these activities.
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# “Active and Healthy Ageing 2012” IAGG-ER + EUGMS

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- To create a “European Ageing Research Institute”;
  - To create the European Medicines Agency a “Geriatric Medicine Committee”.
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# Biogerontology project

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A special issue of the Journal “Biogerontology” (*Editor-in Chief Prof. S. Rattan*) embraced the Achievements of the national gerontological societies to share with the European and world Scientific community.

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# The Global Agenda Council on the Ageing Society: Policy Principles

Global Policy Volume 2, Issue 1, January 2011 97

## The Global Agenda Council on the Ageing Society: Policy Principles

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Linda Fried, *Columbia University*  
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**Abstract**  
In 2008, the World Economic Forum (WEF) created the Global Agenda Councils – an amalgamation of scientists, public policy makers, academics, physicians and business leaders with the task of devising transformational innovation in global governance for the purpose of advancing knowledge and collaboratively developing solutions for the most crucial issues facing humanity. Because of its overarching effect on many aspects of society, a Council was created to address global issues associated with an ageing society. The Councils have the task of challenging prevailing assumptions, monitoring trends, proposing solutions, devising strategies, making public policy proposals and evaluating the effectiveness of actions using measurable benchmarks. This report is the first product of the WEF's Council on the Ageing Society – our goal is to lay down the initial principles that will guide our actions in the coming years.

According to conventional wisdom, growing numbers of people living to advanced ages pose challenges for developing and mature societies alike (Longman, 1987; Peterson, 2000). Doomsayers assert that elders will increasingly claim a disproportionate share of financial and health care resources, straining government funds and business and household budgets (Kotlikoff and Burns, 2005). The problem is thought to become more burdensome as life expectancy increases and populations age, thus diverting attention from other global priorities such as climate change (Friedland and Summer, 1999; Speth, 2005). Developing nations will also experience population ageing just like the rest of the world.

However their experience is opposite to that of developed countries which became rich before they grew old; developing countries are growing old before they become rich (Kalache et al., 2005). This will produce complicated and challenging demographic and economic conditions. These considerations have important policy implications, in particular for how societies view current and future cohorts of older adults and how resources can and should be allocated to maximise human capital in ageing populations.

According to the Council on the Ageing Society, this negative scenario does not have to be our fate. There are also significant benefits and opportunities in an

Survey Article

Global Policy (2011) 2:1 doi:10.1111/j.1758-5899.2010.00053.x © 2011 London School of Economics and Political Science and John Wiley & Sons Ltd.

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# The Global Agenda Council on the Ageing Society: Policy Principles

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In recent decades, scientists have learned enough about the biological ageing processes that many believe it will become possible to slow ageing in humans.

*Miller, 2009; Rattan, 2005, 2008;  
Sierra et al., 2008.*

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# Interaction between policy-making and science

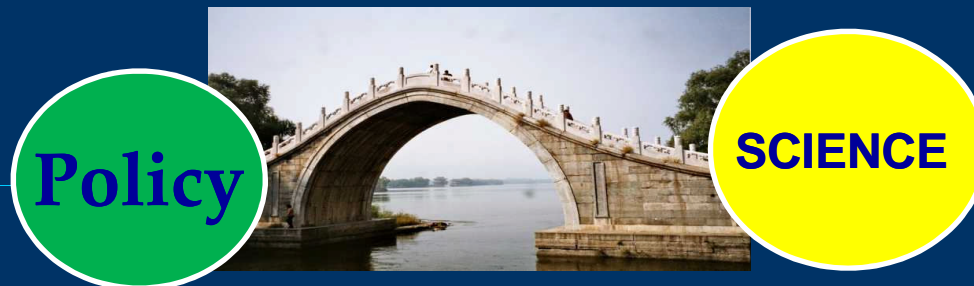
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“... Policy making should be based on the best available evidence and should include rational analysis of the evidence.

Research evidence does not always or even often enter the policy process as part of the rational consideration of policy option.

Research tends to become known through a process of advocacy.”

*Nutley (2003: 12)*



# Interaction between policy-making and science

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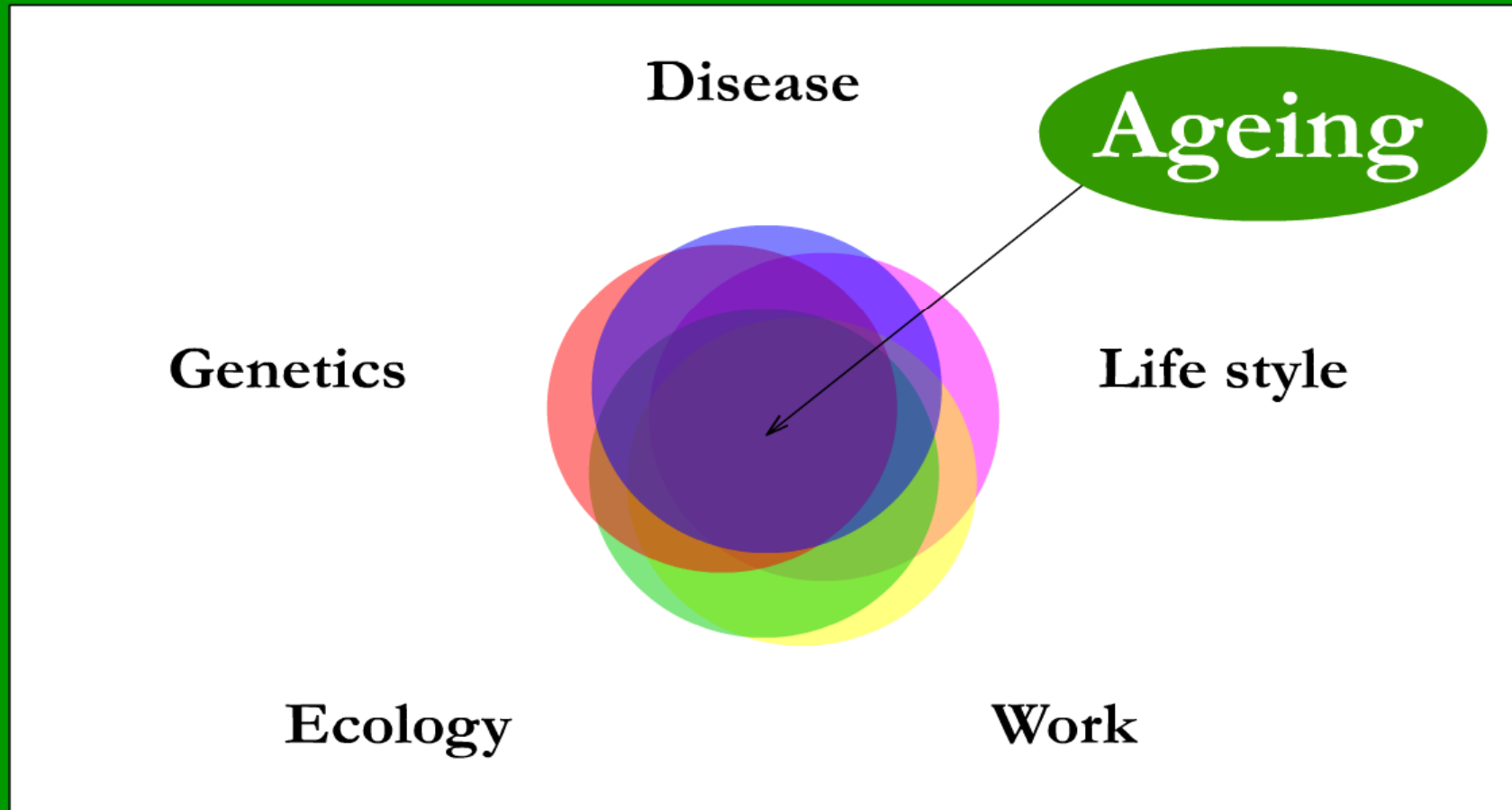
Educating the political leaders about population ageing is a critical priority for policy initiatives.

Most nations need to rethink employment, education and income maintenance policies in light of increasing demands for and by older workers for meaningful jobs.

*Olshanski, Rattan, et.al.; 2011*

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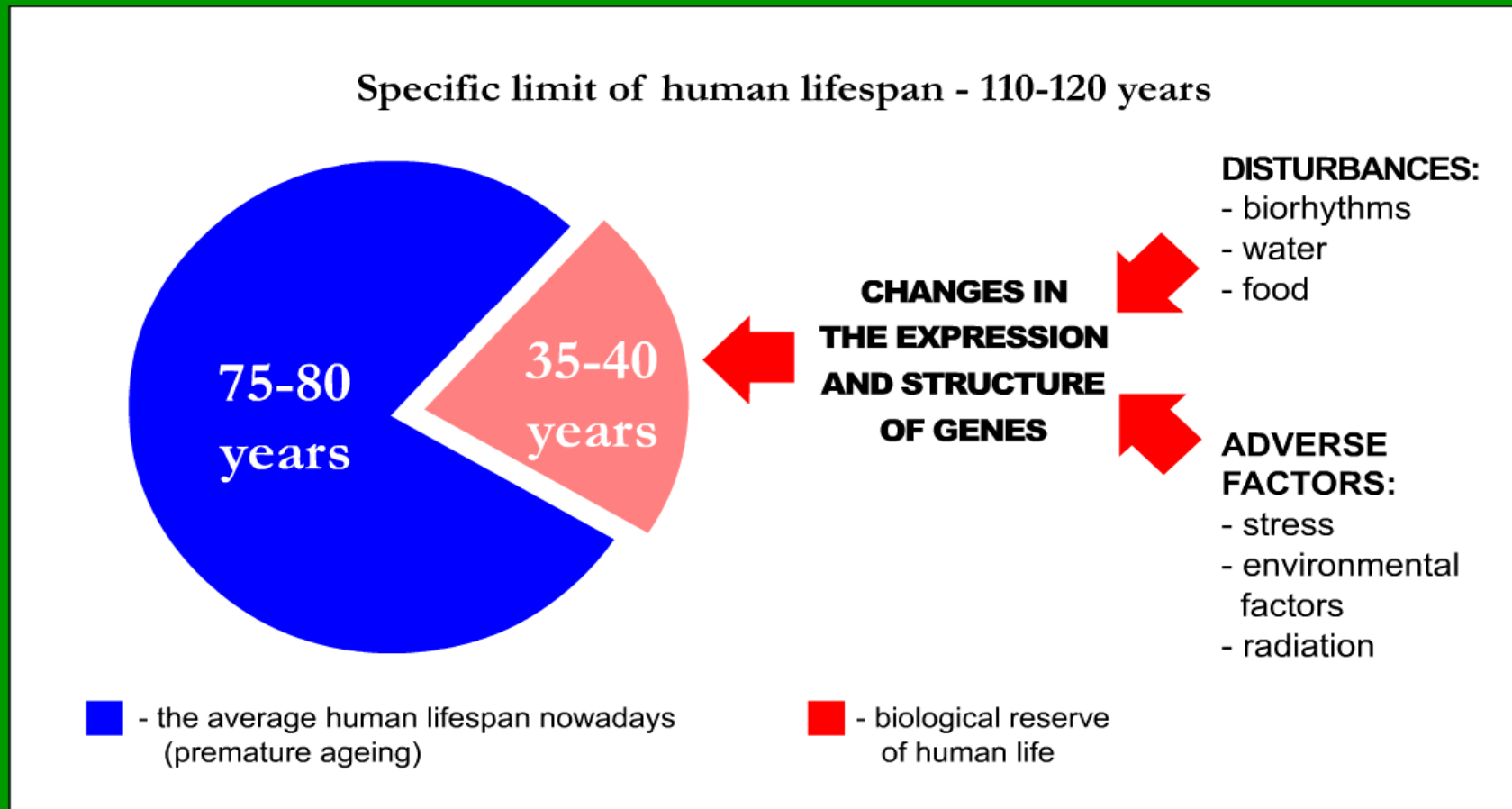
# INTERRELATION OF LIFE STYLE, DISEASE, WORK, ECOLOGY, GENETICS AND BIOLOGICAL AGEING



"Ageing and working capacity", WHO Report, Geneva, 1995



# POTENTIAL INCREASE IN THE AVERAGE HUMAN LIFESPAN UP TO THE SPECIFIC LIMIT (BIOLOGICAL RESERVE)



Khavinson V. Peptidergic regulation of ageing. 2009.





# Science-based approach to active and healthy ageing

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At present time there are 3 main ways of prolonging human lifespan and increasing its quality:

1. Calorie restriction

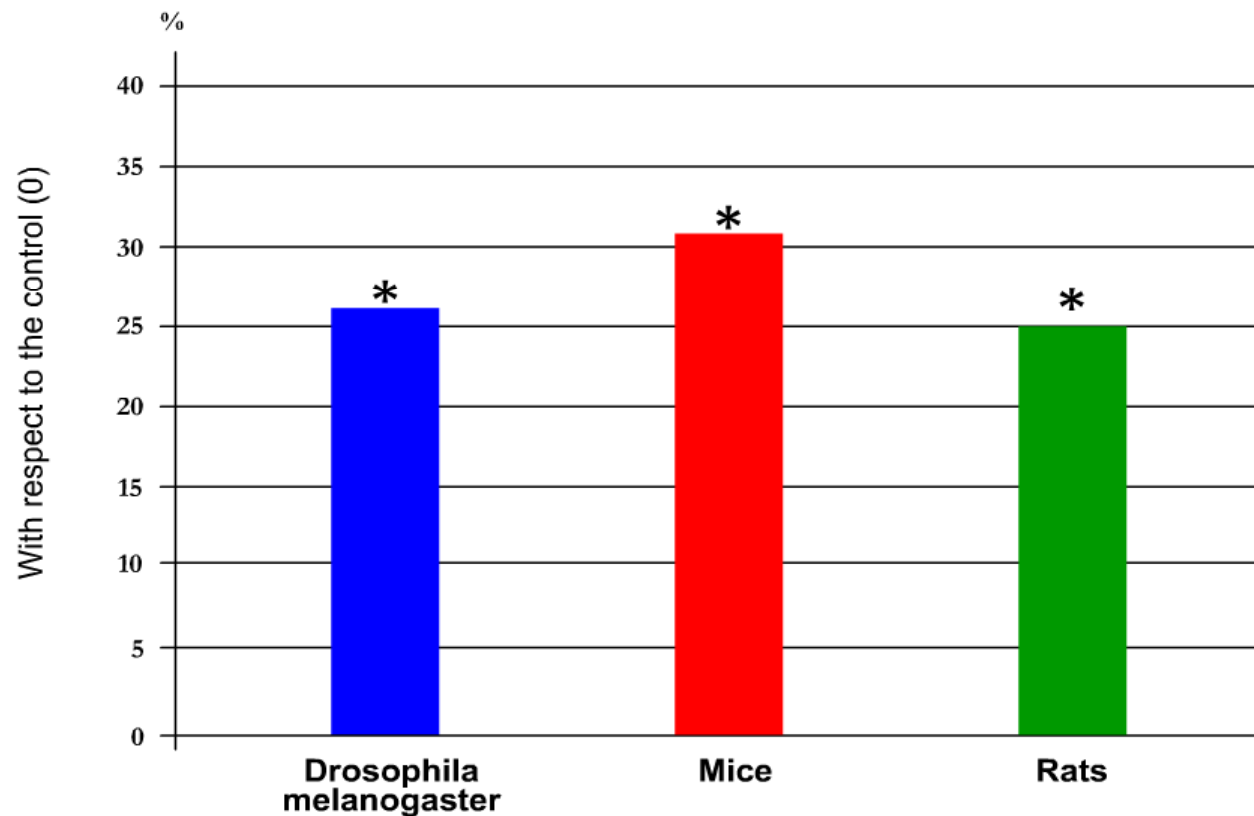
1. Geroprotectors – antioxidants

2. Geroprotectors – peptide bioregulators

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# MAXIMAL INCREASE IN THE AVERAGE LIFESPAN AFTER APPLICATION OF PEPTIDE BIOREGULATORS

Results of the 25 experiments  
(Anisimov V., Khavinson V. Biogerontology. 2010)



\* -  $p < 0.05$  as compared to the control



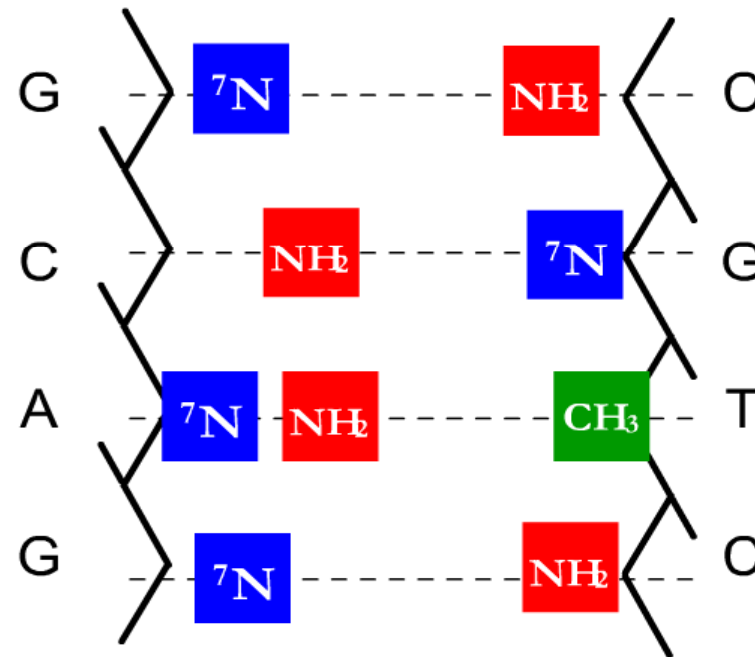
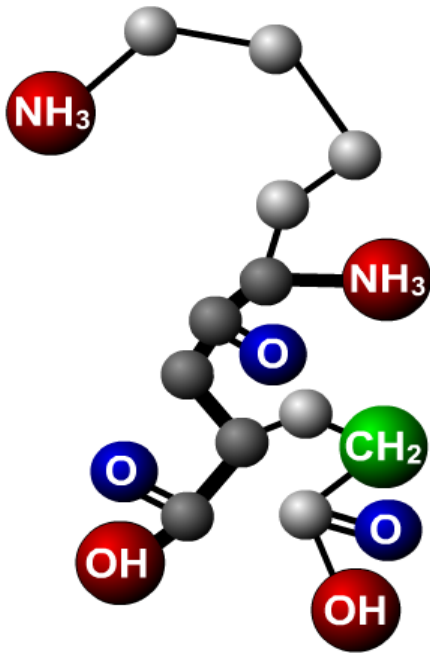
# EFFECT OF PEPTIDE BIOREGULATORS ON THE HUMAN MORTALITY RATE

Groups of patients	Parameters	Control	Epithalamin	Epithalamin + Thymalin
<b>Old (60-74 years)</b>	Baseline mean age, years	69.3±2.2 (n=48)	71.1±1.4 (n=46)	
	Mortality rate, % <i>observed for 8 years</i>	13.6	8.5*	<i>no experiment</i>
	<i>observed for 12 years</i>	44.1	22.3*	
<b>Old old (75-89 years)</b>	Baseline mean age, years	80.2±1.6 (n=22)	81.5±2.1 (n=24)	82.1±2.3 (n=24)
	Mortality rate, % <i>observed for 6 years</i>	81.8	45.8*	33.3*

\* - P<0.05 as compared to the control



# MODEL OF COMPLEMENTARY INTERACTION OF THE TETRAPEPTIDE WITH DNA DOUBLE HELIX

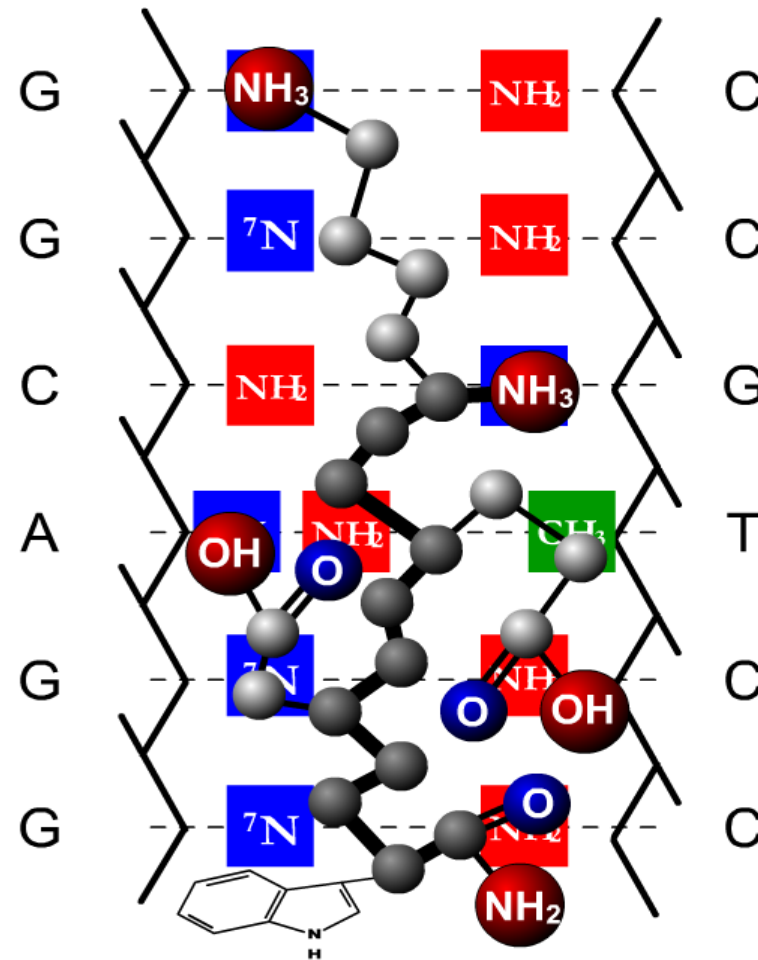


# MODEL OF COMPLEMENTARY INTERACTION OF THE TETRAPEPTIDE WITH DNA DOUBLE HELIX

## DNA-peptide complex

Interaction of proton-donor and proton-acceptor DNA groups with tetrapeptide is seen from concurrence of red and blue functional groups.

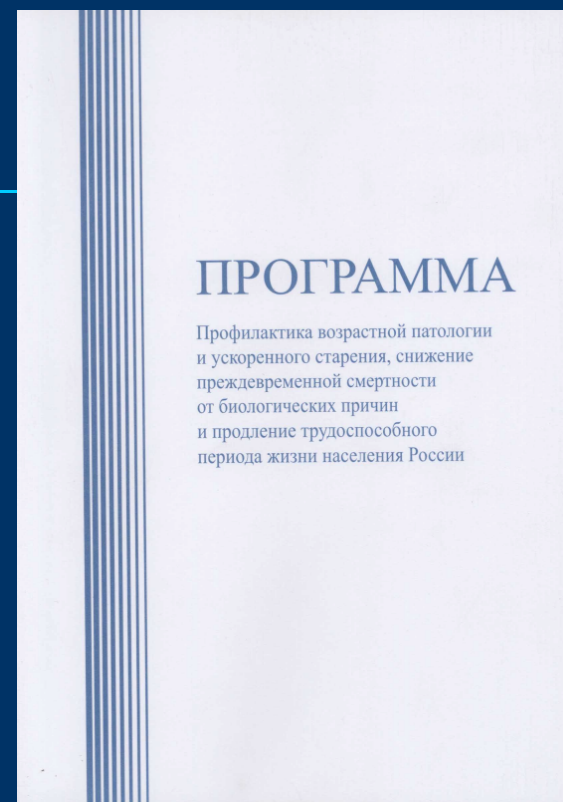
Hydrophobic interaction of alanine remainder methyl groups and thymine is marked in green.



# PROGRAMME

“Prevention of age-related Pathology and accelerated ageing, reduction of premature mortality rate due to biological factors, and expanding healthy period of life for the population of Russia”

**OBJECTIVE:** to improve health and quality of life, to extent the period of able-bodied life of elderly people, as well as to enhance the economic effectiveness of utilization of labor resources due to decreased morbidity and disability and premature death rates



# Society for all ages



– is a society "where  
*...generations invest in  
one another and share in  
the fruits of that  
investment, guided by the  
twin principles of  
reciprocity and equity"*

*A/50/114, paragraph 38*

# *THANK YOU!*



Executive Committee – IAGG European Region