

**Appendix 3**

**IRCHAL Research Domains**

# **IRCHAL**

# **Research Domains**

**“The mission of the International Research Centre for Healthy Ageing & Longevity (IRCHAL) is to promote healthy ageing & longevity through interdisciplinary collaboration amongst the world’s leading experts on the science of health, ageing and longevity, and to disseminate evidence-based knowledge throughout the nations of the developed and developing world for the betterment of humankind.”**

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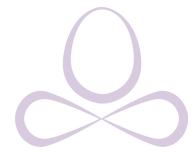
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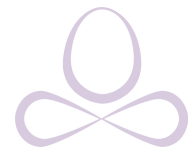
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**IRCHAL Research Domains:**

- 1. Biological Mechanisms**
- 2. Healthy Ageing**
- 3. Interventions in Ageing and Age-Associated Disease**
- 4. Care & Support**
- 5. Policies and Strategies**



# 1. BIOLOGICAL MECHANISMS

## A. FUNDAMENTALS (basic science, concepts and perspectives of ageing and longevity)

### Concepts

An improved understanding of the basic mechanisms of ageing and the determinants of longevity is fundamental to realising the full potential of healthy ageing.

At the most basic levels, ageing is a time-dependent phenomenon that is probably the result of an increasing loss in the integrity of complex biological molecules that after an individual's reproductive maturation begins to exceed the capacity for repair and maintenance.

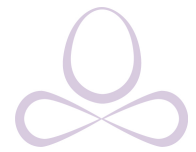
Thus, the observable phenomena of individual and population ageing can be described from many perspectives using a variety of methodologies and their related frames of reference. These differing perspectives can be explored individually, or often more usefully, in a variety of integrated approaches. Both individually and in various combinations these means of studying ageing can throw great light on the processes of human (and other species) ageing while at the same time identifying possible directions for positive interventions. Greater understanding of ageing from these various perspectives is the key to improving the quality and length of human life.

In biological terms, ageing can be described as cumulative changes in an organism, organ, tissue, or cell leading to a decrease in functional capacity. In humans and a variety of other species, ageing is associated with degenerative changes in the skin, bones, heart, blood vessels, lungs, nerves, and virtually all organs and tissues.

Biologists have advanced a variety of theories to explain ageing, but most of them are derivative of the increasing loss of molecular fidelity that gradually exceeds repair or maintenance capacity. Most biogerontologists do not believe that genes play a direct role in ageing, but that they do play an important role in determining longevity by their direct role in the production of molecules and the systems that maintain and repair them. Ageing happens without the requirement for instruction which is what genes contain. Age changes are spontaneous and occur when the well-known losses in molecular energetics exceeds repair, replacement and turnover capacity. The role of genes in determining longevity is suggested by the great range of life-spans among different animal species - from a few days in the fruit fly to more than 200 years in some species of whales.

Scientists have recently learned how to manipulate some genes in laboratory organisms such as roundworms and fruit flies to markedly increase their longevity. The fact that their longevity can be increased by manipulating environmental conditions such as temperature, food and crowding has been known for decades but the genetic basis for this is only now being investigated. These genetic manipulations do not interfere directly with the ageing of these organisms but in their longevity determinants.

At the cellular level, an important recent finding has been that the number of times a cell can divide (the Hayflick limit) is determined by the length of structures at the ends of chromosomes called telomeres. Each time a cell divides, the telomere becomes shorter and when it approaches a minimum length the senescence of the cell is triggered. Telomerase, an enzyme that can prevent



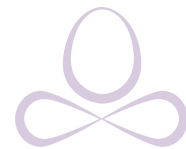
this process and permit the cell to achieve immortality, is being closely studied because cell immortality is a property of most cancer cells.

Scientists have discovered that they can significantly extend length of life in mice by providing them with very low-calorie diets (caloric restriction – CR), and recent studies of rhesus monkeys on low-calorie diets appear to be having the same results. One interpretation of this data is that these calorie restricted diets slow the ageing process by lowering the rate at which tissue-damaging substances called free radicals are produced in the body. An alternative interpretation is that CR is a better representation of what is experienced by feral (wild) animals so that CR experiments merely demonstrate that gluttony reduces what is the actual longevity in the experimental animals.

In light of the above, there is a need particularly to explore the rich interactions that take place between genetic, environmental, lifestyle, nutritional and other elements that appear to influence the ageing process or determinants of longevity in individuals.

### **Topics**

- Genetics/Genomics/Telomeres
- Evolution
- Molecular processes
- Cellular mechanisms and processes/Apoptosis
- Cell physiology/Signalling
- Comparative species study/Animal models
- Physiology
- Biomarkers
- Function
- Gender
- Life-course
- Demographics
- Social perspectives and definitions
- Epidemiology
- Psychology
- Economics
- Environmental
- Ethical
- Philosophic
- Metaphysic
- Spiritual
- Literary
- Politic
- Journalistic
- Art
- Integrated (Conciliate) perspectives



## **B. MAINTENANCE**

### **Concepts**

All organisms including humans have intrinsic mechanisms at many levels aimed at ensuring survival and the countering of negative forces over time of homeostatic loss, stochastic systems errors, functional failures, morbidity and mortality. Mechanisms of maintenance and repair of their molecules must function effectively at least until reproductive maturation or the species would soon vanish. In addition, extrinsic broader social and economic processes may be evoked. These 'natural' processes are critical to maintaining integrity of individuals, groups and societies in the face of continuous environmental pressures and change. To the extent that environmental conditions might perturb these processes, most members of a species must overcome these perturbations in order for the species to survive. Although environmental conditions are not proven to have a direct effect on age changes they may very well affect the occurrence of age-associated diseases. Greater understanding of the mechanisms involved in these processes may provide opportunities for their enhancement as a fundamental approach to ensuring improved health and longevity.

The greying of populations in developed countries where the average age of a society is increasing is an important issue in many nations around the world. The societal effects of increasing numbers of elderly people are considerable.

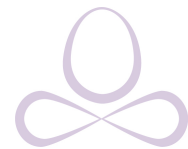
### **Topics**

- Genetic
- Molecular
- Cellular
- Evolutionary
- Life-course/Lifestyle
- Psychological
- Behavioural
- Social
- Economic
- Developmental

### **Policies and Strategies**

There are a range of key policies and strategies that should be adopted by societies everywhere that reflect a more informed and enlightened view of individual and population ageing, its nature and significance. Included in this are:

- Investment in fundamental research
- Promotion of integrated approaches to research and development
- Broad evidence based national policies and strategies on population ageing
- The promotion of the concept "Healthy Ageing Begins at Birth"<sup>TM</sup>
- Policies supporting positive and successful ageing
- Improvement in community images and knowledge of ageing and its significance
- Involvement of older persons in review and formulation of policies that have impact and significance for them



- Development of evidence based national and sub-national strategies in response to population ageing especially when this is occurring rapidly
- Improved education at all levels on ageing
- Recognition and appropriate policy responses to the prospect of an increasingly ageing workforce

## **Research Priorities**

### ***Basic Science & Mechanisms of Ageing and Longevity***

An improved understanding of the basic mechanisms of ageing and determinants of longevity is fundamental to realising the full potential of healthy ageing.

#### **Specific Topics:**

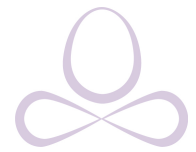
- Genetics
- Genomics
- Molecular biology
- Cell physiology
- Signalling
- Animal models
- Molecular mechanisms
- Differences between ageing, longevity determinants and age-associated diseases
- New technologies and strategies for intervening in the ageing process or the determinants of longevity
- Biomarkers of ageing

### ***Comparative & Evolutionary Biology of Ageing and Longevity***

This field of research contributes to understanding why ageing exists, recognising its universal nature, and providing theoretical and evidence based support for the expectations of the biological consequences of ageing. This, in turn, enables logical discussions to be conducted about how long humans can live and what kinds of interventions might prove efficacious, and possibly even some sense of how successful those interventions might be.

#### **Specific Topics:**

- Lessons on ageing learned from comparing species
- Animals that age rapidly
- Animals that age imperceptibly or not at all
- Evolutionary life histories and mechanisms of ageing and longevity
- Anthropology
- Unifying the many theories of ageing



## ***Broader Demographic, Social, Psychological and Economic Constructs of Ageing***

### **Specific Topics:**

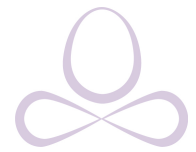
- Demographic Transition
- Population Ageing Models and Dynamics
- Socio-cultural Dimensions of Ageing
- Macro and Micro-Economics of Ageing
- Philosophical, Literary, Art and Spiritual Perspective on Ageing

## ***Philosophical, Literary, Art and Spiritual Perspective on Ageing***

Topics to be developed

### **Key Research Questions**

- What is ageing?
- Are there valid and reliable Biomarkers of Aging?
- Why do some animals age imperceptibly or not at all?
- Is ageing governed by genetic or random events?
- Is ageing a disease?
- If the human ageing process could be stopped or slowed, at what age should it be done and what would be the consequences?



## 2. HEALTHY AGEING (determinants of healthy ageing and longevity)

### Concepts

Life expectancy is increasing throughout the world. A new challenge for research is to ensure that the years added to life are healthy, active and productive and that there is significant compression of disability in later years.

The state of being healthy is increasingly accepted as extending beyond the absence of disease. The World Health Organization defines health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”.

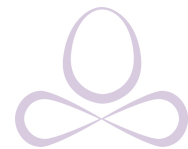
Preservation of health in people as they age (achievement of essentially ‘healthy ageing’) may be sought directly through adoption of a variety of strategies apart from risk and hazard avoidance. The promotion of positive healthy ageing as a goal is vitally important to ensure health and longevity in communities.

One of the simplest definitions of ‘healthy ageing’ is that used by the United Nations where Healthy Ageing is viewed as “a lifelong process which focuses on improving the well-being of people as they age”. It is a broad concept that embraces a number of factors such as physical and mental health, financial security, independence, community attitudes, self fulfilment, personal safety, accommodation and the physical environment.

The Commonwealth of Australia expands on this definition in its Healthy Ageing Strategy, referring to a holistic approach that involves the whole of the community and extends beyond the realm of service provision:

*On a broad level healthy ageing is an individual, community, public and private sector approach to ageing that aims to maintain and improve the physical, emotional and mental wellbeing of older people. It extends beyond the health and community services sectors as the well-being of older Australians is affected by many different factors including socio-economic status, family and broader social interactions, employment, housing, and transport. Social attitudes and perceptions of ageing can also strongly influence the wellbeing of older people, whether through direct discrimination or through negative attitudes and images.*

Thus healthy ageing is the development and maintenance of optimal physical, mental and social well-being and function in older adults for as long as possible. It is most easily encouraged when physical environments and communities are safe and support the adoption and maintenance of attitudes and behaviours known to promote health and well-being; and by the effective use of health services and community programs to prevent or minimise the impact of acute and chronic disease on function.



## Topics

- Genetic/genomic
- Biological – molecular/cellular/physiological
- Psychological
- Social
- Lifestyle – nutrition, health promoting activities
- Quality of life
- Economic
- Environmental

## Policies and Strategies

Policies and strategies that should be adopted in support of healthy ageing include:

- Promotion of the concept “Healthy ageing begins at birth”™
- National and international healthy ageing policies and strategies
- Programs of health promotion targeted to the ageing population
- Programs of education at all levels on ageing – realities and combating of stereotypes
- Recognition of older persons role and contribution to society
- Recognition of intergenerational exchanges and support
- Addressing issues on the sanctity and spirituality of life and death
- Programs to respond to health status and needs of the very old
- Recognition of changing patterns of disability and morbidity
- Preventative health actions of older people which provide core knowledge for fostering self-care and participatory care models.
- Need to include those with chronic diseases and disabilities as well as ‘healthy’ older people
- Need to address the role of health professionals in health promotion.

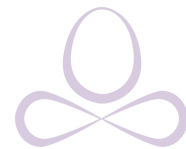
## Research Priorities

### *Determinants of Healthy Ageing*

Health is a central issue associated with increase in longevity and population ageing. The maintenance of health status and functioning with age is a critical factor impacting upon many other aspects of the lives of older persons, their families and communities.

The complex interrelations of individual behaviours, general social, economic, cultural and environmental conditions and the efficacy of preventive, curative and rehabilitative modes of intervention need to be better understood.

More research is needed into basic aspects of measuring and monitoring physical and mental functioning and age associated disabilities and potential for preventing these.



### **Specific Topics:**

- Lifestyle variants
- Psychology
- Quality of life
- Factors that promote healthy ageing and longevity learned from centenarians and longitudinal studies on ageing
- Defining and delimiting the scope of the concept
- Healthy ageing considered as individual behaviour
- Research into health related behaviours and their determinants
- Life-long development of health related behaviour that culminates in the desirable combination of exceptional health and longevity
- Studying the interactions among genetic-biological markers, the environment and health behaviour
- Developing intervention strategies for health promotion as a collective goal in different settings
- Healthy ageing as a trade-off
- Assessment of nutritional status of older persons in different settings and development of appropriate strategies “in situ” for promotion of healthy ageing.

### ***Healthy Ageing Research Priorities***

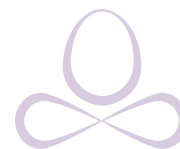
#### **Specific Topics:**

##### ***1. Well-being, independence and activity***

- Research that embraces the aspirations and views of older people as well as the social and physical context in which they live their lives.
- Research that addresses individual and population group variability in terms of:
  - Gender
  - Socioeconomic resources
  - Housing
  - Neighbourhood
- Life transitions such as retirement, changing home, giving up driving, widowhood.

##### ***Social and cultural diversity***

- Research including people living in rural and remote locations, and indigenous, culturally and linguistically diverse communities. Including people ageing with disabilities.
- Also need to be able to make comparisons about key outcomes and influences between different social groups.
- Research into health related behaviours and their determinants.
- Research on how to achieve healthy ageing as a human right.

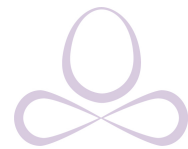


### ***Intergenerational relations and planning for ageing***

- Healthy ageing as a life-long process
- Intergenerational influences are important in forming social attitudes
- Retirement planning
- Life-long learning
- Knowledge to help dispel negative myths of ageing.

### ***Income, employment and voluntary contributions***

- Role of financial means and a sense of contribution in the quality of ageing experiences.
- Changing the perception that older people are a major financial drain on the public purse.
- How superannuation works to enable different groups of older people to support their own old age.
- Defining health impacts of changing income patterns.



### 3. INTERVENTIONS IN AGEING AND AGEING ASSOCIATED DISEASE

#### A. HAZARDS (age associated disease, decrements and disability)

##### Concepts

All organisms are at risk from both internal (failure of integrity) and external (environmental) insults likely to cause harm. Better understanding of the nature of these risks (hazards) and their extent and consequences is vital to the goal of minimising them. The study of risk factors and their avoidance is an important exercise in the development of effective preventative strategies.

Thanks to the intervention of medical technology, public health advances and healthier lifestyles, many people now in effect live on borrowed or "manufactured" time, surviving well beyond what was once considered a natural lifespan. Although historical records indicate that older people have always existed in human societies, survival beyond age 50 was relatively rare until the twentieth and twenty-first centuries. Today, 95 percent of all babies born in the developed world can expect to live past this age.

In the January-February 2005 issue of *American Scientist* magazine, three researchers contend in an article called "Confronting the Boundaries of Human Longevity" that human beings, like race cars, are not intentionally engineered to fall apart. They simply are not designed to run indefinitely after the chequered flag has fallen. In this analogy, the finish line for human beings is the successful reproduction and raising of offspring.

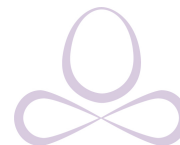
If the wear and tear of aging is the product of evolutionary neglect rather than evolutionary intent, the authors say, then there is every reason to be optimistic that the process is inherently modifiable, which has extremely important implications for our aging population.

The authors are University of Illinois at Chicago biodemographer S. Jay Olshansky and Bruce A. Carnes from the University of Oklahoma and their colleague Douglas Grahn who has been affiliated with the Center for Mechanistic Biology and Biotechnology at Argonne National Laboratory.

In their article, they tell of the quest for a universal "law of mortality" that might explain why the life-spans of species differ and why some members of the same species live longer than others. They also pose an intriguing question. If such a law does exist, can it be modified (or has it been altered already) so that people can live beyond the limit ordinarily imposed by nature?

Nobody knows with certainty what the life expectancy of human beings was even a few thousand years ago. However, reports of death tolls from infectious and parasitic diseases prior to the modern era of antibiotics, vaccines and other public health measures strongly suggest that very few people lived much beyond age 50.

Today, most people in the industrialised world expect to live well past the half-century mark. This unprecedented survival means that almost everyone either experiences or witnesses the physiological changes that go with aging, known as senescence. "Senescence on such a grand



scale," the authors write, "is a profoundly new experience for our species and probably represents a unique phenomenon in the history of life."

This has given new impetus to age-old questions about the natural limits imposed on the life-spans of most living things, including humans. The researchers say that a unique collection of mortality data at Argonne National Laboratory allowed them to search for a "law of mortality" common to all species. In doing so, they tried to meld concepts that have been developed by biologists and demographers over the better part of the last two centuries.

Using pathology diagnoses contained within the Argonne data, causes of death for a variety of mouse strains, the beagle dog and a well-studied human population were partitioned into what the researchers called intrinsic (genetically based) and extrinsic (environmentally influenced) mortality.

"Our research suggests that the evolutionary forces thought to be responsible for the senescence of individuals have left a detectable imprint on the schedule of age-specific death rates for populations," the authors write. "We call this imprint an intrinsic mortality signature and believe it to be as characteristic of a species as physical appearance."

### **Topics**

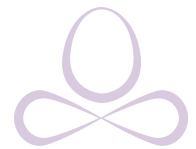
- Pathology/Morbidity
- Disability
- Mental/psychological
- Health behaviours
- Lifestyle
- Social
- Economic
- Structural (legislative, cultural, religious and traditional)

### **B. HAZARD AVOIDANCE (interventions)**

An essential means of preventing age associated decrements, decline, morbidity and death is avoidance of the known risks and hazards that can cause harm at all levels. A variety of interventions from various modalities are being developed to achieve this. The further identification and development of effective interventions is a critical public health and social challenge for science.

From conception to sexual maturity, there are biological clocks that have been moulded by natural selection to govern the tempo of growth and developmental processes. These genetically controlled events are reminders of a carefully orchestrated set of biological processes – collectively referred to as a life-history strategy – that evolved in response to environmental conditions that prevailed when the species arose. It is a genetic legacy from the past carried by every member of a species, including our own.

But what happens when conditions are created that permit most members of a species to survive well beyond their reproductive years? The researchers found that a median age at death of about 83 years for human beings was required to make the intrinsic-mortality curves of the three species overlap. This and other data led them to conclude that if a biologically based upper limit to human life expectancy exists, it may have already been surpassed.



"Our optimism that survival time will continue to be extended must be tempered by the realization that many, if not most, of the ailments that afflict people as they age have a genetic basis," the American Scientist authors warn. "The biology of senescence ensures that there are mortality hazards lurking in the older regions of the lifespan our society is now exploring."

It's possible that new or infrequently observed diseases and disorders, such as Alzheimer's disease, could appear among future cohorts of older people as "manufactured time" permits the expression of genes that would have been precluded by death in previous centuries. It may only be a matter of time, however, before medical technology takes us into the brave new world of genetic manipulation, the prospect of which causes the authors to issue a cautionary note:

"The amount of manufactured time required to achieve dramatic gains in life expectancy (above age 85) may very well require tinkering with the genetic blueprint that defines who we are as individuals and the composition of our populations – a technological advance that by its very nature precedes our ability to understand or cope with its consequences."

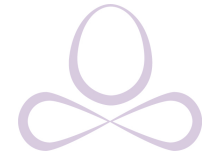
### **Topics**

- Genetic
- Molecular
- Cellular
- Physiological
- Psychological
- Behavioural
- Social
- Educational
- Environmental
- Economic
- Health promotional

### **Policies and Strategies**

A range of policies and strategies designed to respond to these issues are suggested including:

- Preventive health services
- Early detection and early treatment programs
- Preventive approach to social issues and poverty
- Age friendly legislation
- Practical evidence-based interventions to promote healthy ageing & longevity
- Caloric restriction, pharmaceuticals, hormones, exercise, healthy behaviour
- Complementary medicine
- Preventive, curative and health enhancing modalities including functional foods, nutritional supplements, herbal medicines, Naturopathy, Ayurveda, Traditional Chinese Medicine, physical therapies, exercise, yoga, meditation, etc.



## **Research Priorities**

### ***Clinical Physiology of Ageing & Translational Research***

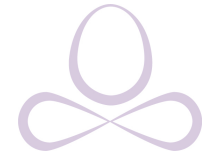
#### **Specific Topics:**

- Clinical Physiology of Ageing (musculoskeletal, endocrine, immune, lipids, etc.) and Age-Associated Disease and Dysfunctions.
- Development of valid and reliable biomarkers of ageing.
- Translational Research moving from the basic mechanisms that influence the ageing process to human therapies for age-associated illnesses.

### ***General***

#### **Specific Topics:**

- Research into the biological, social and economic determinants of disability in various settings, across the lifespan.
- Development of intervention strategies in handling disability, through modification in the condition per se, behaviour of the person and the environment.
- Research into the prevention and rehabilitation of disability in older persons and development of their capacities for optimal physical and psychological functioning.
- Increasing the quality of life of older persons in terms of optimising their social participation.
- Comparative study of intervention strategies in the prevention, management and rehabilitation of disability.



## **C. Repair and Restoration of Physical and Mental Functioning**

In the presence of age related damage it is possible to invoke a number of different level strategies to affect a return to the appearance and/or reality of reversal of negative age associated outcomes. The application of such restorative approaches will remain an important aspect of dealing with the reality of ageing in practice. The rational, ethical and scientific utilisation of the techniques and methods available will continue to make a contribution to improved well-being in an ageing and increasingly more longevous society. It is of course important to emphasise that cosmetic changes that make people look younger do not make them younger.

### **Topics**

- Cosmetic
- Medicinal
  - Complementary
  - Conventional
  - ‘Designer’ drugs
- Surgical
- Nanotechnology
- Rehabilitative

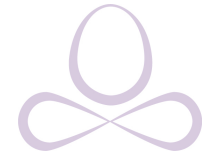
### **Policies and Strategies**

- Sustainable and effective age friendly health care services
- Policies to combat negative images & stereotypes
- Promotion of ethical, evidence-based regenerative medicine

### **Research Priorities**

Research into:

- Ethical, evidence-based regenerative medicine
- Long term effect of cosmetic and skin repair medications
- Evaluation of anti-ageing therapies
- Surgical cosmetic techniques – benefits, risks and outcomes
- Surgical restoration and replacement surgery
- Nano-technological applications and techniques



## 4. CARE & SUPPORT

### Concepts

While the achievement of healthy ageing with longevity is the desirable objective it is not always possible in an absolute sense and there will remain a need to provide for those who require continuing care and support as a consequence of ageing related disability and dependence.

Informal and formal care systems are the main means of supporting older people at all levels of functioning. Further research is needed to address the unprecedented challenges that population ageing is posing for care systems.

### Topics

- Health care models
- Education
- Consumer issues
- Ethics and standards
- Formal & informal care
- Older persons as care givers
- Healthy Ageing for care givers

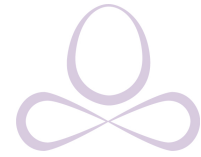
### Policies and Strategies

- National healthy ageing policies and strategies
- Age friendly primary, secondary and tertiary care
- Integrated national health and social care systems
- Community based care

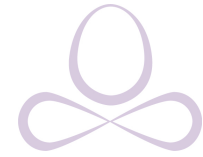
### Research Priorities

#### *General*

- Research into the development of care systems that are comprehensive and economically and culturally sustainable.
- Research into training needs and training strategies with regard to generating adequate geriatric workforce at the primary care level.
- Research into the most effective public-private mix of care delivery systems in different settings.
- Research into developing seamless transitions from hospital to community to family care.
- Research into mapping of care systems in different cultures and settings taking into account the demographic trends (e.g., rural-urban transition)

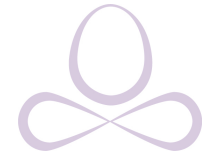


- Research into development of long term care services and integrating them into different cultural settings, keeping in view the future needs of developing countries.
- Research into integration of different care models to suit the needs in different settings.



### *Interventions in Age-Associated Diseases and Dysfunctions*

- Age-associated diseases and dysfunctions
- Basic mechanisms; prevention, early detection, treatment; drug development and evaluation
- Dementias & depression
- Practical evidence-based interventions to promote healthy ageing & longevity
- Caloric restriction, pharmaceuticals, hormones, exercise, complementary medicines.
- Complementary medicine
  - Preventive, curative and health enhancing modalities including functional foods, nutritional supplements, herbal medicines, Naturopathy, Ayurveda, Traditional Chinese Medicine, physical therapies, exercise, yoga, meditation, etc



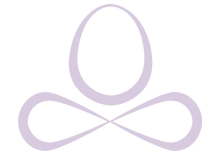
## 5. Policies & Strategies

### Concepts

At every level the various issues and domains listed above pose clear challenges for individuals, families, communities and societies that require informed and evidence based policy responses. In this sense policy action overarches all other domains. In addition there are key policy directions necessary to promote longevity and healthy ageing in all societies. Some of these considerations are in the arenas of:

### Topics and overarching policies and strategies

- Population
  - Present status and future trends
  - Population age-structures
  - World-wide disparities
  - Urbanisation
  - Migration
- Longevity & Societal Development
  - Future scenarios
  - Sustainability of existing and future income security systems
  - Sustainability of existing and future health care systems
  - Technological advances for an ageing society
- Society for all Ages
  - Environmental sustainability
  - Older persons as a resource to society
  - Promoting a culture of solidarity
  - Rights and responsibilities of older persons
  - Employment and old age
- Health & Wellbeing in Older Age
  - Education
  - Consumer issues
  - Retirement transition
  - Ethics and psychology
  - Issues on the sanctity and spirituality of life and death
- Supportive & Enabling Environment
  - Immediate social environment: family, community, friends, neighbours
  - Housing
  - Transportation



## **Policies and Strategies**

Research is needed focusing on demonstrating the impact of major forces of societal change, such as rapid political transitions, and developmental policies and programs on the economic and health status of older people. A research program is needed to document, monitor and project the effects of these processes on older people as a group in society who may have fewer resources to enable them to adjust to change, and especially to recover from adverse change, such as major natural disasters and civil unrest.

### **Specific priorities include:**

- Assessment of the level of government expenditures directed towards older persons.
- Documentation of changes in the redistribution of younger and older people in rural and urban environments.
- Analyses of the importance of development phases and programmes on the economic and health status of older persons.
- How are older persons factored into development policies and programmes?

## **Research Priorities**

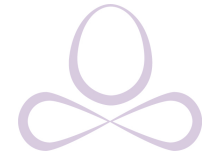
Research is needed to document and analyse these experiences, especially the current contributions of older people to both their own, their family's, and their community's economic security, and to test likely futures under different circumstances. For example, changes in health status are likely to affect economic security, and research should address the nature of the changes in health status that affect security, as well as the ways in which policy can maximise continued economic security through the continued production and consumption by the older person.

### **Specific priorities include:**

- Mapping the complexities of intergenerational transfers.
- Identification and examination of traditional and non-traditional economic consumption by older persons.
- Exploration of the possibility of alternative strategies to formal economic security structures, i.e. pensions – private and state.
- Measurement of wealth, the accumulation and disposition of wealth over the life course

## ***Quality of Life***

Years are being added to life and a major policy and research challenge is to add quality to those years. Research should ensure that older people themselves are a primary source of information.



Ideas of what constitutes ‘well-being’ and ‘good quality of life’ vis-a-vis ageing clearly vary according to the social, cultural, economic and traditional context in which it is examined. There is a need for better understanding of the fundamental variations in ageing and life experience and the determinants of quality of life in old age. Much could be learned from well-framed and sensitively undertaken comparative research in settings of various social and economic development and cultural diversity.

- Internationally agreed definitions and indicators of quality of life.
- Factors, which determine quality of life at different stages of development such as family, socio-economic security, technology and the built environment.
- Constructing a world development and ageing report on quality of life.
- Study of quality of life in advanced old age and the changing meaning of life for this group.
- Impact of life-course transitions on quality of life.

### ***Social Participation and Integration***

Older people are frequently excluded, directly and indirectly, from communities and societies. This theme focuses on the extent of participation and integration of older people and the factors that enlarge or diminish their integration in society as full citizens.

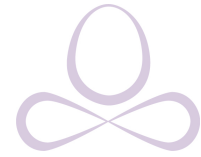
- Factors which determine social participation and integration in different societies, e.g., socio-economic, structural, and attitudinal.
- Identify successful interventions to promote integration.
- Research on participation and exclusion in rural areas, e.g., identification of good practice in involvement/empowerment of older people in community life.
- How ageism operates in different societies and the extent of convergence between older and younger people’s views of both ageing and older people.
- Investigating processes of mobilization among older people as a basis for political participation.
- Study of social, economic and cultural (dis)incentives to participate.
- Social and economic value of the contribution of older people to family and community life.

### ***Policy Process and Evaluation***

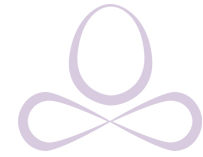
An important part of this universal agenda is to understand how the policy process recognises issues of ageing and a role for older people in formulating policy. A key issue is how far research infrastructure is available to inform the policy process.

#### **Specific priorities include:**

- Identify relevant research instruments and methods that are available and how accessible these are to all developing societies.
- Which areas of research support have been used effectively in developing societies?



- Adapting tried and tested research instruments/methods from developed countries to developing ones.
- Creating a knowledge pool of experts to give free time to support and mentor researchers in developing societies (using expert databases).
- Identify examples of good practice in involving older people in the policy process and in evaluating policy impact.
- Identifying effective models for linking research and policy.



### *Program and services research*

- Policy development requires much better knowledge on the most effective health promotion measures for older people particularly as part of mainstream efforts in health service and aged care delivery.
- Another key issue concerns understanding how housing provision and community planning and design influence ageing experiences.
- A number of pilot programs are being developed on aspects of healthy ageing and it is important to assess factors that influence their efficacy and their potential for application in different settings.

### *The baby boom cohort and social change*

- There are strong indications that experiences of ageing will change radically as the massive baby boom cohort advance through middle age into later life.
- At the same time the economic and social realities in which people grow older are changing substantially, for example, with the demands and opportunities afforded by Information Technology.
- The future also will see the emergence of new issues such as the entry to old age of people in a variety of experiences including people ageing with a disability, the long-term unemployed, ageing prisoners, and changes in household types (more living alone) etc.
- All of our research knowledge on ageing needs to be tested and where necessary re-assessed in light of changes such as the heightened expectations of older people when the baby boom cohort takes the place of those who reached adulthood during the Depression