

Successful Aging – Colin Depp, Ph.D

Dr. Seuss (from *Oh, the places you'll go!*, 1990)

You have brains in your head.

You have feet in your shoes.

You can steer yourself
any direction you choose.

When the topic of aging comes up on the news or in discussion, most often we hear about how the population is growing older by the minute. We also see examples of people living longer and healthier lives, redefining aging-related stereotypes and changing our basic concepts about older people. Biomedical research in aging has made incredible strides over the past decades in understanding why we age. However, is a relatively recent phenomenon that significant research has been directed at healthy aging, instead of focusing on the diseases and disabilities that older people experience.

At SIRA, our mission over the past two years has been to establish and encourage research on healthy or successful aging. Understanding what defines and predicts the “healthspan” is a complex undertaking, necessitating contributions from basic sciences like neurobiology and genetics in tandem with clinical and social scientists like physicians and medical anthropologists. What we have found is that it is not hard to generate interest in this topic, but it is often difficult to know where to start. Based on a considerable amount of preliminary research, consultation with world-renowned aging researchers and community members, and just plain old time in the library, we have chosen to focus on successful cognitive aging. Cognition broadly refers to the ability to process information, apply it, and develop preferences or mental “maps” based on our experiences. This definition encompasses what we commonly think of in terms of cognitive abilities, such as memory and learning, but also our self-concept, the way we respond to positive or negative emotions, and our ability to manage our day-to-day affairs. We chose to focus SIRA’s research on successful cognitive aging for three main reasons:

1) The future of aging will increasingly depend on brain health. At the turn of the 20th century, the life expectancy of the average human in the industrialized world was about 40 years, and infectious diseases were the primary cause of death. Once sanitary conditions were improved, chronic physical illnesses such as heart disease and cancer became the leading causes of our demise. Biomedical sciences have emerged to lengthen the survival of individuals with chronic physical illnesses or invent ways of preventing them. Remember that less than thirty years ago, cancer was not even considered a chronic disease! If these trends continue, a possible scenario is that neurodegenerative diseases and other brain-related illnesses, such as Alzheimer’s disease, may become the prominent causes of disability in aging. Scientists are just beginning to develop

new treatments to prevent or delay these brain-related illnesses – this means that we need to act now to figure out ways to keep our brains healthy.

2) Much of what we know about successful aging depends on the brain. Aging science's current "best bets" in terms of increasing the healthspan involve lifestyle behaviors (physical and mental activities and diet), limiting stress and depression, and positive attitudes and beliefs. In order to change any of these factors, we need to start with the brain. For instance, research has shown that starting a moderate physical exercise program may increase brain volume in older people – discovering what motivates people to start an exercise routine, and stay with it, will necessarily involve understanding the cognitive processes involved.

3) UCSD is a world-wide hub for cognitive neuroscience. An incredible number of the scientists in UCSD's neuroscientific community are foremost in their respective fields, and they represent SIRA's most unique resource. Bringing these minds together with a communal focus on successful cognitive aging can allow for the kind of interdisciplinary and innovative research that is needed, and SIRA and UCSD are well positioned to do just that.

There is clearly much to learn about successful cognitive aging, and much that can be done to encourage it. We hope that SIRA will evolve into an international hub for research on successful cognitive aging.