

The Herczeg Institute on Aging

Newsletter No. 18 – January 2019

Tel Aviv University



The Tender Caregiver by Mary Jane Q. Cross

The Herczeg Institute on Aging

Bulletin No. 18 – January 2019

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**The Herczeg
Institute on Aging**



Contact Information:

The Herczeg Institute on Aging, Tel Aviv University

P.O.B. 39040 Tel Aviv 6997801, Israel

Phone: (972) 3-6409544, Fax: (972) 3-6407339

Web site: www.herczeg.tau.ac.il

Facebook: Like us on [Facebook](#)

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Graphic design and editing:

Keren Amsterdam

Academic Editor:

Tom Aival

On the Cover:

The Tender Caregiver

By Mary Jane Q Cross



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A Letter to Our Readers



Dear Readers,

We are pleased to present Bulletin No.18 of the Herczeg Institute on Aging of Tel Aviv University. This year's bulletin offers varied contents. Along with an overview of an experts' panel on the topic "Diverging and Converging Implications of Studies of Old Age" (from the researchers' conference held at the Herczeg Institute on June 10, 2018), this bulletin also includes an editorial by Dr. Irit Bluvstein (Herczeg Institute and Department of Nursing, Tel Aviv University) entitled "Between Successful Aging and Attentive Aging: Thoughts and Questions about the Second Wave of Positive Psychology." This year's poetry section features two poems, one by Dorit Weisman and one by Tehila Hakimi.

Over the past academic year the Herczeg Institute continued its scholarly, professional, and community activity. Here we also note two events that were held this year. On January 29, 2018, a seminar was presented on the subject "Between Well-Being and Trauma: The Pendulum of the Meaning of Life," which marked the retirement of Prof. Dov Shmotkin, head of the Herczeg Institute, from the School of Psychological Sciences at Tel Aviv University. The seminar included lectures by former students of Prof. Shmotkin, who are researching different aspects of emotional and physical well-being in the face of the difficulties of life in maturity and old age. For further details, click [here](#).

Another event on March 19, 2018, marked the launching of the books (in Hebrew) *To My Mother* (author: Nitza Eyal) and *Preying on the Fleeting Abundance: An Anthology of Late-Life Poetry* (editors: Miri Varon and Amir Cohen-Shalev). The evening included lectures by the authors and a brief musical performance. For additional details, click [here](#).

This spring we are planning to renew the Herczeg Institute's lecture series for professionals in the old-age field. The series will feature up to date gerontological knowledge and provide an up-to-date and varied framework of enrichment. Details about the series will be sent to our email list.

We wish all of us a successful and engaging year of activity. As always, we will be happy to receive reactions, comments, and clarifications.

With best wishes,

The staff of the Herczeg Institute on Aging at Tel Aviv University



Between Successful Aging and Attentive Aging: Thoughts and Questions Following the Second Wave of Positive Psychology

Dr. Irit Bluvstein

Herczeg Institute and Department of Nursing, Tel Aviv University



In this article I will review a key concept in gerontology, namely, successful aging, including both its contribution and the criticism that is leveled against it. I will propose that this process of criticism, with the winds of change that are heard, parallels the theoretical changes that are also occurring in the field of positive psychology—a field that is linked to the concept of successful aging. Finally, I will propose a new concept—namely, attentive aging—that may provide a response to the criticism and complement and promote important aspects in the study of aging.

The positive-psychology field began to develop at the end of the 2000s. As Prof. Martin Seligman and other researchers claimed, positive psychology arose as a reaction to the extensive occupation with pathology and distress and relatively limited occupation with positive aspects of life (Csikszentmihalyi & Seligman, 2000). Of course, positive aspects considered positive such as well-being, satisfaction, and meaning in life were dealt before the 2000s. . However, the launching and institutionalization of the field of positive psychology encouraged many researchers to engage in it, and today it is a developed and established field of research that has its own study programs for advanced academic degrees, international conferences, and periodicals.

What, then, is positive psychology, and what changes are occurring in this field today? Positive psychology is commonly defined as the scientific study of what makes life worth living (Peterson, 2008). More specifically, positive psychology studies the conditions and processes that promote the flourishing or optimal functioning of individuals, groups, and organizations. At the individual level this includes, for example, experiencing hope, gratitude, and traits of resilience; on the social level it includes, for example, promoting the emotional well-being of workers in an organization and cultivating commitment and leadership in communities. Over the years, alongside the development and empirical testing of theories, criticism has also begun to emerge, claiming that: (a) the focus on positive aspects has led to the neglect of other aspects of life, and thus has fostered a simplistic and partial representation of the human experience; and (b) the dichotomous division into positive and negative is indeed convenient, but problematic. Positive aspects are processes or traits that are

commonly assumed as promoting emotional well-being. However, research shows that psychological processes and traits can promote or threaten emotional well-being depending on different circumstances (see, for example, Ivtzan & Thomas, 2016). Hence it can be asserted that there are no traits that, by nature (inherently), are positive or negative, and there is no reason to label processes and situations as such. It seems that the classification into positive and negative, more than it reflects the nature of the traits, reflects the basic human need for labeling things as “good” and “bad.”

These criticisms have brought about a change in how positive psychology is regarded today. The leaders of the change, who are prominent researchers in the field (for example, Wong, 2011; Ivtzan, Lomas, Hefferon, & Worth, 2015), maintain that positive psychology must be more balanced and represent the different aspects of life. The human experience must be understood as composed of ups, downs, and of parallel (and sometimes independent) processes of well-being and distress. That is, suffering and pain can be experienced simultaneously with feelings of satisfaction and contentment. Hence, positive psychology has to include the complex existence of diverse feelings. For example, there is evidence that in a situation of contending with a difficult disease, accompanied by feelings of sadness and loss, people may also experience greater personal strength and meaning in life. This change in the positive psychology field is called the second wave of positive psychology, and it appears that it is only in its first stage.

And what about aging? On billboards that advertise products and services, it is rare to see an elderly promotional model. In a case that an elderly does appear, he/she are usually smiling, joyful, healthy well-dressed and surrounded by other joyful people. Seemingly, when the notion “The world belongs to the young” is not suitable to use, it is replaced with “The world belongs to the successful.” These advertisements indicate that the successful elderly person is viewed as one who is healthy, satisfied with his life, well-off economically, and who enjoys human company. In 1987 the prestigious journal *Science* published an article by Rowe and Khan that presented a distinction between ordinary aging and successful aging. This article exerted—and still exerts—considerable influence on the development of aging research. In the view of Rowe and Khan, successful aging is a state of lack of disease or disability, high cognitive and physical functioning, and active involvement in life. If so, the billboards’ depiction of the successful elderly fits to a great extent to the conceptualization in the research literature. In the next three decades different terms were added to describe positive aspects of aging, partially overlapping with the term “successful aging.” Mainly, active aging, healthy aging, positive aging, optimal aging, effective aging, and productive aging.

Before I cite the criticisms of the concept of successful aging and its implications, it should be emphasized that in some regards “successful aging” is indeed a successful term. First, it was coined in response to a widespread approach and a narrative in the social and scientific community, which posited that aging is primarily a decline in functioning. In this context, successful aging was presented as an anti-ageist concept because it stressed positive aspects of old age (good health and high functioning). Just as positive psychology was to a large extent a reaction to the focus on pathology, the successful-aging approach highlighted the possibility of aging positively. Second, the new approach emphasized the aging person’s ability to choose a lifestyle that could promote his successful aging, and hence also emphasized that aging can be an active process in which the aging person exercises choice and control of his fate. This view has been applied extensively in the health promotion and education—which mainly seeks to disseminate knowledge about a lifestyle that fosters successful aging, thereby encouraging health literacy and healthy behavior. Finally, this approach has become a central and very productive research paradigm in the gerontology field, significantly advancing the understanding of the field. And if so, in what sense “successful aging” is less successful?

Even though the term “successful aging” was meant to counteract the ageist approach to aging, in fact it contributed to it. A definition of successful aging as entailing a lack of disease or disability, as well as high physical, psychological, and social functioning, encourages ageism because it does not include the changes that occur in aging and does not view old age as a period of life that is different and has a meaning of its own. The essence of ageism is a lack of appreciation for the changes that occur in old age. These changes, according to the concept definition, indicate aging that is not successful. Moreover, because from this standpoint the person is largely responsible, through his lifestyle, for his aging process, hence, disease, disability, and functional decline may well be perceived as a personal failure of the aging person. In this case the signs of aging become a source of pressure and of feelings of guilt, shame, and embarrassment. For example, in a qualitative study of elderly people’s attitude toward their aging in light of the successful-aging approach, a complaint was voiced about the need to demonstrate proper functioning even at an advanced age. As one participant in the study put it, “... how long do we have to keep trying to keep everything up? ... When can we just say okay, next phase? ...I don’t know how old you have to be now in the world that we live in when you can just let it all go to hell and feel okay about that. ...So...sometimes I do sit back and say, you know, would you just leave me alone? Can’t I just deteriorate at my own pace here?” (Calasanti, 2015). This criticism has been expressed in a number of publications, including the prominent, recently published book *Successful Aging as a Contemporary Obsession: Global Perspectives* (Lamb, Robbins-Ruszkowski, Corwin, Calasanti & King).

Another criticism concerns the dichotomous approach of classifying aging as successful or unsuccessful. Just as in the positive-psychology field, it is now understood that the classification of feelings, situations, and events into positive or negative depends on the context and cannot be defined in isolation from it. So too, when considering the aging process, account must be taken of its complexity and its different aspects. Here a number of questions arise: Is it only the healthy elderly person who can be described as aging successfully? Is it possible that the elderly person who is not healthy could have, alongside the physical limitations, feelings of emotional well-being? In the framework of successful aging, what is the role of effective coping or adjusting to functional decline? Here we come to a further criticism that concerns the issue of measurement in the field. The term “successful aging” implies an aging process; however, despite the many indices of successful aging that now exist, to the best of my knowledge, only one index (in line with Baltes and Baltes’s SOC theory of choice, optimization, and compensation) directly assesses the changes that occur in the aging process. The rest of the indices, even if they use theoretical definitions that emphasize adjustment processes, relate operationally to aging as a result or a situation, and not as a process.

There are additional criticisms that are not in the scientific domain but are significant. Here I will briefly mention two of them. One has to do with paternalism—that is, an a priori normative assumptions of researchers and policymakers, concerning what constitutes successful aging, that do not necessarily accord with the values and worldview of the aging person. For example, it is commonly assumed that to be involved in life, entails continuing the aging person’s work, even if it is performed voluntarily and without payment. An additional criticism maintains that the ample research on successful aging may not be free of political-economic interests. As the proportion of the aging population in the Western world increases, so do the financial resources that are directed to this sector. It may be that transferring the personal responsibility for proper health and functioning to the aging person himself serves a goal of reducing economic assistance to the elderly population. For instance, the U.S. government’s extensive funding of research on the issue could stem, at least in part, from economic motives.

These criticisms led to attempts to alter and adapt the definition of successful aging (Rowe & Kahn, 2015; Young, Frick, and Phelan, 2009), and today, the position that not every situation of disease or limitation should be regarded as failure has won greater acceptance (Molton & Yorkston, 2017). More emphasis is placed on coping with changes during old age. My claim here, then, is that the precondition for coping and adjusting to changes is, first and foremost, attention to the changes that are occurring. Thus the concept of “attentive aging” is proposed as an alternative or complement to

the term "successful aging", with emphasis on the awareness to changes as essential for coping with them.

Attentive aging is a process that entails an ongoing screening and alertness to physical and psychological changes in the old age and to threats to personal health. This alertness is required in order to employ active strategies of coping, survival, and growth. The foundations of this term lie in the theoretical context of "seeking happiness in the face of adversity" (Shmotkin, 2005), which emphasizes the sense of a threat, real or perceived, to the person's physical and emotional integrity. Attentive aging is also linked to the therapeutic application of mindfulness to special populations, including elderly people. Attentive aging involves three main aspects: cognitive, emotional, and behavioral. The cognitive aspect concerns the ability to identify significant changes in the person's life (physical and psychological state, risks, life conditions); the emotional aspect concerns the ability to regulate emotions that arise in situations of change (for example, fear of changes, loneliness after loss); and the behavioral aspect concerns the ability to engage in behavior of adaptation or internalization in order to cope with changes (mode of coping with change). Thus, to a large extent, the proposed term responds to the criticisms that were reviewed here. It takes into account psychological aspects of aging and the subjective assessment of the aging person in a way that broadens the paradigm of successful aging and avoids paternalism. Likewise, the concept of attentive aging entails awareness of the human reality that includes changes during aging, but it avoids the labeling of changes as positive or negative because the focus is on the process of identifying, characterizing, and coping with the changes (and less on the state of health in itself). In general, this term conceptualizes aging not as a dichotomous situation of success versus failure but as an ongoing process in which there are changes alongside stability, and in which attention to the process is the condition for coping and adjustment.

Attentive aging entails an invitation to an accurate and appreciative reflection on the signs of age, the voice of the aging person, and the insights that may arise while being mindful to the paths of change.

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Diverging and Converging Implications of Studies of Old Age

An overview of the conference for excelling doctoral students at the Herczeg Institute on Aging



Herczeg Institute awarded its annual scholarships to outstanding doctoral students in old-age studies at a conference held on Tel Aviv University on June 10, 2018.

In alphabetical order, the participants were: Ms. Shoshik Amram, Prof. Karen Avraham, Dr. Irit Bluvstein, Ms. Mor Bordeynik-Cohen, Mr. Tamir Eisenstein, Prof. Dan Frenkel, Prof. Hava Golander, Dr. Yulia Lerner, Dr. Issac Sasson, Prof. Dov Shmotkin, and Dr. Ilia Stembler.

Prof. Dov Shmotkin (School of Psychological Sciences and Head of the Herczeg Institute), who moderated the discussion, asked how researchers of aging and old age can be brought together from completely different scientific fields, when each discipline has its own contents and methods, as also manifested in this conference. Does old age have aspects that converge with the various studies of old age? It appears that this field has something to say on the intellectual and also on the human level, and it certainly has social and emotional facets as well. Thus it is also worth asking what it means to study aging for a young researcher. Aging does not suddenly befall us: all of us have a grandfather and a grandmother, as well as parents who age. And perhaps we also observe our own aging in ourselves?

Prof. Hava Golander (Department of Nursing and Herczeg Institute) noted that the doctoral dissertation is usually the research that receives the greatest investment of time and effort in the person's academic career. It is research that instills an approach and values in the researcher. The study and research of old age requires an interdisciplinary approach because aging is a universal process that is manifested individually, and shaped both collectively and personally. Prof. Golander pointed out that it is difficult to utilize the wide spectrum of findings from old-age studies for therapeutic work, since this requires many stages of integration by a multiprofessional and multicultural team. At the same time, it is encouraging to see the efforts being made in this direction. The more information we amass, she asserted, the higher the level of generalization will be. Hence, regarding old-age issues, it is also very important to develop collaboration between the clinical field and the research field.

Ms. Mor Bordeynik-Cohen (doctoral student in the Faculty of Medicine, recipient of a Herczeg scholarship) remarked that as a future doctor, she deals with the aging of the population and with old age. In a personal manner, stemming in part from her relationship with her parents, she views old age as a very important issue. It is also the longest period among the stages of life. It is important to be aware of the great variety that prevails among the phenomena of old age, and she certainly expects that different approaches will be taken by, for example, those who research the aging of hearing and those who investigate other cerebral phenomena.

Ms. Shoshik Amram (doctoral student in the Faculty of Life Sciences, recipient of a Herczeg scholarship) noted that her research does not deal with the cultural and psychological aspects of old age, but the biology of aging is fascinating and of great importance. The idea that it is possible to remedy diseases and age-dependent problems with biological treatment is very exciting. She came to her research field after witnessing many old-age diseases in her family and after many years of volunteering for Magen David Adom.

Mr. Tamir Eisenstein (doctoral student in the Faculty of Medicine and the Institute for the Study of Brain Adjustment and Functions, Sourasky Medical Center, Tel Aviv University; recipient of a Herczeg scholarship) observed that old age is always problematic because it is always present. On the one hand, we are always exposed to it; on the other, we do not know what exactly happens with the elderly person. This is not, he pointed out, a population that makes noise about itself. “I combine laboratory and field research, and that is the advantage of my research. Thanks to the fieldwork I experience people very intensively, and a sort of dialogue and relationship develops that may not have developed even with family members, but only with someone who is not dependent.”

Prof. Karen Avraham (vice dean of the Faculty of Medicine; Department of Human Molecular Genetics and Biochemistry), who is the thesis adviser for Ms. Mor Bordeynik-Cohen, spoke about the effect of the aging process and old age on the audial system. The loss of hearing in the course of aging, she asserted, is a severe problem that is not sufficiently addressed. Hearing loss can begin already at the age of 60, and it seriously isolates those who suffer from it and may even lead to depression. Alongside the personal domain, hearing loss causes great difficulty in filtering out noises in public places. It is relatively simple to investigate the effect of a mutation in one gene on hearing loss in old age within a limited number of families, but when one looks into the effects of several genes and at the environmental effects as well, it is much more complicated and requires a much larger number of subjects.

Dr. Yulia Lerner (Faculty of Medicine and Institute for the Study of Brain Adjustment and Functions, Sourasky Medical Center, Tel Aviv University), who is the thesis adviser for Mr. Tamir Eisenstein, noted that the idea of physical activity for elderly people is a wonderful one, but the research on it is complex and suffers from some technical problems, such as the seclusion of people and the difficulty of isolating the influencing factors. For example, it may be that what causes an improvement after physical activity is the encounter between the researcher and the subject, not necessarily the physical activity itself.

Dr. Itzik Sasson (Department of Sociology and Anthropology) brought a somewhat different perspective to the subject. He pointed to the fact that life expectancy has greatly increased, particularly in the last century, and thus intergenerational connections are a modern phenomenon. This changes our expectations about reaching a very old age, and it is without precedent in human history. It greatly affects family ties; for example, it strengthens the relationship between grandchildren and grandparents. Dr. Sasson sees much potential in collaboration between different fields of old-age research. For example, he comes from the field of demography but recently has published research on Alzheimer's disease that shows a link between education and healthy aging.

Dr. Irit Bluvstein (Department of Nursing and Herczeg Institute) remarked that, in her opinion, the innovative voices in the old-age field from a conceptual standpoint are those of the anthropologists because they are able to adopt a macro perspective, something the psychologist cannot always do. She anticipates that the studies that will come from other cultures will enrich our view of aging.

Discussion Article

Targeting the Brain through the Legs: Aerobic Exercise as a Behavioral Model for Promoting Brain Plasticity and Preventing Neurocognitive Decline in Older Adults

Mr. Tamir Eisenstein, PhD Candidate

Faculty of Medicine and the Institute for the Study of Brain Adjustment and Functions

Sourasky Medical Center, Tel Aviv University



The remarkable rise in life expectancy in Western civilization stands out as one of the most important health-related scientific accomplishments of the 20th century. As a result, the older age group (>65) is predicted to account for about 20-25% of the general population by the year 2050. However, the older age group is also the most susceptible to cognitive decline and neurodegenerative diseases. As a result, the global prevalence of Alzheimer's disease, the most common etiology of dementia among older adults, is predicted to triple during the aforementioned period. Increased life expectancy has brought with it some of the most significant challenges of modern society. This article seeks to uncover whether exercise can actively modify key biomarkers of aging, such as cognitive deterioration.

The aging process is characterized by neurobiological changes that manifest throughout the brain's different molecular, cellular, and neural networks. Higher order cognitive abilities become more sensitive as the body ages. These higher order control processes supervise and regulate cognitive, affective, and social goal-directed behaviors. Higher order and executive functions include cognitive skills such as inhibition, abstract thinking, cognitive flexibility, and working memory, which play key roles in our ability to cope with novel information and situations. This, in turn, helps us think logically, reason and solve problems. A certain level of compromised cognitive abilities is usually associated with aging. Most commonly, individual variance is present. Some individuals demonstrate similar or even higher cognitive performance compared to younger groups. Notably, cognitive deterioration is emerging as one of the greatest health threats of the 21st century. However, is cognitive deterioration inevitable? Can one's genetics and/or environment play a key role in modifying key biomarkers of aging?

In the earlier days of human life physical fitness constituted a vital prerequisite for survival in the world. Today, society is more sedentary, overfed, and emotionally stressed. Physical activity is known as the "the real polypill", for its many health benefits among healthy individuals and clinical patients with a variety of pathological conditions. Aerobic (cardiorespiratory) fitness levels are directly associated with

mortality risk. Cardiorespiratory fitness and aerobic exercise (such as running, walking or cycling) are directly correlated with fundamental physiological and health-related advantages. Could this then imply that increased exercise may they be associated with preserved or improved neurocognitive function among older adults, and even a lower risk of Alzheimer's disease and dementia?

A longitudinal study which followed about 1200 participants over two decades found that a physically active lifestyle in mid-life was associated with a significantly reduced risk of Alzheimer's disease and all-cause dementia at old age by 50-60%. Interestingly, this number was maintained even after the researchers accounted for factors that could have mediated the effect of exercise, including changes in blood pressure, cholesterol levels, diabetes, and cardiovascular disease. This study suggests that physical exercise may, in fact, have a direct and independent effect on the human brain. Moreover, studies that examined the effect of aerobic exercise intervention programs demonstrated positive relationship with improved cognitive performance. Interestingly, cognitive functions were found as the most "exercise-sensitive" executive functions, which as discussed earlier, also tend to be the most compromised with age.

The scientific community seems to agree with the hypothesis that aerobic exercise has the potential to modify key biomarkers of aging. However, the brain's mechanisms of aging, which mediate its effects, are not fully understood and are still a matter of investigation. Therefore, any claims cannot be misconstrued as conclusive on the matter. It appears as though aerobic exercise has a multi-dimensional effect on the brain, ranging from the biological level to the psychological one.

On the biological level, molecular and cellular adaptations manifest among individual neural cells (neurons and glial), and their proximal environment. This includes morphological and functional changes at the levels of individual cell, inter-cell connections (synapses) and local vasculature. However, the main limitation in examining the biological mechanism is our inability to noninvasively investigate these resolutions in the human brain. Thus, the knowledge we possess regarding the exercise-induced microscopic brain adaptations is primarily a result of animal models research (usually rodents). Still, these studies provide us with fascinating insights into a variety of neurochemical, neurobiological, and neurophysiological alterations due to exercise. For example, it has been found that aerobic exercise improves learning and memory in animals through increased genetic expression of growth factors which play key roles in the brain both during and after the exercise. These proteins, including BDNF, IGF-1, and VEGF, mediate neurobiological processes at the level of the cells, the synapses, and the vasculature, which are vital to the brain's ability to promote desired adaptations during the lifespan in response to biological, psychological, behavioral, and environmental stimuli (i.e. brain plasticity). The most focused brain region in which pronounced exercise-induced effects have been demonstrated in animal studies is the hippocampus. This area plays a key role in our ability to learn and remember novel information,

spatial memory, and navigation. In addition, changes in hippocampal morphology and function are common during aging, and may underlie cognitive consequences in later stages of life. The neurobiological changes, which are mediated by certain growth factors, and were observed following exercise intervention in animals, were increased strengthening of existing synapses, as well formation of new synapses – processes that are currently considered as the neural basis of learning and memory. Furthermore, one of the most interesting phenomena consistently observed in the hippocampus of aerobic exercising rodents is enhanced neurogenesis, i.e. the formation of new neurons from neural stem cells. Although the functional significance of neurogenesis is still being investigated, evidence suggest that some of these newly born neurons do integrate into the functional cellular construct of the hippocampus, and thus, may contribute to the observed cognitive improvement.

Despite their limitations, these studies are of particular importance in our understanding of the brain's neurobiological adaptations as a result of aerobic exercise, providing us with molecular and cellular mechanisms with the potential to mediate the cognitive effects observed in the human brain. In addition to these microscale mechanisms, current advances in the field of neuroimaging enable us to noninvasively gain insights into more macroscopic and systemic characteristics in the human brain, including the structure and function of brain regions, neural networks and cerebrovascular parameters. Although human findings have been less consistent compared to animal data from several potential reasons, there is evidence to prove that aerobic training programs as well as cardiorespiratory fitness may be associated with increased hippocampal volume during memory task. This is notable because there is a general trend of hippocampal volume decline observed during aging. In addition, there is evidence of increased hippocampal blood flow following aerobic training. These findings are especially interesting as the formation of new blood vessels and increased blood flow have been observed as parallel and necessary processes to neurogenesis in the rodent hippocampus. Even though we cannot directly assess this in the living human brain, these findings are still relevant for the human model in clinical practice and research design.

The prefrontal cortex also plays a key role in executive functions. Different characteristics of this broad brain region, such as the volume and structural integrity of the grey and white matter, have been positively associated with physically active lifestyle and aerobic fitness. Furthermore, both cardiorespiratory fitness and aerobic exercise interventions have been associated with prefrontal cortex activation during executive function tasks and the function of neural networks associated with these cognitive functions, respectively.

Aging is a diverse brain process. Not only is the biology of the brain impacted by aging but also the psychology of the brain. Neurocognitive function is affected by aging and therefore exercise may be able to mediate its negative effects. It has been proven that physical exercise improves sleep quality and

decreases anxiety and depressive symptoms. Furthermore, other potential psychological constructs such as self-efficacy, motivation and mental fatigue may also partially underlie the relationship between exercise and the brain however these associations have not yet been sufficiently studied.

In summary, while the relationship between aerobic exercise and the neurocognitive state of the human brain is being investigated over its diverse aspects, we still have a long way ahead of us in order to deeply understand the variety of neurobiological processes mediating this association, and also the optimal exercise characteristics for maximizing these effects. Nevertheless, it appears that aerobic exercise and its physiological underpinnings may have multi-dimensional effects on the brain throughout one's life and especially in the brains of older adults. Encouragingly, these effects manifest more consistently in brain regions which mediate cognitive functions that are more prone to be compromised in older age, such as the prefrontal cortex and the hippocampus. Thus, aerobic exercise is an available low-cost potential strategy for potentially preventing neurocognitive decline and promoting brain plasticity among older adults. Finally it is important to point out that although this article focused on aerobic activity, increasing evidence also suggest other exercise modalities such as dancing, resistance training, yoga, and tai-chi to have potential beneficial effects on brain health and cognitive function in older individuals.

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My Grandmother / Dorit Weisman

My grandmother
sits in the kitchen by the corner of the table
grumbling in Hungarian,
a language I refused to learn

Because she and my mother and my aunt
talked all the time about food
and meals
what will we make for lunch
what will we make for dinner

Today I admit:
I was wrong on both counts—
the food
language too
and about my grandmother
I do not know.

Translation from Hebrew to English: Joanna Chen.
From the book *Scrambled Eggs in Jerusalem* (2017). Jerusalem: Cohel Publishing House. (Hebrew).

Dorit Weisman (b. 1950) is an Israeli poet, translator, writer, editor, and movie director. She has won, among others, the Levi Eshkol Prime Minister's Prize for Hebrew Writers (2003) and the Yehuda Amichai Prize for Poetry (2003).

My Mother / Tehila Hakimi

Atop the mule and waves of the sea, my mother, carried, wrapped at her mother hands
To the rain less shores of the Negev.

And my grandfather's white beard

is the memory of snow, at the peaks of the Atlas Mountains that I never saw.

Translated from Hebrew to English by the author.

From the book *We'll Work Tomorrow* (2014). Tel Aviv: Tangier Books. (Hebrew).

Tehila Hakimi (b. 1982) writes poetry, fiction and graphic novels. She has won, among others, the 2014 Israeli Ministry of Culture Prize for Emerging Poets, and the 2015 Bernstein Prize for Literature. She works as a mechanical engineer.

The Tender Caregiver

By Mary Jane Q Cross



The painter Mary Jane Q Cross: "The picture portrays my mother and my sister. In the course of life the identity of the caregiver can change at any moment."

The picture was painted in March 2011, when the mother was 91 years old and her daughter 61.

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List of Recent Publications by The Herczeg Institute's researchers

2017

- Barel-Shoshani, Z. A., & **Kreitler, S.** (2017). Changes in self-perception following breast cancer as expressed in self-figure drawings: Present-past. *The Arts in Psychotherapy*, 55, 136-145. doi: 10.1016/j.aip.2017.05.001
- Ben-Harush, A., Shiovitz-Ezra, S., Doron, I., Alon, S., Leibovitz, A., **Golander, H.**, ... & Ayalon, L. (2017). Ageism among physicians, nurses, and social workers: Findings from a qualitative study. *European Journal of Ageing*, 14(1), 39-48 .doi: 10.1007/s10433-016-0389-9
- Berenbaum, R., Tziraki, C., & **Cohen-Mansfield, J.** (2017). The right to mourn in dementia: To tell or not to tell when someone dies in dementia day care. *Death Studies*, 41(6), 353-359 .doi: 10.1080/07481187.2017.1284953
- Bodas, M., Siman-Tov, M., **Kreitler, S.**, & Peleg, K. (2017). Patterns of victimization in the perception of threat and preparedness of the Israeli public to armed conflicts. *Prehospital and Disaster Medicine*, 32(S1), S184-S184. doi: 10.1017/S1049023X17004885
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- Casakin, H., & **Kreitler, S.** (2017). Meaning profiles of dwellings, pathways, and metaphors in design: implications for education. *European Journal of Engineering Education*, 42(6), 962-973. doi: 10.1080/03043797.2016.1236073
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- Cohen-Mansfield, J., & Regev, I.** (2018). Retirement preparation programs: An examination of retirement perceptions, self-mastery, and well-being. *Research on Social Work Practice*, 28(4), 428-437. doi: doi.org/10.1177%2F1049731516645194
- Cohen-Mansfield, J., Skornick-Bouchbinder, M., & Brill, S.** (2018). Trajectories of end of life: a systematic review. *The Journals of Gerontology: Series B*, 73(4), 564-572. doi:10.1093/geronb/gbx093
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- Shenkman, G., **Ifrah, K., & Shmotkin, D.** (2018). Meaning in life among middle-aged and older gay and heterosexual fathers. *Journal of Family Issues*, 39(7), 2155 – 2173. doi: 10.1177%2F0192513X17741922

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(*) Names of the faculty members of the Herczeg Institute on Aging are bolded

About Herczeg Institute on Aging

The Herczeg Institute on Aging was established in 1992 at Tel Aviv University.

The Institute fosters interdisciplinary research, as evidenced by the joint direction of the Faculty of Social Sciences and the Faculty of Medicine.

The presence of this institute on campus signifies the increasing importance of research on aging-related topics at the university. The Herczeg Institute conducts and promotes an array of studies relating to aging and old age. These studies concern issues such as physical and mental health, health promotion, adaptation and resilience at old age, well-being and quality of life along the life span, cognitive and emotional aging processes, the elderly in society, ill-health at old age, dementia, problems in attending to the old, traumatic life events and the long-term impact of the Holocaust.

Additional goals of the Herczeg Institute include the dissemination of gerontological knowledge in the academia and the community, stimulating researchers of aging and old-age in the various disciplines with a particular emphasis on promoting young researchers in the field and maintaining relationships with decision makers and policy makers in areas related to aging and old age.

The Herczeg Institute is directed by **Prof. Dov Shmotkin**.

Faculty members

Prof. Jiska Cohen-Mansfield, Ph.D.

Dr. Tali Cukierman-Yaffe, M.D

Prof. Hava Golander, Ph.D.

Dr. Eliyahu Mizrahi, M.D

Prof. Haim Hazan, Ph.D.

Prof. Shulamith Kreitler, Ph.D.

Prof. Jacob (Jackie) Lomranz, Ph.D.

Dr. Lilach Lurie, Ph.D.

Prof. Dov Shmotkin, Ph.D.

Dr. Isaac Sasson, Ph.D.

Administrative Staff

Keren Amsterdam –
Administrative Coordinator

Tom Aival –
Academic Coordinator

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Contact Information:

The Herczeg Institute on Aging, Tel Aviv University

P.O.B. 39040 Tel Aviv 6997801, Israel

Phone: (972) 3-6409544, Fax: (972) 3-6407339

Web site: www.herczeg.tau.ac.il

Facebook: Like us on [Facebook](#)

E-mail: herczeg@tauex.tau.ac.il

