



Successful aging starts with the choices we make in our 20s. It's that simple — and that complex. Three Bradley professors offer their researched insights into the changes that occur across the adult lifespan, breaking stereotypes along the way.

## Aging well through the decades

By **MARJORIE GETZ**

This Bradley instructor takes students on a fascinating journey through time — a timeline that details physical aging from an individual's 20s to his or her 80s. Marjorie Getz has students at both ends of the aging spectrum — more than half are Bradley undergrads, and the rest are over age 55.

Undergraduates often miss the idea that aging is a lifelong process (already underway for each of them) and better understood from a multi-disciplinary perspective. An appreciation of adult development should go beyond consideration of just chronological age and physical appearance and include an understanding of the interaction of biological, psychological, socio-cultural, and life-cycle influences on individuals as they age. In my courses, the first lectures, which provide a general description of physical changes that occur with aging, prove to be enlightening for most students.

**Marjorie Getz** specializes in health psychology and has been a gerontological practitioner since 1993. She holds a master's degree in epidemiology and public health from Yale, as well as an MS in psychology from Wesleyan University in Connecticut. Her husband Dan is a professor of religious studies at Bradley.

Gerontology is something I stumbled on as a career interest. My first job after college was as a research assistant at the National Council on the Aging. I was intrigued by the work, and I incorporated interests in aging and advocacy into subsequent education, training, and career opportunities. While teaching Adult Development and Aging at Bradley, I was able to integrate the undergraduate course with classes I teach for the Osher Lifelong Learning Institute (OLLI), part of Bradley's Continuing Education program.

The table below shows some physical changes that take place across the adult lifespan. In designing the table, I searched for well-designed, time-tested studies that tracked the same group of people over an extended period. Progress in our understanding of the science of aging is often iterative and incremental and cannot always be based on random experiments. I would like to label each row in the table as a normative age-related change, but it's not clear that we know this for sure.

Consider the development of skin wrinkles over time. Simply described, skin wrinkling is a four-step process. The outer layer of skin becomes thinner through cell loss, and the skin becomes more fragile. Underneath the skin, collagen fibers that make up connective tissue lose flexibility over time, and skin is less able to regain its shape when pinched. Elastin fibers in the middle layer of skin also change as a person ages and lose the ability to keep the skin stretched out, which results in sagging. The layer underlying the skin is fat, which diminishes with age, thus depleting the "padding" which smoothes out the contours of the areas covered by skin.

Is this process inevitable? Does it really start so early in life? Research shows that UV light exposure and smoking are two environmental factors that lead to skin wrinkling. Tanning has been popular with adolescents and adults for decades, and new smokers continue to be recruited from the pre-teen and teenage populations every day. Would conscious efforts to avoid these and other environmental exposures alter the timeline for wrinkle development?

**Issues with hearing**



What about changes in hearing over time? Students running on campus wearing earbuds attached to MP3 players are a common sight on the Hilltop. The increased blood flow to the ear during exercise is associated with making hearing receptors more vulnerable to damage. Would the table row associated with changes in hearing shift to an earlier age in the future because of the popularity and increased use of these devices?

### **Is prevention possible?**

As a follow-up to the table, the classroom discussion veered toward speculation on slowing down or preventing the aging process. Certainly, a goal to delay the development of chronic illnesses, often associated with getting older, is a laudable research objective, and engaging in healthy behaviors to delay harmful effects of aging is a legitimate activity. But does a focus on stopping a naturally occurring process — aging — arise from societal stereotyping? These focal points led to lively exchanges when both classes, undergraduate and OLLI, were meeting.

### **Web Extras**

Carefree college students might not realize that they're aging just like other adults.

Visit for more information.

Visit for more tips from the American Physical Therapy Association.

Visit for more tips from the American Physical Therapy Association.

a retiree who enrolled at BU and stayed for 12 years.

### **Helpful resources**

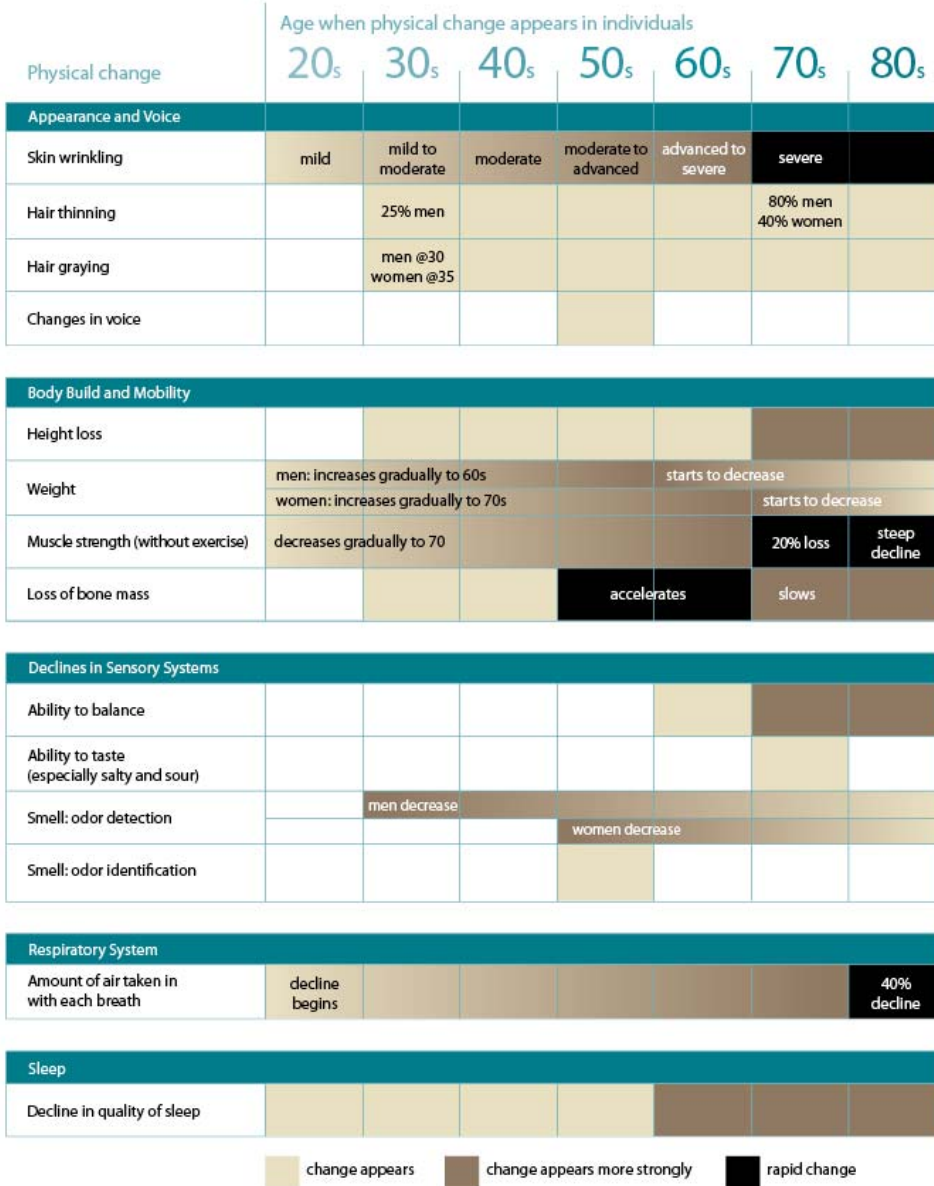
Research produced by the National Institutes of Health (including the National Institute on Aging), other government agencies, and university research labs can provide guidelines that can help reduce some limitations that take place with aging. The U.S. Preventive Services Task Force conducts scientific evidence reviews of a broad range of clinical preventive health-related services (such as screening, counseling, and preventive health services and medications) and develops recommendations for primary care clinicians and health systems.

Based on these guidelines and those advocated in initiatives such as Healthy People (a federally-sponsored public health initiative that provides science-based, 10-year national objectives for promoting health and preventing disease) it's safe to say that there are, as yet, no magic bullets. The Healthy People website provides general health-related guidelines by gender, age, and racial groupings.

Of course, certain healthy behaviors can ameliorate the negative aspects of aging: follow general public health recommendations about health screening and immunization; do not use tobacco products; drink alcohol only in moderation; avoid prolonged sun exposure through the use of sunscreens, clothing, and sunglasses; eat a varied diet of mostly fresh (as opposed to highly processed) foods; engage in moderate exercise most days of the week and physical activity throughout each day; avoid prolonged exposure to loud noises; wake and sleep at consistent times throughout the week; and prevent injuries by using seatbelts and appropriate safety equipment during recreation.

### **Timeline of age-related physical changes**

Compiled By Marjorie Getz. Contact Getz at for a copy of the table with academic sources included.



## Dispelling aging myths

By DR. MELISSA PETERSON '95

Most of us are familiar with the old adage, "You're only as old as you feel." The Pearce Community Center line dancers test this notion in Chillicothe each Monday, Wednesday, and Friday morning as the 35 women kick, twirl, and grapevine through an hour's worth of the more than 100 dance routines in their repertoire. Since the 1980s, the group has grown steadily, with dancers ranging in age from early 60s to 85. While the focus is on the dancing, they accomplish much more. They celebrate holidays, birthdays, and anniversaries, and support each other through illness, loss of spouses, and even the loss of group members.

, assistant professor of physical therapy, has taught at Bradley since 2001. She earned her master's at the University of Indianapolis and her doctorate at the University of Illinois. She is a certified geriatric clinical specialist through the American Board of Physical Therapy Specialties.

I had the opportunity to spend time with the line dancers, as they were a part of a two-year study on the effects of physical activity on several variables, including gait and balance. Along with my colleague Dr. Dawn Hall and students **JAIME KIRBY '07 DPT '10**, **JESSICA NEWMAN '07 DPT '10**, **ELLIOT COHEE, DPT '10**, **KYLE JOHNSON, DPT '10**, and **ASHLEE PIERSON, DPT '10**, I studied how these variables changed over a year for the dancers, as well as for groups of women who walk for exercise and those who do not exercise regularly.

While the dancing group did not demonstrate abilities superior to the walking group, both exercise groups differed from the sedentary group in two important ways: They were able to spend more time on one foot, and they demonstrated greater consistency with the length of their steps.

Why are these findings significant? They suggest overall greater stability with walking, thus potentially decreasing the risk for falling. While these findings are valuable from a research standpoint, the study also was valuable because it exposed my students to a group of people who dispel more myths with their actions than I could ever hope to with my lectures.

On the first day of the geriatrics unit in the lifespan development course, I give a quiz on the myths of aging. By the end of the class, we have started to chip away at the biases that some students hold regarding older adults. They learn that depression, dementia, and falling are not normal consequences of aging, but serious threats to quality of life that they are charged to address as health care providers and patient advocates. Later in the unit, I test the students on how many times they can rise from a chair without using their arms and stand on one foot. Many are surprised to hear that a healthy 70-year-old can stand from an armless chair at least 12 times in 30 seconds, and can stand on one foot for at least 10 seconds.



The Pearce Community Center line dancers work out three days a week just for the fun of it. They also take their show on the road, entertaining at nursing homes and other local venues.

They learn that having their geriatric clients kick their legs while sitting in a chair and march in place are not sufficient to promote optimal aging and prevent age-related decline in function. Multiple studies have demonstrated that older adults, even those in their 90s, achieve strength gains similar to those of young adults with a moderate or high-intensity strength-training program. Numerous benefits may be achieved with a challenging exercise program, including decreased fall risk, decreased risk of vertebral fracture, decreased depression, and increased independence for functional activities, such as walking and climbing stairs.

Many underestimate the abilities of older adults, and even discourage them from doing anything that may be difficult. My goal as an educator is for my students to enter the health care field armed with the knowledge and attitude to challenge these individuals to their full functional potential.

## Keys to a long life

By DR. G. KEVIN RANDALL

As members of Bradley's family and consumer sciences department, Dr. Jeannette Davidson and I are engaged in research with older adults. Our work highlights that at the end of the life span, just as at the beginning, good nutrition and a proper mental perspective are critical to maximizing all that life has to offer.

Dr. Davidson, director of Bradley's didactic program in dietetics, and Marjorie Getz, coordinator of the Turning Point retirement project, have investigated nutritional questions related to older adults in the Bradley Health and Aging Study since 1992. Research shows the current obesity crisis in the U.S. starts in childhood and is a challenge throughout the life cycle. However, in adults 80 years and older, malnutrition is sometimes more of a challenge than obesity. In fact, in our Health and Aging study, moderate obesity was associated with a positive quality of life outcome.

**Dr. G. Kevin Randall** is an assistant professor of family and consumer sciences and director of the C.C. Wheeler Institute. about his work.

### Mini-Nutritional Assessment

I have worked with Dr. Davidson and other colleagues around the country, focusing on psychosocial predictors of successful aging. She and Marjorie found that a substantial number of community-dwelling (private homes or assisted-living facilities, not necessarily nursing homes), older adults were at risk for malnutrition.

Assessment of older adults' nutritional risk is significant, as it is a key marker for increased risk of illness and death. They recommended the Mini-Nutritional Assessment (MNA) as an inexpensive, quick instrument to use in the field. A follow-up study focused on nutrition screening and assessment of older nursing home residents. Nutrition screening was found to be critical for early detection of malnutrition risk and to monitor the effectiveness of nutritional interventions.

Factors such as depression, declining mental status, isolation, lack of funds, and physical disability all play into poor diet quality in many older adults. Maintaining physical activity, being part of a group, using available resources such as congregate meal sites or home-meal delivery services, and social support are problematic in older adults, especially those living in the community, but are critical to maintaining adequate nutrition. Dietitians work with older adults to ensure proper hydration, intake of sufficient calories, and especially when dealing with declining appetites, intake of high-quality proteins. Adequate intake of fruits, vegetables, and whole grains is recommended for all age groups.

Focusing on individuals over the age of 70, the from Tufts University emphasizes nutrient-dense foods and increased fluid intake. (Note the drinking glasses on the second row.) The bottom row shows physical activity such as walking, swimming, and yard work.

Belle Boone Beard, a pioneer gerontologist, wrote in her book, *Centenarians: The New Generation*, "Ninety years is old, and 100 is news." Centenarians, those who have lived to 100 years and beyond, have survived, on average, 20 years beyond their birth-year peers, and as such are often referred to as "expert survivors." Scientists who study this venerable population report that 20 to 25 percent of centenarians live in community-dwelling situations, are cognitively intact, vibrant, and living life to its fullest. What we all want — added years of life and added life to those years — is what these survivors have achieved. Thus, the challenge is to learn from them about survival, disease, frailty, and independence with the goal that such findings can be used to promote healthy independence for all

who hope, as one sage quipped, " ... to die young, but as late in life as possible."