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BEHAVIORAL DETERMINANTS OF HEALTHY AGING: GOOD NEWS FOR THE BABY BOOMER GENERATION

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ABSTRACT

The first of the Baby Boomer generation will officially enter the beginning of old age in 2011 by turning 65. Recent research findings suggest that if the members of this cohort group engage in certain healthy behaviors and thought patterns in their middle years, they will experience a vital, satisfying life in their 70s and beyond. This article reviews the existing literature, including the results of longitudinal studies showing variables that predicted successful aging. Focusing on a lifespan psychology perspective of aging, the authors provide behavioral recommendations for middle age individuals that are likely to prevent disease-related disability, cognitive impairment, and late life depression. These include regular physical exercise, engaging in cognitively stimulating activities, maintaining an optimistic mental outlook, and finding meaning in life. The good news for the Baby Boomers is that there is increasing evidence that their behavior at age 50 will impact how they feel at age 80.

Key words: healthy aging, successful aging, late life vitality, life-span psychology view of aging, cognitive functioning, prevention of cognitive impairment, reducing risk of Alzheimer disease, age-related cognitive decline, resistance training, cardiovascular fitness, flexibility training, cognitively stimulating activities, wellness, primary prevention of geriatric depression, older adult quality of life, authentic happiness in late life

Behavioral Determinants of Healthy Aging: Good News for the

Baby Boomer Generation

Following World War II, the United States experienced a significant increase in the number of children born, so that between the years 1946 and 1964 the population of the United States grew by an estimated 76 million ([U.S. Census Bureau, 1996](#)). These children eventually became known in the social lexicon as the "Baby Boomer" generation. With each passing year the leading edge of the Baby Boomers moves steadily closer to their older adult years. By the year 2011, those people born during the first year of the baby boom will celebrate their 65th birthday and take their first step into old age ([Shephard, 1997](#)).

Can this generation of Americans expect to achieve a satisfying, high quality of life as older adults? The answer is a resounding yes, provided the members of this cohort engage in healthy behaviors and patterns of thought from middle age and beyond.

Vaillant and Mukamal ([2001](#)) demonstrated that good versus bad aging at age 70 to 80 could be predicted by seven variables before age 50. This landmark study followed two cohorts of adolescent boys, including 237 college students and 332 inner city youth, for 60 years or until their death.

For both groups the predictors of healthy aging included: not being a smoker or stopping young, having an adaptive coping style, not abusing alcohol, maintaining a healthy weight, having a stable marriage, and engaging in some exercise. Independent of social class and intelligence, education also predicted successful aging. Surprisingly, the variables that did not predict healthy aging were ancestral longevity, cholesterol level, stress, childhood temperament, parental characteristics, and ease in social relationships ([Vaillant, 2002](#)). These findings are hopeful for Baby Boomers because they suggest that we have greater control over our health and happiness after retirement than previously believed to be possible.

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Defining Successful or Healthy Aging

The concept of aging connotes declines, both physical and mental. Yet in recent years the phrases "healthy aging" and "successful aging" have found their way into the press as well as into research protocols. Longitudinal studies on aging demonstrate that these terms are not oxymorons. Rowe and Kahn ([1998](#)) include the following components in their definition of

successful aging: a low risk of disease and disease-related disability, high mental and physical function, and active engagement with life.

Similarly, in his definition of healthy aging, Vaillant (2002) describes the importance of physical, social, and emotional health. He suggests that aging well also involves the ability to forgive, feel grateful, and experience joy. Such behaviors and emotional states are also within a large degree of voluntary control.

This article summarizes the research findings of what can be done to promote vitality in old age by focusing on the modification of physical, cognitive, and psychological variables.

Physical Health in Late Life

Research in the field of the aging has been successful in providing evidence of the physiological changes that occur with increasing chronological age. These physiological changes include, among others, changes in cardiovascular structure (DiBello et al., 1993), a slow progressive decline in body mass (Bray, 1979), and a decrease in the strength per unit of muscle mass (Frontera, Hughes, Lutz, & Evans, 1991; Reed, Pearlmutter, Yochum, Meredith, & Mooradian, 1991). The research data suggest that these physiological decrements may contribute to a reduction in the overall quality of life of the older adult population (Buchner, Larson, Wagner, Koepsell, & DeLateur, 1996).

While a number of different metaphors have been attached to the aging process, such as the machine metaphor (i.e., the body as an aging machine that over time begins to break down), it is clear that as we age our physiology changes. One question is whether these age-related changes are absolute or susceptible to the influence of various interventions, including efforts at prevention. For both the older adult and the middle age Baby Boomer, the answer is that many of the age-related physiological changes respond quite well to intervention.

The focus of prevention research has been primarily on methods of developing and maintaining good health, preserving the quality of life of the older adult population, and improving those systems that contribute to the successful completion of the activities of daily living (ADLs). The musculoskeletal and cardiorespiratory systems respond favorably to a variety of interventions.

Seals, Hagberg, Hurley, Ehsani, and Holloszy (1984) demonstrated a 14% increase in maximal oxygen consumption following 6 months of training beginning at only 40% of maximal heart rate. Further, after 12 months the researchers reported an average increase of 30%, with a range from 2% to

49%. Similarly, Saltin (1986) and Spina et al. (1993) found that relative to a sedentary person, the older adult who has maintained an active lifestyle, while presenting with a lower maximal heart rate, has a significantly larger stroke volume. As such, the active older adult has the advantage of a larger maximal cardiac output. The research of Ehsani, Ogawa, Miller, Spina, and Jilka (1991) and Thomas, McCormick, Zimmerman, Vadlamudi, and Gosselin (1992) suggests that endurance training may augment the older adult's stroke volume and ejection fraction as a result of an increase in myocardial contractility and a decrease in collagen cross-linkage. Both stroke volume and ejection fraction are important if the older adult is to take advantage of the increase in end-diastolic volume (Frank-Starling Mechanism), which serves to compensate for the age-related decrease in maximal heart rate.

Regarding the musculoskeletal system, Pyka, Lindenberger, Charette, and Marcus (1994) recruited men and women between the ages of 61 and 78 to participate in a strength-training program that involved performing a circuit of 12 resistance exercises for 50 weeks.

Even frail older adults can benefit from resistance training.

After only 8 weeks the researchers were able to demonstrate significant increases in muscular strength in both men and women. Additionally, the researchers found increases in Type I and Type II fiber areas after 15 weeks and 30 weeks respectively. Fiatarone et al. (1994), utilizing an older group, age 72 to 98 years, demonstrated an increase in local

muscle strength of 113% following 10 weeks of resistance training. Additionally, the subjects exhibited increases in gait velocity (11.8%) and increases in stair-climbing power (28.4%). These individuals were all residents of a nursing home, providing good evidence that even frail older adults can benefit from resistance training.

For the baby boomer, however, the approach for a healthy future should be proactive rather than reactive. For example, consider the role of exercise in the prevention of osteoporosis. Simply put, the skeletal system is the framework upon which the body is built. Because of the skeletal system, muscles and tendons have origins and insertions, without which we would not be able to generate movement. While we go from day to day giving little thought to this natural framework, rarely does a day go by that our skeletal system is not undergoing some form of physiological maintenance that relies on the relationship between degradation and deposition. As we age, however, this relationship between degradation and deposition shifts from one that favors deposition to one that is more degradative, with women losing bone mineral more rapidly than men (36 grams/decade vs. 30 grams/decade respectively; as reported by Riggs & Melton, 1992). As a

result of this disparity, the older adult is at greater risk for a variety of fractures, with estimates being as high as 1.2 million fractures per year in the female population alone ([Smith, Raab, Zook, & Gilligan, 1989](#)). While this age-related change in bone health seems like a dire forecast for the aging adult's later years, much like the muscular system, the skeletal systems responds quite well to regular physical activity.

At the outset, the young adult whose life

includes regular physical activity has a distinct advantage over the sedentary young adult in that regular participation in weight-bearing and load-generating activities develops a higher bone mineral content. And while aging brings bone loss regardless of activity habits, at any given age the active young adult retains a distinct advantage over the sedentary young adult. As such, according to Shephard ([1997](#)) it takes many more years for the active young adult to experience bone degradation to such a level as to increase the likelihood of pathological fractures.

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Unfortunately, too often regular physical activity is added only after aging has manifested itself in such a way that the individual experiences a decrease in his or her physical capacity. Even so, the addition of physical activity to one's daily routine, even later in life, can do a great deal towards preventing bone diseases such as osteoporosis. In an early study conducted by Sidney, Shephard, and Harrison ([1977](#)), a group of 65-year-old men and woman were followed for one year. The participants carried out a program of aerobic exercise up to four times a week. At the end of the one-year period the group had successfully maintained whole body calcium content. Smith and Gilligan (1989) demonstrated a reduction in bone mineral loss from the radius in a group of women age 35 to 65 years after participation in an activity program that included weight-bearing and arm-strengthening. Similarly, following seven months of high intensity aerobic exercise (110% of heart rate reserve), Hatori et al. ([1993](#)) found an increase in the density of the lumbar spine (L2 to L4) in women age 45 to 67 years when compared to control subjects and those subjects who exercised at 80% of their heart rate reserve.

When combined with good dietary habits, which include adequate levels of calcium and Vitamin D, especially during early adulthood, the effect of age on bone health can be minimized and even reduced. Research suggests that both men and women can experience an increase in bone mass and/or a reduction in the risk for developing fractures with increased calcium intake

([Cumming & Nevitt, 1997](#); [Heaney, 2000](#)). This tends to be especially true in those individuals with initially low calcium levels. Both Anderson and Metz ([1993](#)) and Heaney offered that those individuals who consumed low levels of calcium rich foods had, on average, lower bone mass values than those age-matched individuals who regularly consumed recommended or higher levels of calcium.

From these investigations it becomes apparent that if we expect to be successful at staving off the effects of aging and preserving good health, then we must begin a regular exercise routine before age has manifested itself in such a way that it compromises our capacity.

Recommendations for Exercise

The inclusion of regular physical activity into our daily lives is the greatest weapon that we have against the onset of age-related disease and disability.

While the two systems addressed primarily in this particular article have been the cardiorespiratory and musculoskeletal, the effects of regular physical activity, as simple as walking for 15 minutes each day, have also been shown to have a positive impact on mood ([Joens-Matre & Ekkekakis, 2002](#); [Strawbridge, Deleger, Roberts, & Kaplan, 2002](#)).

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While current recommendations assume that the individual is healthy, it is important to consult a physician before beginning any exercise program. We also recommend seeking the advice of an exercise professional who is certified by groups such as the American College of Sports Medicine (ACSM), National Strength and Conditioning Association (NSCA), or American Council of Exercise (ACE). The professional trainer can help to insure that the exercise program is safe and effective as well as one that can be maintained over the course of a lifetime.

The American College of Sports Medicine recommends that in order to develop and maintain cardiorespiratory fitness, an individual should participate in some form of physical activity that utilizes large muscle groups, is maintained for a continued period of time, and is rhythmic in nature (e.g., walking, aerobic dance, rowing, stair-climbing). While the primary recommendation suggests duration of 20 to 60 minutes, accumulating this amount of time over the course of one's day is certainly acceptable for the individual who has previously been sedentary. To see the benefits of exercise one should participate in these activities 3 to 5 days per

week at an intensity of between 55 and 65% to 90% of maximum heart rate. For the uninitiated, the simplest method of calculating age-estimated heart rate is to subtract one's age from 220. The resulting number is the age-estimated maximal heart rate from which the appropriate intensity is calculated. While these values are appropriate for the healthy adult, intensity values of 55 to 64% of maximum heart rate are more appropriate for the individual who is quite unfit.

Perhaps an easier method

for calculating one's exercise intensity is to use what is often referred to as the "Talk Test." While exercising, an individual should be able to carry on a conversation comfortably with his or her exercise partner. If speaking is difficult (i.e., gasping or gulping for breath) then the intensity is too high and should be reduced. Conversely, if conversation is too easy, then the intensity should be increased. Also, it is important to remember that duration is dependent on intensity. Thus, a lower intensity activity should be conducted over a longer period of time (>30 minutes) while an activity of higher intensity should last at least 20 minutes or longer.

An easier method for calculating one's exercise intensity is to use what is often referred to as the "Talk Test."

Resistance training should be an integral part of any exercise program as it promotes muscular strength and endurance as well as aids in maintaining fat-free mass, which is often lost as we age. Additionally, through the inclusion of strength training older adults have available to them a valuable tool in the prevention of bone-related diseases such as osteopenia and osteoporosis. Research suggests that as a result of the stress placed on bone during weight bearing and stress generating activities those cells responsible for laying down new bone tissue are stimulated, resulting in an increase in total bone density ([Guyton & Hall, 1996](#)).

Current recommendations from the ACSM suggest that resistance training be progressive in nature, individualized, and provide stimulus to all the major muscle groups. For example one might do a bicep curl and tricep press to enhance and develop strength in the upper arm. Similarly, including a chest press in the routine will improve general upper body strength, while doing a leg press would improve general lower body strength. For the healthy individual one set of 8 to 10 exercises, consisting of 8 to 12 repetitions, for each of the respective muscle groups should be done 2 to 3 days per week. For the previously sedentary individual, the issues of individualization and progression are even more important as beginning at too high a resistance level or progressing too quickly will not only result in

unnecessary muscle soreness, but also increases the likelihood of injury. As such, it is important that any individual considering a resistance-training program consult an exercise professional for proper resistance levels and proper progression.

For the aging adult the inclusion of resistance training serves to preserve and protects one's ability to perform, with ease, those activities referred to as the activities of daily living, or ADLs. These include, but are certainly not limited to, climbing stairs, unloading groceries, getting into and out of one's vehicle, as well as rising from a seated position and engaging in activities that are of personal importance, or that bring personal satisfaction (i.e., hobbies) to an individual.

While resistance training is often thought of as an activity commonly engaged in at a fitness center or sports club, it is not necessary these activities occur in such arenas. Resistance training can be done in the comfort of one's own home, in small groups, or in community-sponsored programs. Additionally, while resistance training is commonly associated with weight machines and free-weight equipment, for the general population resistance training can be done with simple household items such as a full gallon of milk, a container of canned food, or resistance band type equipment. While decidedly more "low-tech" when compared to their "high-tech" counterparts, these items work just as well as those found in fitness centers and sports clubs.

In addition to resistance training, flexibility training should be incorporated into one's musculoskeletal program, as well as into the overall fitness program. Flexibility training serves to develop and maintain range of motion (ROM) and should include exercises that address the major muscle groups. Examples of these might include the hurdler's stretch to improve hamstring flexibility or "scratching the back" to improve upper arm and shoulder flexibility. Similar to resistance training, flexibility training should be done 2 to 3 days per week and should include the appropriate static and/or dynamic stretching techniques.

Just as strength training serves

to preserve, protect and develop those abilities related to the successful completion of ADLs, flexibility training is beneficial in that it develops and maintains one's ROM. The combination of sufficient muscular strength and endurance coupled with adequate flexibility insures that one will be able to complete those ADLs with much less effort. Consider, for example, the importance of lower back flexibility in every day living. Through the inclusion of regular flexibility training the ROM of an individual is improved such that bending over to put away groceries or to remove an item from the oven becomes that much easier.

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When we take the time to consider just how important freedom of movement and flexibility are in everyday living, it becomes easier to see the significant role that flexibility training can play in maintaining one's quality of life. For a more complete understanding of the current recommendations regarding physical activity and the healthy adult, the reader should refer to the position statement offered by the American College of Sports Medicine ([Pollock et al., 1998](#)) or online at www.acsm-msse.org.

Suggestions for Promoting Physical Health in Late Life

While often presented in a very strict and rigorous manner, perhaps the most encouraging aspect of all the exercise recommendations offered is that each can be integrated into the aging adult's life quite easily as noted below.

- Calcium and vitamin D intake can be improved by making a conscious effort to include 2 to 3 servings of non-fat milk, yogurt or cheese in one's diet. Regardless of personal preferences or taste, there are numerous high calcium, high vitamin D foods available.
- Aerobic activity involving large muscle groups can be accumulated throughout the day by using the stairs more frequently at work or taking a brisk walk with a group of co-workers during one's lunch hour 2 to 3 times a week.
- Resistance training can easily be done 2 to 3 times each week in the comfort and privacy of one's home utilizing common household items such as canned food items or filled milk containers.
- A wide variety of flexibility exercises can be done at one's desk throughout the course of the day. Not only does this serve the purpose of developing and maintaining flexibility, but this may also help to relieve the day-to-day stress of the work environment.
- Additionally, many communities offer exercise programs for little or

no fee, with classes often being taught by an exercise professional at convenient times throughout the day. Further, many companies, appreciating the importance of regular physical activity, now offer programs to their employees knowing that doing so improves productivity, reduces sick time, and improves overall morale of the workforce. For those companies that do not yet offer these types of programs, many employees have taken the lead and organized such things as walking groups, yoga groups, and even Tai Chi groups at work.

While on the surface including regular physical activity into our daily routine seems like just another item on our "to do" list, the reality is that the aging adult benefits both in the present and, more importantly, in the years to come.

Cognitive Health in Late Life

Cognitive decline, especially memory deficits associated with aging, is a concern of many Baby Boomers in regard to their parents as well as for themselves. Is it true that as we age, despite level of physical fitness and general health, we can expect memory and other cognition changes to occur? Scientific consensus is that many older adults experience decline in their cognitive abilities, and Alzheimer disease accounts for some portion of this decline ([Nolan & Blass, 1992](#); [Wilson, Bennett, & Swartzendruber, 1997](#)). Population estimates are that 25 to 50% of adults over age 85 suffer from dementia ([Bachman et al., 1992](#); [Evans et al., 1989](#)). Both cross-sectional and longitudinal studies document cognitive decline with age, with level of formal education found to be a modifying factor ([Snowdon, Otswald, Kane, & Keenan, 1989](#)). The areas of cognition most likely to show age-related decrements are declarative or episodic memory (i.e., the ability to learn and retain new information) and mental processing skills such as perceptual speed. This refers to the speed with which simple perceptual comparisons can be completed, usually measured with timed tasks that require substituting symbols or making same/different judgments about pairs of visual stimuli ([Wilson et al., 1997](#)).

Recent research findings are promising in regard to the possibility of modifying or forestalling

the cognitive declines that typically occur with increasing age and preventing the risk of Alzheimer disease. There is a growing body of research that supports the notion of neural plasticity across the lifespan, suggesting that cognitive and physical stimulation helps to maintain perceptual and memory skills. For example, in the Religious Orders Study of 801 older Catholic nuns, priests, and brothers followed for 4.5 years, frequent participation in common cognitive activities was associated with reducing the risk of Alzheimer disease ([Wilson et al., 2002](#)). The activities involved information processing as a central feature, not merely engaging in physical exercise. Activities included reading newspapers, magazines, and books; playing games such as cards, checkers, crosswords, or other puzzles; viewing television and listening to radio; and going to museums. On average, a person who was at the 90th percentile for frequent cognitive activity at baseline was 47% less likely to develop Alzheimer disease compared to a person who engaged in infrequent activity (10th percentile).

Recent research findings are promising in regard to the possibility of modifying or forestalling the cognitive declines that typically occur with increasing age and preventing the risk of Alzheimer disease.

A study examined leisure activities conducted in young and middle adulthood by two groups, 193 patients in their 70s diagnosed with probable or possible Alzheimer disease compared to those reported by 358 healthy older adults ([Friedland et al., 2001](#)). The researchers found that the control group had been more active during midlife than the group of cognitively impaired patients for intellectual, passive, and physical activities, after controlling for age, gender, income, and education. Friedland et al. concluded that the diversity as well as the intensity of the intellectual activities conducted in young to middle adulthood was reduced in the patients who later developed dementia.

Results from a study of language decline across the life span, one aspect of the Nun Study, a longitudinal and epidemiological study of aging that investigates risk factors for dementia, also suggest that leisure activities can moderate cognitive impairment in old age ([Kemper, Greiner, Marquis, Prenovost, & Mitzner, 2001](#)). The researchers compared grammatical complexity and idea density from autobiographies written by nuns in young adulthood from two groups of the same religious order who lived in different convent locations, Baltimore and Milwaukee. A decline in idea density found for study participants who met criteria for dementia in late life was steepest for the nuns from the Baltimore convent who had higher initial scores. After analyzing differences in convent life between the two groups, the researchers posited that the Milwaukee convent emphasized intellectual

activities such as scholarly writing, reading, and biblical study that served to maintain linguistic abilities in old age.

Both intellectual pursuits and physical exercise appear to have a moderating impact on cognitive ability in late life. A recent meta-analytic study of eighteen intervention studies published between 1966 and 2001 examined whether aerobic training enhanced the cognitive functioning of healthy but sedentary older adults ([Colcombe & Kramer, 2003](#)). Fitness training was found to have selective benefits for cognitive skills, with the largest benefit occurring for executive-control processes. The degree of the effects of fitness on cognition was moderated by a number of methodological factors including the length and type of the interventions, as well as the gender of the participants, with women benefiting more than men.

What about reversing age-related decline? There is less research to date on this topic, but a very promising research initiative, known as ACTIVE (Advanced Cognitive Training for Independent and Vital Elderly) revealed some promising findings ([Ball et al., 2002](#)). A volunteer sample of 2,832 people aged 65 to 94 was studied to assess whether three cognitive training interventions could improve mental skills and daily functioning in adults who lived independently, did not have functional decline, and were not diagnosed with dementia. Each intervention consisted of ten sessions of small group training in one of three skills: memory, inductive reasoning, or processing speed. The results demonstrated that the interventions improved the performance on the measures of the specific cognitive ability for which the participants received training that continued for 2 years, but did not generalize to improvements in everyday functioning. The researchers believe that a longer than 2 year follow up is necessary to assess whether long-term functional gain is possible, given that the subjects showed minimal functional decline at the time of the study.

This burgeoning body of literature provides a strongly hopeful message to the Baby Boomer cohort because routine participation in such activities is clearly within reach of the average American.

Regular participation in intellectually stimulating activities and aerobic exercise throughout the lifespan appear to be modifying factors in forestalling and possibly reversing cognitive decline. This burgeoning body of literature provides a strongly hopeful message to the Baby Boomer cohort because routine participation in such activities is clearly within reach of the average American.

Suggestion for Promoting Cognitive Health in Late Life

It is again encouraging to note that activities promoting cognitive health in the later years are neither expensive nor complex.

Recommendations for enjoyable, readily available activities that promote cognitive health are provided below.

- Older adults will benefit from activities such as working crossword puzzles, learning a foreign language, playing an instrument, learning new computer programs, surfing the Internet, and visiting museums because they involve information processing that may have a buffering effect against cognitive impairment in late life.
- Older Americans can take advantage of free classes offered through local universities, participate in community-based educational programs such as OASIS that are sponsored nationally by the May Company Department Stores, and attend memory enhancement classes. One source for online courses on a variety of topics is www.fathom.com.
- Adults over age 55 can take educational trips through groups such as elder hostel. Visit their website, www.elderhostel.org for information.
- Based upon the principles of neural plasticity, Katz and Rubin (1999) offer a book, *Keep Your Brain Alive*, filled with cognitively challenging activities designed to keep the brain fit and flexible (www.keepyourbrainalive.com). Examples of these neurobic exercises include using the non-dominant hand to perform routine behaviors such as brushing teeth or combing hair, varying one's driving route to work, opening the windows when driving and attending to the tapestry of smells encountered, and reading a magazine never previously seen.

These suggestions, like those for promoting physical health, can be incorporated into the life patterns of Baby Boomers so as to positively influence how they feel at age 80.

Emotional Health and Happiness in Late Life

A symptom-based approach to understanding emotional health in old age leads to the traditional medical view that mental health is simply the absence of mental illness. Depressive illness, recognizable in older adults by symptoms that include sad, downcast moods, tearfulness, recurrent thoughts of death or suicide, diminished pleasure, feelings of hopelessness or worthlessness, restlessness, indecisiveness, and lack of initiative is one example of a common psychiatric disorder in late life that is often underdiagnosed ([Reynolds, Alexopoulos, & Katz, 2002](#)). Depression can be triggered from environmental circumstances such as loneliness, bereavement, retirement, disability of a spouse, and feeling unwanted or no longer useful ([Cummings, 1998](#)). Depression in older adults can also be caused by medical conditions or be a response to physical illness ([Frazer, Leicht, & Baker, 1996](#); [Weintraub, Furlan, & Katz, 2002](#)). The prevalence of major depression in the older adults who live in the community is relatively low (between 1 and 3%), but the numbers go up in primary care settings (10%) and in acute care settings (15%) ([Reynolds, Alexopoulos, Katz, & Lebowitz, 2001](#)). Untreated depression can lead to suicide (especially in white men over 75), alcohol abuse, excess disability from chronic illness, cognitive impairment, and overutilization of health care services ([Reynolds et al., 2002](#)). In the Medical Outcomes Study major depressive illness was found to be as debilitating as advanced coronary artery disease ([Wells & Burnam, 1991](#)).

Depression in late life is a treatable condition and should not be viewed as an inevitable state in old age. Increasing evidence demonstrates that a variety of forms of psychotherapy and psychological interventions are as effective in older adults as compared to the response of younger adults ([Pinquart & Soerensen, 2001](#); [Zarit & Knight, 1996](#)). Medication management has also been used successfully with older adults in treating depression. The combination of antidepressant medications with at least monthly interpersonal psychotherapy has demonstrated outcomes superior to treatments using only one of these treatments in preventing the recurrence of late life depression ([Reynolds et al., 1999](#)).

For individuals who have had bouts of depression early in life or in middle age, efforts to avoid relapse are critical to healthy aging. In order to prevent relapse of major depression in old age, the National Institutes of Health consensus panel on diagnosis and treatment of depression in late life recommends that older adults diagnosed with depression be treated with antidepressant medication for at least 6 months for the first episodes of depression and that treatment be maintained for at least one year for recurrent depressive episodes ([Reynolds et al., 2001](#)).

Relatively few studies are available regarding primary prevention of

depression in old age. We found one prospective study that examined the efficacy of a psycho-educational program in lowering rates of medical utilization by the newly widowed ([Cummings, 1998](#)). The use of medical services of 323 recently widowed older adults enrolled in a bereavement group were compared over a 2 year period to that of a group of 278 widowed patients who were on a waiting list and served as the contrast group. The patients who received the intervention attended 14 small group psycho-educational sessions (two hours long) that focused on increasing a sense of self-efficacy, defeating learned helplessness, and restoring meaning to life. Homework involving relaxation and mental imagery, permission to cry, visitation of the grave of the deceased, and making an effort to eat properly and keep up good grooming was assigned after each session.

The bereavement program prevented a surge

in medical care utilization for the widowed older adults during the two years after the death of a spouse, resulting in cost savings of about \$1,400 (in 1982 to 1992 dollars) per patient compared to the medical costs incurred by the contrast group. Extrapolated over the large number of recently widowed each year, such preventive interventions could potentially save millions of dollars under the Medicare program not to mention helping to reduce emotional suffering. This study did not specifically measure ratings of mood, but the data indicate that physical symptoms of ill health requiring medical attention were avoided.

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Based upon knowledge of risk factors for late life depression, Reynolds et al. (2001) suggested three directions for prevention of depression. These include cognitive-behavioral therapy for chronic primary insomnia because of its risk in triggering depression; interpersonal, cognitive-behavioral or problem-solving therapy for patients with chronic illness; and social rhythm stabilizing therapy for recent widows and widowers. Bibliotherapy, a type of self-administered treatment that is delivered via written material, has been used effectively for the treatment of depression in older adults and should not be overlooked as a potentially powerful tool to also prevent depression ([Scogin, 1998](#); [Scogin, Jamison, & Gochneaur, 1989](#)).

The lifespan psychological viewpoint of aging defines emotional health as more than the lack of symptoms of mental illness. This perspective examines behaviors, lifestyle, and thought patterns that lead to qualities such as vitality and vibrancy in late life. Recent literature suggests that maintaining emotional stability, having an adaptive coping style, and being actively

engaged with life are intrinsic factors of successful aging ([Perls, Silver, & Lauerman, 1999](#); [Rowe & Kahn, 1998](#); [Vaillant, 2002](#)).

These broad aspects of psychological health and well-being suggest that perceptions and expectations play a major role in late life emotional health and satisfaction. In the Harvard study of adult development, three cohort groups (a total sample of 824 young people) were followed for 60 to 80 years ([Vaillant, 2002](#)). The researchers classified well-being in late life along a continuum from the happy-well to the sad-sick. The objective good health of the individual was not necessarily related to happiness in old age; rather it was the subjective perception of how healthy the individual was that determined his/her happiness. Such findings are a tribute to the ability of humans to adapt to adversity ([Seligman, 2002](#)).

Positive affect early in life may impact not only life satisfaction in old age but also actual length of life according to the results of the Nun Study ([Danner, Snowdon, & Friesen, 2001](#)). Positive emotional content found in handwritten autobiographies of 180 Catholic nuns was strongly associated with longevity 60 years later. For summaries of the on-going findings from the Nun Study, refer to their website, www.nunstudy.org.

So what can a middle-aged person do to prevent depression in old age, create and maintain the qualities associated with healthy aging, and possibly impact the length of life? The relatively new movement in American psychology known as positive psychology provides one source of theoretical ideas on this topic. Seligman ([2002](#)) presents a practical equation for happiness: H (enduring happiness) = S (your set range, i.e., your genetically determined level of positive affectivity) + C (circumstances of your life) + V (factors under voluntary control, such as thoughts and feelings about the past including gratitude, willingness to forgive, and optimism about the future). His book and website (www.authentichappiness.com) contain questionnaires for self-assessment of many psychological variables such as optimism, gratitude, and 24 signature personal strengths.

In order to lift a depressed mood and offset the negative impact of hassles in life, behavior therapists recommend increasing the frequency of pleasant interactions and events ([Teri, 1991](#)). This strategy is based upon the behavioral view that depression results from a dearth of pleasant interactions and an excess amount of negative person-environment interactions. Seligman ([2002](#)) suggests that happiness (part of successful aging) can be increased momentarily through experiencing pleasures (e.g., having a back rub, indulging in a long hot bath, smelling roses, eating a favorite food, watching an exciting sport event or concert, and playing with a pet). For enduring happiness, gratifications (e.g., meaningful activities that require skill, concentration, feedback, deep involvement, and a sense of flow) need to be part of life as well.

Suggestions for Promoting Emotional Health From Middle Age to Late Life

The following health-promoting recommendations can be incorporated into everyday life by taking advantage of the many community emotional-health resources noted below.

- For both middle age and older adults, if symptoms of depression or other distressing emotional states last for more than 2 weeks, obtaining professional help through both a medical consultation and evaluation by an experienced psychotherapist is recommended.
- Consider the use of bibliotherapy, or reading self-help books, especially those with an empirically sound research base, to learn coping strategies to effectively manage difficult circumstances in life. *Authentic Happiness* ([Seligman, 2002](#)), *Feeling Good* ([Burns, 1980](#)), and *Optimal Aging* ([Ellis & Velten, 1998](#)) are a few examples of books that teach how to change automatic negative thoughts and increase adaptive points of view.
- Stay connected with others. The happiest people are those who are the most socially involved ([Perls, Silver, & Lauerman, 1999](#); [Seligman, 2002](#)).
- Because a stable marriage at mid life predicts successful aging, put effort into the marital or partner relationship. Two research-based self-help books are *Fighting for Your Marriage* ([Markman, Stanley, & Blumberg, 1994](#)) and *The Seven Principles for Making Marriage Work* ([Gottman, 1999](#)).
- Regularly schedule pleasant events in life (e.g., sensual pleasures or fun experiences) but even more importantly, put forth effort to add meaningful, personally gratifying, absorbing activities throughout life (e.g., community volunteer or church work, writing, dancing, gardening, political activism, to name a few avenues to pursue). Figure out what your signature strengths are (e.g., critical thinking, perspective, perseverance, justice, teamwork, appreciation of beauty) and then find avenues in life to exercise them. Go to www.authentichappiness.com for a self-assessment of signature strengths.
- Strive to find a broader meaning to your life, either through religious involvement or other humanitarian-based efforts in order to have a buffer against the psychologically deleterious impact of stress and adversity.

Incorporating these suggestions into one's life patterns at the age of 50 can influence health in the older adult years.

The Connection Between Religion and Physical and Mental Health

Religious practice and beliefs are a source of psychological help

Over the past 20 years, scholars in many health-related fields have investigated the fascinating and sometimes elusive connection between religion and health.

and health benefits to many individuals. Over the past 20 years, scholars in many health-related fields have investigated the fascinating and sometimes elusive connection between religion and health ([Anderson & Anderson, 2003](#); [Ellison & Levin, 1998](#); [Musick, Traphagan, Koenig, & Larson, 2000](#); [Seeman, Dubin, & Seeman, 2003](#)). A review of this extensive body of research is beyond the scope of this article, but the following is a summary of some of the most salient points, pointing out both the salutary as well as negative effects of religion and its health implications in late life.

On the positive side, religion predicts longevity. For example, in a meta-analytic study analyzing twenty nine articles, researchers concluded that individuals who scored higher on measures of religious involvement were almost 30 percent less likely to have died during the period represented by the study than those scoring lower on religious involvement measures, even after accounting for health, gender, race, health behavior, and social support ([McCullough, Hoyt, Larson, Koenig, & Thoresen, 2000](#)).

Religious participation reduces the likelihood of some illnesses ([Anderson & Anderson, 2003](#)). For example, in a sample of 3,963 older adults, those who were religiously active tended to have lower blood pressures compared to those who were less active ([Koenig et al., 1998](#)). This applied to attendance at religious services and private religious activities, but not to watching religious shows on television.

A strong religious belief system can positively impact mood. In one study of older adults admitted to an inpatient hospital setting because of medical problems and also diagnosed with clinical depression, those with intrinsic religiosity experienced a shorter time to remission of their symptoms of mood disturbance than those with extrinsic religiosity ([Koenig, George, & Peterson, 1998](#)).

A strong religious belief program can positively impact mood.

Explanatory mechanisms of such positive health effects from religious participation or intrinsic religious belief systems include the regulation of lifestyles and healthy behaviors, such as avoiding behavioral excesses and engaging in meditative practices; provision of social ties, social support, and

coping resources; the generation of positive emotions such as forgiveness; and the reinforcement of healthy beliefs such as self-esteem and personal efficacy ([Anderson & Anderson, 2003](#); [Ellison & Levin, 1998](#)). In a recent review of the literature, Seeman, Dubin, and Seeman ([2003](#)) concluded that available evidence is consistent with the hypothesis that aspects of religiosity and spirituality may be linked to actual physiological regulatory processes such as cardiovascular, neuroendocrine, and immune function. They also point out that additional studies are needed that utilize stronger research methodology including careful analysis of the concepts of religiosity and spirituality and specification of possible population variation in the patterns of relationships.

Ellison and Levin ([1998](#)) explore the potentially negative effects of religion such as adopting a coping style that leaves the responsibility for resolving health problems to divine intervention only or engaging in potentially dangerous religious practices such as snake handling. Extremist religious groups that advocate suicide bombing or other practices evoking divine vengeance can have an obviously deleterious impact on health and emotional well-being among its followers. Religious practices that foster guilt and shame, or condone withdrawal of community support following a perceived transgression, are other examples of the potentially negative health impact of religion. Conflicts within congregations, judgmental attitudes among parishioners, and demands for investment of money and time can also take a psychological toll and cause distress among members of a religious community.

Religious coping is one potentially powerful source of finding meaning in times of personal adversity and crisis that has long-term health benefits. Cognitively processing the consequences of personal tragedy can be enhanced by the support found in a community network fostered by organized religion as well as through seeking understanding and internal peace from religious beliefs. However, as Anderson and Anderson ([2003](#)) point out, non-religious people can find meaning in other ways by contributing time and energy to causes that result from personal tragedy. One nationally known example is the work done by the originator of the television show, America's Most Wanted. After the brutal death of his young son, John Walsh focused energy on helping millions of people to avert similar tragedies in their lives. In every community there are examples of people who have achieved meaning and solace in their lives with accompanying personal health benefits from promotion of knowledge and humanitarian causes.

Summary

In summary, the news for the baby boomer generation is indeed positive regarding their upcoming late life years. Behaviors, thinking patterns, and

emotional and spiritual lifestyles in middle age, factors over which individuals have significant control, have much more impact on health and satisfaction in the seventh and eighth decade of life than was once believed possible. Successful or healthy aging is a goal within reasonable reach.

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