

PART ONE



How Your Brain Grows



CHAPTER ONE

The Well-Aged Brain

Older and Happier

Growing older is a limiting of possibilities. At age 20, that's a depressing prospect. By age 60 or so, it's a relief. By 70 and beyond, it may be one of the reasons older folks are happier.

Yes, that's right: emotional well-being actually improves with age, according to studies from many different countries and cultures. Starting sometime after 60, folks tend to be happier, worry less, and have less stress. Wide-scale studies confirm it (and no, it's not a result of the forgetfulness of dementia).

Furthermore, research on creative accomplishments indicates that in some disciplines, such as the arts, history, and fiction writing, many people produce their best work in their 50s or even decades later. Philosophy, leadership, and politics are other areas in which the older person flourishes—hence, the term *elder statesman*.

The Myth of a Sad Old Age

Think of someone who is depressed, cantankerous, lonely, sexually inactive, and forgetful. Did an elderly person come to mind?

The answer, it turns out, depends on your age. Not surprisingly, a research team that surveyed adults at various ages found young adults (between ages 21 and 40) predicted that people would become less happy as they got older. In one survey, 65 percent of psychology students agreed that “most older people are lonely and isolated,” and in another survey, 64 percent of medical students agreed that “major

THE MAJOR MYTHS OF AGING

There's plenty of misinformation about old age, much of it dating back to when those in their 70s and 80s were considered ancient. But quite a bit of the erroneous mythology about aging comes from media portrayals of elders. Here are a few of the myths about your brain growing older:

We Used to Think But Now We Know
Older people are unhappy.	Studies show people are actually happier in their 70s than at midlife.
Depression is part of growing old.	The depression rate among healthy elders is under 5 percent—less than half the U.S. average rate of 11.26 percent (but it does increase with disability).
Retirement is terrific.	Actually, early retirement may increase the risk of death by 51 percent, and adding five years to the retirement date may lower it by 10 percent.
It's too late to improve my mind or quit bad habits.	Studies show mild cognitive impairment may be halted and perhaps reversed with exercise and other healthy activities.

depression is more prevalent among the elderly than among younger persons.”

Shows how much these whippersnappers know. The truth is actually just about the opposite. Population-based surveys reveal that rates of depression are highest in those between the ages of 25 and 45, and about half as high for independently living elders.

And they are happier too. In recent studies, adults older than age 60 were actually happier than the younger respondents, and happiness continued to increase with aging. The happiest group overall is men aged 65 and older.

We Used to Think But Now We Know
You can't teach an old dog new tricks.	The elder mind works differently than it did when it was younger, but it can still learn. In fact, it needs to learn new things to stay alert.
Seniors' brains are slower, and they make poor employees.	Slower perhaps—but more accurate and with better social and judgment skills than many younger workers.
Older people feel old.	A national survey shows 60 percent of those over age 65 feel ten to nineteen years younger than their chronological age.
Older people often regret their lives.	Only 1 percent of those over age 86 say their lives turned out worse than they expected.
When memory issues start, they rapidly progress to dementia.	Studies show that mild cognitive impairment doesn't always progress to dementia.
Alzheimer's disease is inevitable.	Not everyone gets dementia, and a 2011 report suggests that lifestyle changes may cut risks for some of us, perhaps as much as by half.

Where does this negative image of aging come from? Look no further than the entertainment available for your children (or grandchildren). Dubious depictions of the aged begin early in life. In Disney children's films, researchers found that 42 percent of elderly characters are portrayed in a less-than-positive light and as forgetful or crotchety. Unflattering renderings also pervade films aimed at adolescents. In a study of popular teen movies, most elderly characters were shown with negative characteristics, and a fifth fulfilled only off-putting stereotypes.

What's worse, studies show that some elderly people share these stereotypes. Talk about fiction! It might be time for a positive-aging action group.

Actually, It's Getting Better All the Time

Despite the very real and weighty concerns associated with aging, such as planning for retirement, health issues, and the death of companions and loved ones, it seems that many people in the United States actually get happier with age—and this is regardless of whether they are employed or retired, have young children at home, or live alone or with a partner. The fact is that growing older is, for many of us, growing happier.

Several studies show that happiness increases through the late 60s and into the 70s and perhaps beyond. In one study of twenty-eight thousand Americans, a third of the 88 year olds reported being "very happy," and the happiest individuals surveyed were the oldest. Indeed, the odds of being happy increased 5 percent with every decade.

Interestingly, research by Stanford University psychologist Laura Carstensen and colleagues collected over ten years found that compared with younger people, older people are more likely to recall positive than negative information, perhaps accounting partly for their often surprisingly rosy outlook on life. Older people are not generally lacking in sexual desire either. (See "Do You Think I'm Sexy?" later in

this chapter.) The researchers also found that emotional experience predicted mortality: controlling for age, sex, and ethnicity, those who said they had more positive than negative emotions in everyday life not only had an improved quality of life but were more likely to have survived over a thirteen-year period.

The observation of preserved well-being flies so much in the face of stereotypes about aging that it is often met with disbelief in both the general population and the research community, Carstensen and colleagues reported. And some older people themselves share pessimistic views about the “typical” older person.

Another wide-ranging study found that in older years, the emotional flames that threatened us with self-destruction have become comforting embers in most cases. Passions run deep, but not as hot and certainly not as out of control. They reported that

- Happiness peaked around age 20—and then again in those who were in their early 70s, when their feeling of well-being was up to late-teen levels.
- The middle years may be the hardest. General well-being fell sharply through the age of 25, stress peaked between the ages of 22 and 25, worry persisted for those between their 20s and 40s—and both decreased drastically after the mid-50s.
- Anger and stress steeply declined after the early 20s.
- Sadness increased through the 40s, falling off in the mid- to late 50s.
- Oldsters recalled fewer negative memories than younger adults did, and positive emotions outweighed negative ones

The data came from a 2008 phone survey of 340,847 randomly selected adults aged 18 to 85 performed by the Gallup Organization. The researchers in the study noted that the findings fit in with proposals that “older people are more effective at regulating their emotions than younger adults” and that older adults tend to “recall fewer negative memories than younger adults” do.

These findings come from a fairly average slice of the middle-class U.S. population and are similar to studies from more than seventy countries that show a U-shaped pattern of youthful happiness followed by midlife worry and stress and then later-life happiness.

In this study, about 29 percent of those queried had a college degree and a median monthly average household income between \$3,000 and \$3,999. During the call, participants were asked to rate how they currently felt their life stood on a scale of 0 (“the worst possible life for you”) to 10 (“the best possible life for you”). They were then asked if they had felt differently (happiness, enjoyment, stress, sadness, anger, and worry) “a lot of the day yesterday.”

“As people age, they are less troubled by stress and anger,” researchers noted in their study, which was led by Arthur Stone of the Department of Psychiatry and Behavioral Science at Stony Brook University. “And although worry persists, without increasing, until middle age,” they continued, “it too fades after the age of 50.”

This is not true for everyone, of course. Many do feel less happy with aging, including some people facing challenges with health or mobility issues, financial problems, or feelings of loneliness or loss. But quite a few of us are not just getting older; in terms of well-being, we’re getting better.

Great Late Achievers

Many well-known people have produced some of their best work after their 60s, some made major accomplishments well into old old age, and some of our iconic rock and roll figures are still, well, rocking and rolling. At 69, Mick Jagger and Keith Richards (born in 1943) are still Rolling Stones; at 71, Bob Dylan remains Forever Young (1941); at 73, Tina Turner (1939) is still turning heads; and at age 86, Tony Bennett (1926) is performing and painting.

And it’s not just performers: scientists have among the best of aging brains. Two of the most eminent scientists of the twentieth

AN HONOR ROLL OF GREAT OLD BRAINS

Herein is proof that life begins, or continues in fine fettle, after age 70. Just a few examples:

- At 70, Sophocles (496–406 B.C.) wrote *Electra* and *Oedipus at Colonus*, and at 83, he held office in Athens.
- At 71, Golda Meir (1898–1978) was named prime minister of Israel.
- At 75, Helen Keller's (1886–1968) book, *Teacher*, was published; Pablo Picasso (1881–1973) completed his portrait *Sylvette*, married for the second time at 77, then executed three series of drawings between ages 85 and 90.
- At 74, Giuseppe Verdi (1813–1901) wrote *Otello*, and at age 78, he wrote *Falstaff*.
- At 81, Benjamin Franklin (1706–1790) effected the compromise that led to the adoption of the U.S. Constitution, and at 82, Queen Victoria ruled England (1819–1901).
- At 86, Agatha Christie (1890–1976), who was later diagnosed with Alzheimer's disease, wrote her final mystery.
- At 88, Michelangelo (1475–1564) was painting and designing the church of Santa Maria degli Angeli e dei Martiri in Rome, and Konrad Adenauer (1949–1963) was chancellor of Germany.
- At 89, Arthur Rubinstein (1887–1982) gave one of his greatest recitals in New York's Carnegie Hall, Albert Schweitzer (1875–1965) headed a hospital in Africa, and architect Frank Lloyd Wright (1869–1959) completed New York City's Guggenheim Museum.
- At 91, Eamon de Valera (1882–1975) served as president of Ireland, Adolph Zukor, who lived to 103 (1873–1976), was chairman of Paramount Pictures, and mystery writer P. D. James (1920) published an acclaimed new book.
- At age 92, Andy Rooney (1919–2011) was commentating on television's *60 Minutes*.
- At 94, cellist Pablo Casals (1876–1973) conducted a performance and received the U.N. Peace Medal.
- At 100, Anna Mary Robertson Moses (1860–1961), who took up painting at 76, was still working as Grandma Moses.

century, Albert Einstein (1879–1955) and Thomas Alva Edison (1847–1931), worked up to the time of their deaths at ages 76 and 84, respectively. Nobel laureate Eric Kandel (1929) and neuroscientist Brenda Milner (1918), who received a major award at age 92, are among many elder scientists who have not retired.

Are Grandparents Safer Drivers?

Those added years may also add up to safety. Grandchildren seem to be 50 percent safer in crashes when driven by grandparents than by their parents, a study in *Pediatrics* finds.

Researchers looked at a cross-sectional study of motor vehicle crashes from January 15, 2003, to November 30, 2007, involving children aged 15 years or younger. The cases were culled from insurance claims with data collected by follow-up telephone surveys. They found that children driven by grandparents made up 9.5 percent of the sample but resulted in only 6.6 percent of the total injuries, even though the study also revealed the grandparents did not always use the best available child-restraint systems in the car. Researchers speculated there was an unaccounted-for protective grandparent driving style and wondered if grandparents, made nervous about the task of driving with the precious cargo of their grandchildren, establish more cautious driving habits. Of note is that these were younger grandparents for the most part, with the median age 58, although the age range went from 43 to 77.

Do You Think I'm Sexy? Apparently, Yes—at Any Age

Health willing, age does not wither sexual desire. Recent studies and surveys show the brains of those well over 60 years old want and enjoy sex.

In a national survey, more than three-quarters of men aged 75 to 85.5 and half of their female counterparts reported interest in sex and said they were sexually active. Among 75 to 85 year olds, 26 percent said they were sexually active.

Other studies find that age plays a role in marital happiness. A longitudinal study by sociologist Debra Umberson of the University of Texas at Austin and her colleagues measured the independent effect of age—as opposed to duration of marriage—and discovered that the older the spouses, the more likely they are to have a good marriage. They suggest it's perhaps because older couples are calmer and less emotionally reactive in marital conflicts than younger people or because they better appreciate their partner's positive traits.

Studies also suggest that in old age, men seem to want sex more than women do—and they get more, or at least they say they do (that doesn't seem much different than for younger men).

That could be partially explained by the dearth of men to partner aging women, who survive them. The American Association for Retired Persons (AARP) commissioned the *Sex, Romance, and Relationships: 2009 AARP Survey of Midlife and Older Adults*, the third it has prepared in the past decade.

The report queried about 1,670 people 45 years and older about sexual attitudes and practices and found that even in old age, men continue to think about sex more often than women do, see it as more important to their quality of life, engage in sexual activities more often, are less satisfied if they don't have a partner, and are twice as likely as women (21 percent versus 11 percent) to admit to sexual activity outside their relationship.

And, the report continues, both the frequency and satisfaction of sexual encounters were higher among those unmarried and dating (or engaged) individuals than among the married. Forty-eight percent of those who are single and dating said they have intercourse at least once a week, compared to 36 percent of those

FIVE GREAT THINGS ORGASM DOES FOR YOUR AGING BRAIN

Love, the ultimate socialization, is good for us, and research also shows that sex is good for the brain in at least five ways:

1. Nourishes it. Sexual activity increases blood flow, pulse rate, and respiration. In short, it is a cardio workout that bathes your brain in oxygen.
2. Relaxes it. Relieves stress and depression, which are connected with greater dementia risks.
3. Eases pain, which contributes to stress and depression.
4. Quiets your anxiety-ridden amygdala, the part of your brain that activates the fight-or-flight response. In fact, it has to tune way down for you to have an orgasm.
5. Renews it. Orgasm may prompt the growth of new brain cells in the hippocampus of your aging brain, according to animal studies.

who are married. In addition, 60 percent of dating singles are satisfied with their sex lives compared to 52 percent of those who are married.

Overall, however, there has been a dip in reported satisfaction with sexual activity: in 2004, 51 percent told AARP they were satisfied with their sex lives, and in 2009 it was 43 percent. One possible factor for the cooling ardor among elders: the economic chill and concerns. The percentage who said better finances would make their sex lives more satisfying increased from 2004 to 2009 (from 17 to 26 percent among men and 9 to 14 percent among women).

Age can affect some sexual activities in men, who may have erectile dysfunction and find it more difficult to get or keep an

erection, but older women don't usually have as many problems with sexual function. Of course, good health is equated with good sex, and in the AARP survey, health was among the top concerns voiced about sexual satisfaction. Women outliving their male partners and potential partners may account for their getting less sexual activity in later years, but men lose more years of sexual activity due to health issues than do women. Frailty or mobility problems can also take the bloom off sexual performance.

Sex among the aging was confirmed by another study of sex life in the United States that looked at reports from more than eight thousand people in three databases. It found that among those aged 65 to 74, 67 percent of men and 40 percent of women said they had been sexually active in the past year. Even among the oldest in the report, those 75 to 85 years old, 38.9 percent of men and 16.8 percent of women were sexually active.

And apparently still acting like crazy, irresponsible kids. One of the really startling findings shows that older is apparently not wiser: homosexual or heterosexual, the AARP study found that only one in five sexually active older singles reported using a condom regularly, and only 12 percent of the men and 32 percent of women said they used one every time. Not surprisingly, grandparents and even great grandparents had sexually transmitted diseases, from vaginitis to syphilis, gonorrhea, and genital warts, and 1 percent had HIV/AIDS. Data from the Centers of Disease Control and Prevention show that sexually transmitted diseases have skyrocketed among those 55 and older in the past few years.

One caveat: Remember that all of these studies about sexual activity depended on self-reporting—what the participants *said* about their sexual activity—and a slightly cynical person might be a wee bit suspicious at the level of activity the elderly men reported. So we might want to take the claims of men about their later life sexual activity with a grain of salt. Even so, if nothing else, these study results sure show older guys are thinking about sex quite a bit.

A Swell of Centenarians: One Hundred Reasons to Take Care of Your Brain

Jeanne Calment of France was 122 when she died in 1997, making her the longest-lived person known to date. Reaching the age of 100 years or more used to be rare. But today centenarians are the fastest-growing age group in the United States, with more than seventy-two thousand as of 2010. Experts predict there may be as many as 1 million by 2050.

If you're 60 years old (or younger) today, you could be in that group. You'll have plenty of company near your age: people aged 80 and older are the fastest-growing portion of the total population in many countries. By 2040, the number of people 65 or older worldwide will hit 1.3 billion, according to the National Institute on Aging. For the first time in human history, there will be more people in the world aged 65 and older than there will be children under the age of 5, with the most rapid increase in developing countries.

If you do live to 100, you'll want your mind intact, and if you are fortunate enough to possess a certain gene, it ups the odds of aging smartly. Nir Barzilai of the Albert Einstein College of Medicine and his colleagues examined 158 elderly people of Ashkenazi Jewish descent. Centenarians who passed a thirty-question test were two to three times as likely to have a common variant of the so-called CETP gene as those who did not, and those between ages 75 and 85 were five times as likely. The CETP gene variant leads to larger-than-normal cholesterol particles in the blood, the size perhaps making them less likely to lodge in the lining of blood vessels and thus lowering the risk of heart attack and stroke, which damage the brain.

But genes are not destiny, as studies of identical twins show. Your lifestyle practices play a major part in the health of your brain. A goodly part of this book examines normal aging, the threats to your brain health, and what you can do that could lower your risks of dementia and other brain-based conditions and perhaps join that premier One Hundred Club.