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How to Stay Fit as You Age

Course Guidebook

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Disclaimer

This series of lectures is intended to increase your knowledge of physiology, exercise, and health-related lifestyle choices and their basic effects on the human body as it ages. It is not designed for use as a medical reference to diagnose, treat, or prevent medical illnesses or trauma. Neither The Teaching Company nor Kimberlee Bethany Bonura is responsible for your use of this educational material or its consequences. If you have questions about the diagnosis, treatment, or prevention of a medical condition or illness, you should consult your personal physician.

How to Stay Fit as You Age

Scope:

Do you want to age, or do you want to age healthfully? A balanced fitness program will help you stay physically and psychologically healthy throughout your lifespan. You can cultivate a healthy body and a healthy mind through exercise. Whether you're already over 65, in your 50s but dealing with chronic conditions, or proactively planning ahead to stay healthy as you get older, the intent of this course is to support you in making good decisions that promote health and help you make the most of all the years you have. Whether you are just getting started with fitness or want to revitalize your existing fitness activities, this course will help you develop a plan to age healthfully.

To get the benefits of physical activity, you have to do it, and understanding motivational theory will help you leverage strategies for success. We will review barriers to change and stages-of-change theory to help you assess your current motivation level and establish a plan to get started.

Self-care is a vital part of health and wellness. Although self-care includes physical exercise, other considerations, such as stress management, a healthy diet, sufficient sleep, and mental exercise, all contribute to overall well-being. The consistent use of stress management techniques is an important part of any fitness program.

A balanced fitness program will help you stay physically and psychologically healthy throughout your lifespan. To support overall physical fitness, your exercise program should include cardiovascular exercise, strength and resistance training, flexibility training, balance training, and pelvic floor exercise. We will address the FITT principles (frequency, intensity, time, and type) to support you in developing the right plan for your current fitness level and your fitness goals.

You do not have to go to the gym to get fit. A broad array of activities supports physical fitness, including such activities of daily living as

gardening and housekeeping. In fact, even if you exercise regularly, how much you sit will have an impact on your health. We will discuss workplace fitness and how you can better support your health in the office. We will also review opportunities to challenge yourself and expand your horizons through competitive sports and social fitness activities, such as dancing.

Mindfulness fitness practices are types of exercise intended to unify your mind and body through the combination of physical and psychological exercise. Mindful fitness practices include programs in yoga, Tai Chi, and the martial arts, all of which combine physical exercise with deliberate breathing and mental training. Mindful fitness practices provide physical fitness benefits, such as strength, flexibility, and balance training, but they also offer benefits beyond physical exercise. Research literature shows that mindfulness practices are particularly well suited to supporting mental health and well-being, helping to improve self-esteem, reducing depression and anxiety, and reducing perceptions of pain.

Our environments affect our fitness levels more than we may realize; the presence or absence of sidewalks and grocery stores, for instance, can influence the health-promoting decisions we make. If your environment does not set you up for success, then you are relying on willpower to push through in spite of obstacles. Research shows that we have limited reserves of willpower and that temptation and stress reduce our ability to exercise willpower; it's wise, then, to establish an environment that helps you conserve your willpower resources.

Having strong social relationships is also important for our health. In fact, in terms of risk for premature death, having a low level of social interaction is more harmful than not exercising, twice as harmful as being obese, and as harmful as smoking 15 cigarettes per day or being an alcoholic. When we have connections with other people, we have a greater sense of purpose, and that can help us feel motivated to take better care of ourselves and take fewer health risks.

When fitness and exercise become your central focus—when you live to exercise and eat healthfully—then you are no longer aging healthfully. If you find that the activities that should promote health are beginning to

consume your life, you may have a problem. Even older adults are at risk for disordered behaviors, such as eating disorders, overtraining, and exercise addiction.

How you respond to illness, disability, or a chronic health condition will play a large part in determining your quality of life for the rest of your life. The times when exercise is hardest are when you just might need it the most. Adapted or modified physical fitness programs can help you recover more quickly and retain greater independence during illness, with chronic health conditions, and in spite of disabilities.

Physical activity promotes physical health. Benefits include improved energy and stamina; improved immune functioning and reduced risk for minor illnesses; and reduced risk for chronic conditions, such as diabetes, cardiovascular disease, and cancer. Physical activity also promotes psychological health; individuals who exercise regularly have a reduced risk for depression and anxiety and are more likely to experience marital satisfaction and earn higher pay. The goal of this course is to help you establish a plan for success that will enable you to reap these benefits, while having fun and maintaining your motivation.

This 12-lecture course is supported by 6 active sessions, including a relaxation session, a 30-minute chair yoga session; a 30-minute Tai Chi/ Qigong session; a 30-minute foundational fitness session (including key strength and flexibility exercises); two 15-minute core strength and balance sessions (one chair based and one floor based); and three 10-minute workplace fitness sessions, one each for getting energized, managing stress, and simply standing up and moving. The relaxation session includes 15 minutes of progressive relaxation, 5 minutes of meditation using the anapana breathing technique, 5 minutes of meditation using alternate nostril breathing, and a 5-minute Reiki energy session. ■

Aging with Optimism—A Holistic Approach

Lecture 1

Aging happens. We are all getting older, and we must all face the physical realities that go with that fact. As we get older, we become more prone to illness, more susceptible to chronic conditions, and slower to heal and recover. There is no fountain of youth that will keep us as perpetually fit and healthy as most of us were at 18 or 25 or 30. But we can choose to stay active and to work through pain and illness. We can, in other words, take control of our aging and make deliberate decisions that will help us maintain independence, foster our well-being, promote health and happiness, and transform the experience of aging into healthy aging.

Defining “Old Age”

- According to the American College of Sports Medicine, the term “older adults” generally means individuals who are over age 65, but it can also be relevant for adults aged 50 to 64 who have “clinically significant chronic conditions or functional limitations that affect movement ability, fitness, or physical activity.”
- For many of us, retirement and old age come sooner than we think they will. According to retirement survey statistics, only 23% of workers think they will retire before age 65, but 69% of retirees end up retiring before age 65. An earlier-than-planned retirement may be the result of a layoff, but it is often the result of unexpected health issues.
- Along with early retirement sometimes come unexpected limitations to our independence. For example, more than 20% of Americans over the age of 65 can no longer drive. On average, men live 7 years longer than they can drive, and women outlast their driving ability by 10 years.



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Happiness appears to be at its lowest between ages 51 and 55, after which it moves upward, with adults ages 66 to 70 reporting the highest levels of happiness.

- For all these reasons, it's important to think about how you're going to age, how you're going to deal with aging as it happens, and what you can do to age as healthfully as possible.

The Aging Process

- Even in the absence of disease, structural and functional deterioration occur in most physiological systems. These age-related changes affect a broad range of tissues, organ systems, and functions, and together, these changes affect activities of daily living and physical independence.
- Physiological aging includes declines in maximal aerobic capacity and skeletal muscle performance; thus, a fit man of 25 will run faster than a fit man of 65. But across the range of capacity, we determine where we are with our own levels of activity and exercise.
 - Although a 22-year-old man in peak physical condition has higher aerobic and muscle capacity than a 66-year-old man in

peak physical condition, the 66-year-old man is more capable and fit than a 22-year-old man who doesn't exercise or take care of himself.

- In fact, where you are on the spectrum of capacity now can predict where you will be later. Baseline values of physical fitness in middle-aged adults can predict future risks of disability, chronic disease, and death.
- Physiological aging also includes changes in body composition. Between the ages of 18 and 55, the average sedentary American gains between 17 and 20 pounds of fat. Between 55 and 65, we gain another 2 to 5 pounds of fat.
 - This gradual accumulation of body fat is accompanied by a redistribution of fat to central (around the middle) and visceral (internal) locations during middle age. We also experience a loss of muscle, called sarcopenia, during middle and older age.
 - These changes cause a domino effect: As you gain fat weight and lose muscle mass, your metabolism slows, causing you to gain more weight.
- Age-related changes in hormones affect how we store fat and burn calories and how much muscle mass we have. For instance, before menopause, women are more likely to store fat around the hips and thighs. After menopause, changes in estrogen levels make women more likely to store fat around the middle, which puts them at greater risk for cardiovascular disease.
 - But this cascade is not inevitable. Changes in diet and exercise can affect how much weight you gain and store. Resistance exercise can help you maintain or rebuild muscle mass.
 - Exercise to burn fat and build muscle improves your resting metabolic rate, helping you to burn more calories even while at rest.

- Getting older appears to be associated with declining levels of physical activity. The American College of Sports Medicine reports that older adults are generally less physically active than younger adults. Further, active older adults may spend almost as much time in physical activity as active younger adults, but they participate in lower-intensity activities, such as walking, gardening, and golf.
- Another normal consequence of aging is increased risk for illness and chronic disease. Advanced age is a risk factor for cardiovascular disease, type II diabetes, obesity, certain cancers, osteoporosis, and arthritis. All other things being equal, older adults are more likely to deal with these issues. But regular physical activity substantially modifies your risk profile for all these conditions.
 - Compared to their peers, older athletes demonstrate many physiological and health advantages. They have a more favorable body composition profile, with less total body fat and less abdominal fat; greater muscle mass; and higher bone mineral density. They are also 30% to 50% stronger than their sedentary peers and have improved aerobic fitness.
 - Older athletes have a reduced coronary risk profile, including lower blood pressure, better insulin sensitivity, lower levels of inflammation, and healthier levels of fats in the blood, all of which make them less susceptible to cardiovascular disease, heart attack, and stroke. Further, older adult athletes have faster nerve conduction velocity, meaning that they maintain better reaction time, which can have implications for holding on longer to their car keys.
 - Older adults who are active also are slower to develop disability in old age, meaning that even though aging occurs in athletic adults, it happens at a slower pace and is less likely to lead to the same levels of dependence and loss of ability.

Locus of Control

- Locus of control is the extent to which a person believes that he or she can influence the environment. Research has demonstrated

that people with an internal locus of control are healthier and more successful in adhering to health programs. People with an external locus of control may feel powerless and are at greater risk for illness.

- It is our internal perspective that matters because our happiness levels have a way of adapting to our circumstances. For instance, research with lottery winners shows that a few months after the excitement wears off, people are back to the happiness levels they had before they won. The same holds true for people who have experienced trauma, such as the loss of a limb or the death of a spouse; within a few years, they return to the same happiness levels they had before the traumatic event.
- Likewise, our mindset may determine how old we feel. In one study done in the early 1980s, older men were taken to a retreat that was set up to reflect the 1950s. One group of men was instructed to talk and interact as if they were living in the 1950s, while the other group was instructed to reminisce about their youth. Both groups improved in physical and mental tests from being reconnected to their youthful selves, but the group that lived as if they were young again improved even more. Living younger prompted their bodies to act younger!

No Pain, No Gain or No Pain, No Pain?

- In starting an exercise program, it's important to seek a balanced approach. Take the long view and move forward slowly.
- For some people, a degree of pain may be inevitable. If you live with chronic pain, you have to work through the discomfort of exercise—even accept it—so that you can use that discomfort to create health benefits that may reduce your pain in the long run. You must learn to be comfortable with discomfort as part of the growth process.
- Of course, you'll notice that these are two opposing views: On the one hand, you don't want to exercise to the point of pain or injury.

Bellows Breath

The Stomach Pump or “Bellows Breath” is a yoga exercise you can do anywhere. This exercise focuses on active engagement of the abdominal muscles, strengthening your core and promoting a healthier digestive system.

Start by assuming a comfortable position with good posture. Ideally, you’re standing, but you can also remain seated. Your feet should be wide and balanced, chest open, and shoulders rolled down and back.

Bend forward gently from the waist, place your hands on your knees, and take a deep inhalation. Then, exhale completely, pulling your belly button back to your spine.

Once you’ve exhaled, pause, without breath, and actively contract your stomach in and out, like a fireplace bellows. Relax, inhale, exhale out completely, and contract your stomach again.

On the other hand, if you live with chronic pain, you have to work through the discomfort you will feel while exercising to improve your health.

Fitness Goals

- For older adults, the goals of a fitness program can be confusing. Are you exercising to recapture abilities you used to have or to maintain what you’ve got? The answer may depend on your health and current fitness levels.
 - If you have not been deliberate about health and exercise in your youth, you may find that through a deliberate focus on fitness, you will experience better health in your older years than you did when you were younger.
 - In contrast, for older people who have always been fit, some of the inevitable physical changes of aging can be particularly difficult. As you age, you need to accept that fitness looks different.

- When centenarians are studied, researchers find that their longevity is generally due to a healthy lifestyle. Above all, three specific health-promoting characteristics stand out: (1) They exercise regularly; (2) they maintain a positive mental attitude; and (3) they maintain a good social network. We'll focus on these three components throughout this course.
- For many of us, one of the hardest things about getting older is a loss of perceived control. But perceptions of control over your own life are directly related to psychological health and well-being.
 - Because of this, exercise scientists believe that many of the benefits of exercise for older adults may be related to the degree to which exercise helps us maintain a sense of psychosocial control, self-efficacy, and perceived competency.
 - In turn, these attitudes can predict how well we will sustain behavior changes. In other words, if we feel as if we can get healthy, we are more likely to stick to the behaviors that make us healthy.
- As we go through this course together, remember that you can have an impact on your health and well-being. You can make the choice to be active and fit. You can stay engaged in your life until your very last breath. You may or may not be able to change your health, your finances, or your life circumstances, but you can choose to make the most and the best of what you've got in order to experience healthy aging.

Suggested Reading

Cozolino, *The Healthy Aging Brain*.

Langer, *Counterclockwise*.

Weil, *Healthy Aging*.

Activities and Assignments

Consider going to your doctor for a physical and to discuss your health status and safety precautions for exercise.

Dedicate a journal or notebook for your activities with this course.

Complete a personal inventory. Assess:

- Your current health status
- Your fears and preconceived notions about your health status
- Your current activity level
- Your obstacles to health and fitness
- What health aging means to you.

Getting and Staying Motivated

Lecture 2

Although most of us know the benefits of physical activity, few of us are sufficiently active. In fact, research shows that more than 80% of adults do not meet minimal guidelines for recommended physical activity and as many as 34% of older adults are completely inactive. What is it that gets us moving? A fundamental component is motivation—the desire and will to do something. In this lecture, we’ll discuss a model of behavior change, the many obstacles to change we all face, and the kinds of personal motivators that can get you moving.

Transtheoretical Model of Behavior Change

- The transtheoretical model of behavior change, or stages-of-change theory, holds that when faced with a potential change, our motivation falls into one of six stages: (1) precontemplation, (2) contemplation, (3) preparation, (4) action, (5) maintenance, and (6) termination. Let’s walk through each of these stages, using a smoker as an example to illustrate each stage.
- In the precontemplation stage, a person is not ready for change and may not even be aware that his or her behavior is problematic. A smoker in precontemplation has no intention of quitting smoking.
- An individual in the contemplation stage is getting ready for change. This is someone who is starting to recognize that he or she may have a problem. The individual



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Research shows that our capacity for imagination can help us make better decisions, including decisions about healthy aging.

expends cognitive energy looking at the pros and cons of the behavior to determine whether to make a change. Perhaps the smoker has a new grandchild, and the grandchild's pediatrician has provided information about the dangers of third-hand smoke. The grandparent may begin to think of smoking as more troublesome than it seemed earlier.

- An individual in the preparation stage intends to take action in the immediate future and may even begin to take small steps toward change. The smoker may make an appointment at a smoking cessation clinic or buy a box of nicotine gum or patches. These are preparatory steps toward making a change.
- When the individual actually begins to make the change, through specific, overt behavior modifications, he or she has moved into the action phase. Our smoker is wearing the patch or chewing nicotine gum and hasn't smoked a cigarette in several days. The smoker may also make adjustments in his or her life to better support the change, such as having the carpets cleaned or practicing self-hypnosis or meditation to work through stress instead of smoking.
- After several successful months as a nonsmoker, the former smoker moves into the maintenance phase. The individual has maintained the new, healthy behavior for a substantive period of time but is still actively working to prevent a relapse.
- At some point, maintenance moves to termination—the stage in which the individual is no longer tempted to relapse. Some psychologists believe that termination occurs when a behavior has been successfully maintained for at least 1 year.
- It's important to note, however, that for some behaviors, such as addiction to drugs, alcohol, or smoking, relapse can occur even after years of maintenance. Because of this, some psychologists believe that a changed individual is always in maintenance and will always have to actively work to maintain the healthy behavior.

Barriers to Change

- The topic of motivation also encompasses the obstacles—barriers to change—that get in the way of doing what we set out to do.
- One common barrier to change is procrastination, which in many cases, may be connected to a fear of perfection. We worry that we aren't good enough or that we can't do something well enough, so we give up before we even try. But generally in life—and certainly when we are talking about our health—good enough really is good enough. It's better to accept good enough than to keep waiting for perfection.
- Instant gratification is another barrier to change. You may want to make healthy choices, but it's more fun to watch TV, have a snack, read a book, or take a nap. Remember, though, that “easy” is not the same thing as “gratifying.” It may take a little push to get you out the door for a walk, but once you're walking, you will actually feel good from the fresh air, the activity, and the sunshine.
- Preconditioned beliefs can also be barriers to change. Perhaps you believe that you're not an athlete, that exercise is undignified for older adults, or that you might get hurt if you exercise. The key here is to question these beliefs. Who says you're not an athlete? Why can't you be both dignified and fit? If you worried that you might get hurt, make fitness choices that are gentle and have a low potential for risk.
- Still another common belief is that a little exercise won't make a difference, but the truth is that it does. A large study published in 2008 in the *British Journal of Sports Medicine* reported that just 20 minutes of physical activity per week is sufficient to promote mental health. And taking a moderate 30-minute walk 5 times a week is enough exercise to significantly reduce your risk of dying prematurely.
- Fear of discomfort is also a common barrier to change, and it's true that exercise can be uncomfortable and make you tired. But if you

choose an exercise program that is right for your body, abilities, and interests, you'll find that being uncomfortable isn't the same as being pain. You'll also learn that some discomfort—some sense of muscle fatigue—is normal and is part of the process of becoming stronger and have less chronic pain.

- For some people, globalizing is a barrier to change. Those who have had one bad experience, such as encountering a snake on a hike or a partner with bad breath in a dancing class, may believe that they will always have similar bad experiences. Instead of giving the activity another try or trying another activity, they write off any kind of exercise. To fight the tendency to globalize, try to figure out what caused the bad experience and how you can adapt either yourself or the activity for greater enjoyment.
- Perhaps the greatest barrier to change is lack of time, but did you know that the average American over age 2 watches 34 hours of live television per week and 3 to 6 hours of taped or recorded programming? And Americans over age 65 watch, on average, 48 hours of television per week. The fact is that we have time, but we choose to spend it on non-fitness activities.
 - If you really can't give up your TV watching, then put it to work for you. Put your treadmill or elliptical in front of your television. If you're not quite ready to put exercise equipment in your living room, do squats, sit-ups, and stretches during commercials. If you watch 2 hours of television every evening, you could get in 28 minutes of exercise!
 - You should also put fitness on your schedule and treat it as seriously as you would a meeting or an appointment. Consider it self-care and a valuable part of your day. If it helps you stay more committed, make a date with a friend or family member to walk or go to the gym after work.
 - Remember that small blocks of time add up. Instead of looking for 30-minute blocks of time during the day, try to find 5 or 10 minutes. If a meeting ends 10 minutes early, walk a loop

around your office building. Stretch for 5 minutes while your coffee finishes brewing or do 1 minute of resistance exercises while you wait for your toast.

- A final barrier to change is the idea of risk complacency and the illusion of invincibility—the belief that disease happens to other people. Many younger people have this attitude, but the illusion becomes harder to maintain as we get older. We start to feel the effects of our own poor choices, and we watch as our parents pass away or our friends and peers deal with illness. Ultimately, we start to realize that disease can affect everyone.
 - Unfortunately, this shift in perspective can lead to another barrier to change: a sense of indifference and helplessness. If we're all going to die anyway, why should we bother to change?
 - Of course, we all are going to die, but the choices we make can have a great deal of impact on the quality of the years we have.

Never Too Old to Start

- Scientists used to believe that the brain had a window for plasticity—for change in response to the environment—and that after a certain age, we were less able to learn new things. This thinking led to the idea that only children can learn foreign languages to fluency or that to really learn a sport or a musical instrument, you have to start as a child.
- Recent neuroscience, however, has fundamentally changed our understanding of the human brain and its capacity for change and evolution. Neuroscience and its ability to map brains has helped us understand that our brains are constantly growing and reacting to the environment throughout the lifespan.
 - One interesting study compared London bus drivers, who drive fixed routes, with London taxi drivers, who might drive anywhere on London's 25,000 streets. The taxi drivers' brains actually showed growth in a part of the brain related to knowledge of maps.

- Another study found that medical school students showed changes in the parts of the brain related to memory after studying for and completing their exams.
- One study demonstrated that even older adults with cognitive impairment have brain plasticity. After 6 weeks of a deliberate memory-training program, they improved their performance on memory tasks by 33%, and magnetic resonance imaging (MRI) scans showed increased activity in their brains.
- These types of studies confirm that we can make changes later in life, and such changes can make a difference in quality of life for our remaining years.
- Motivations may be different for each of us; one person may see the need to fight a bad genetic history; another may want to play with a grandchild in the park or take an outdoor-oriented vacation. Identifying your motivation is an important first step to improving your fitness; take some time to find that spark that will get you up and moving.

Suggested Reading

Bandura, *Self-Efficacy*.

Prochaska, Norcross, and DiClemente, *Changing for Good*.

Activities and Assignments

In your journal, assess where you are in the stages of change: precontemplation, contemplation, preparation, action, or maintenance. What will help you move forward?

What are your personal motivators for fitness? Brainstorm as many motivations for fitness as you can.

Self-Care Fundamentals

Lecture 3

Self-care has become a trendy term, and it may often be confused with the idea of indulgence or pampering. But self-care is not about getting a manicure or allowing yourself a glass of wine each night. Instead, it means choosing behaviors that help you balance the effects of the stressors of modern life. Self-care may include some indulgence and pampering if little luxuries help you feel more balanced, but even more vital for self-care are the core behaviors that really matter for our health. In this lecture, we'll focus on sleep, nutrition, mental exercise, and stress management.

The Importance of Sleep

- In modern American society, we tend to view sleep as a burden, an inconvenience that gets in the way of the activities we want to perform. Often, successful professionals brag about how little sleep they get; they are so competent that they don't need as much sleep as the rest of us. But that idea is a fiction. No one functions well on minimal sleep.
- If you think 5 or 6 hours of sleep a night is enough for you, science proves otherwise. After sleep deprivation, people experience noticeable changes in brain activity as measured by an electroencephalogram (EEG). Such changes affect you across the board, reducing your concentration, working memory, mathematical capacity, even logical reasoning.
- Among the first deficits that occur during sleep deprivation are those in logical reasoning and complex thought. One 2004 study from Harvard Medical School found that hospitals could reduce medical errors by as much as 36% by cutting doctors' work shifts to no more than 16 hours and their total work schedules to no more than 80 hours per week. Other research has found that the rate of errors in surgery goes up each hour over the course of a surgeon's day.

- Ongoing lack of sleep also has long-term effects. One interesting example is weight gain. One study found that people who sleep 4 hours or less per night are 73% more likely to be obese than normal sleepers. A longitudinal study conducted by researchers at Stanford University tracked the sleep habits and hormone levels of more than 1,000 people for 15 years. Hormones that are vital in managing appetite were directly related to how much sleep the participants got.
 - There was also a demonstrated relationship between sleep amounts and body mass index (BMI). Almost 75% of the study participants reported that they slept less than 8 hours per night, and the increases in body mass were proportional to the reduced sleep.
 - The biggest risk seems to occur for people who sleep less than 6 hours per night, while the ideal BMI seems to occur for people who sleep 8 hours per night.
- Sleeping less than 5 or 6 hours per night also increases risks for developing diabetes and coronary heart disease and affects mental health. When we look at the overall picture of healthy aging, sleep may determine just how many years of healthy aging we have. Large cross-sectional studies indicate that sleeping 5 hours or less per night increases mortality risk by about 15%.

Changing Your Sleep Habits

- The quality and quantity of sleep matter so much that even if you make no other change, if you start getting 8 hours of sleep per night, you will have better health, feel better mentally, and probably lose weight.
- To promote both more and better sleep in your life, fix a bedtime and a wake-up time and stick to them. Your body will get used to falling asleep and waking up at the same time each day. If possible, match your bedtime and wake-up time to natural daylight hours. You are better off sleeping 8 hours from 10 p.m. to 6 a.m. than from 2 a.m. to 10 a.m.

- Don't consume caffeine or alcohol 4 to 6 hours before your bedtime. Alcohol has the immediate effect of making you sleepy, but a few hours later, when your blood-alcohol levels decrease, a stimulant effect kicks in that will interfere with your sleep. You're better off having a glass of wine in the afternoon—as long as you're not driving—than drinking wine with dinner.
- Exercise regularly, but avoid exercise 2 hours before bedtime. The changes in body temperature that occur as a result of exercise can affect your sleep cycle. The exception to this rule is a gentle, relaxing exercise routine, such as a gentle yoga program, that may help you calm down and go to sleep. You can also try other relaxation strategies, such as deep breathing, meditation, or progressive relaxation (systematically tightening and relaxing the muscle groups in the body).
- Dedicate your bedroom to only two activities: sex and sleep. Keep your TV, laptop, and working papers elsewhere. You want your unconscious mind to associate your bed and bedroom with sleep. The bedroom should be comfortable, quiet, and cool—between 60° and 68°.
- Finally, establish a pre-sleep ritual to help you transition from day into sleep. Turn off your electronics—your phone, tablet reader, computer, and TV—an hour before bedtime. Take a warm bath or shower and then read a book in a different room before heading into your bedroom. Follow the same routine every night.

The Importance of Diet

- A fitness program should be accompanied by a well-balanced diet to support overall health and wellness. If you're getting enough sleep, managing your stress, and exercising regularly, but you live on fast food, you will not experience optimum fitness and health.
- A healthy, well-balanced diet built around whole natural foods, particularly fresh fruits and vegetables, is essential. Research

continues to demonstrate that it's better to get your vitamins, minerals, and other nutrients from fresh foods than supplements.

- It's also important to drink plenty of fresh water to stay hydrated. Even when you're working out, unless you're sweating excessively or training for a marathon, water, not an expensive sport drink—is your best source of hydration.

Mental Exercise

- Research has demonstrated that there are changes, even declines, in certain components of cognitive function with normal aging. For instance, reaction time and working memory are both affected as part of the normal aging process. However, cognitive function during normal aging should be viewed as a zone of possible functioning, with the individual's personal decisions and health constraints influencing where he or she is within that zone.



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Just as you can make a difference in the way you age through physical exercise, so, too, can you make a difference in the way your brain ages through mental exercise.

- Neuroscience studies demonstrate that the older adult brain is still plastic; that is, it still has the potential for positive change. It's also true that older adults can leverage cognitive strategies to adapt to and even benefit from the changes that take place with aging. Older adults may approach learning and processing with new, different strategies, allowing them to continue to function effectively and efficiently.
- Mental exercise should be a part of your overall exercise program. Learning new things and challenging yourself with new adventures can actually stimulate the development of new neural connections to support brain functioning. Doing puzzles can engage both working and long-term memory and challenge your problem-solving skills. You can learn new patterns and new abilities by trying a new skill, such as taking up a musical instrument or learning a foreign language.

Stress Management

- The hormones related to chronic stress make you more prone to both short-term and long-term illness. Stress hormones also negatively affect your weight and your decision-making ability.
- Stress is defined as an automatic biological response to physiological, psychological, and sociological demands. The basics of stress boil down to a simple process:
 - A stressor occurs in the environment.
 - You perceive the stressor in a particular way (based on both other factors in the environment and your own personality, history, and knowledge).
 - If your perception is positive, the outcome is eustress, and you perceive the experience as positive.
 - If your perception is negative, the outcome is distress, and you perceive the experience as painful or uncomfortable.

Stress Reliever

Stand up and think back over all the stress and frustration you experienced during the day—all the times when you didn't get to do what you wanted to do, had to deal with someone who was being unpleasant, or got stuck in traffic or even mentally stuck.

Next, put your arms up over your head and shake them. Move as if you were a giant bowl of Jell-O. Shake your arms, your legs, and your head. Be silly, but move with every ounce of energy you have. Feel yourself pouring all your frustration and stress—all of your fight-or-flight responses—into your movement.

Now, stop and take a deep breath. How do you feel? Probably a little silly, but laughter is another great stress management technique. You should also feel more relaxed because you've gotten rid of the excess energy you accumulated by feeling stressed. Try this exercise at the end of any stressful day.

- Two people may experience the same environmental stressor very differently based on their perceptions. Some people perceive such events as riding a roller coaster or exploring a new city positively and feel eustress; others may perceive the same experiences negatively and feel distress.

The Impact of Stress

- When we talk about how stress affects us, it's helpful to look at three points in time: the immediate reaction, the acute reaction, and the chronic reaction.
- The immediate reaction to stress is commonly known as the “fight-or-flight” syndrome. When you perceive a stressor, you experience increased heart rate, blood pressure, respiration, and so on. These changes represent a primal response intended to help you either physically confront a danger or run away from it. If the stressor is

physical and immediate, it is usually quickly resolved by the fight-or-flight reaction.

- In contrast, if the stressor is ongoing or can't be immediately resolved, then you begin to experience acute manifestations of stress, such as insomnia, digestive upset, emotional irritability, and so on.
- Both the immediate and acute reactions to stress can be uncomfortable, but stress levels only become problematic when they are chronic. When you experience ongoing stress over long periods of time, the constant roller coaster of the immediate stress responses combined with the slow wearing down of systems from acute reactions to stress lead to chronic health issues, such as hypertension, cardiac irritability, panic attacks, and more.

Optimal Stress Levels

- The optimal amount of stress is enough to provide motivation and energy but not so much that you burn out and wear down. How much stress is ideal is different for each of us, and having a sense of self-awareness to identify your ideal level of stress is one key aspect of managing stress.
- The psychological theory of the individual zone of optimal functioning (IZOF) states that we each have our own unique levels of ideal stress. The IZOF is often pictured as a bell-shaped curve. With a stress level that's too low, you experience low performance. As stress increases up to the IZOF, your performance increases. Once you reach the IZOF, additional stress decreases your performance.
- Once you know your preferred level of stress, you can use stress management techniques to support that level. Effective stress management requires becoming aware of events that commonly cause you stress; taking care of your health through a nutritious diet, sufficient sleep, and moderate exercise; using appropriate strategies, such as time management techniques, to prevent common

stress-inducing situations; having a social support system; and preparing yourself to deal with stress through mental exercise and relaxation techniques.

- Healthy coping techniques for stress management include exercise; goal setting; time management and organization; reframing (viewing a situation from a different perspective); and breathing exercises, meditation, and progressive relaxation.

Suggested Reading

Anding, *Nutrition Made Clear*.

Epstein and Mardon, *The Harvard Medical School Guide to a Good Night's Sleep*.

Heller, *Secrets of Sleep Science*.

Sapolsky, *Stress and Your Body*.

———, *Why Zebras Don't Get Ulcers*.

Activities and Assignments

Assess your sleep quality and quantity. How much sleep are you getting per night? How do you feel with the current amount of sleep you get? Do you wake up rested? Do you feel groggy in the mornings, at midday, or at bedtime? What can you do to improve your sleep hygiene? Assess changes in your bedroom and your bedtime routine. What can you do to adjust your schedule to support the goal of getting 8 hours of sleep per night? What additional support or resources do you need to embrace the value of sleep in supporting your health?

What is your IZOF (individual zone of optimal functioning)? Over the next week, reflect at the end of each day on the stressors you experienced and how they affected the way you feel. Think about such stressors as lost items (your keys, cell phone, wallet), deadlines (at work or at home, such as paying bills on time), your own tardiness or the other tardiness of others, social interactions (parties, situations in which you meet new people, arguments

or debates with friends or colleagues), and external factors (traffic, the line in the grocery store). How does each experience make you feel physically—tired or energized? Do you feel a knot in your stomach or a rush of excitement, a headache or a sense of clarity and purpose? What stressors support your performance and what stressors reduce your performance? Under what amount of stress do you perform at your best?

Think about opportunities you can find to experience eustress. What fun, new challenges could you try to have a eustress experience? You can start small, with something that is a little bit stressful but could be fun, such as a trip to a place you'd like to visit or the opportunity to learn a new language or musical instrument.

Fitness Fundamentals—Choose Your Activity

Lecture 4

In our last lecture, we talked about the fundamentals of self-care, of which physical activity and exercise are key components. In this lecture, we'll focus on how you can use physical activity and exercise to take better care of yourself. We'll begin with some foundational definitions of physical activity, physical fitness, and the key components of physical fitness. We'll also talk about the various types of exercise you need to incorporate into your routine and the components you need to include in your personal fitness plan.

Foundational Definitions

- Physical activity is movement by your skeletal muscles, movement that requires energy and produces health benefits. Physical activity is in contrast to physical exercise, which is physical activity that is planned, structured, and deliberate, intended to improve or maintain physical fitness. Physical fitness is the ability to meet the ordinary and unusual demands of daily life safely and effectively.
- Traditionally, when we talk about physical fitness, we talk about five key components: muscular strength, muscular endurance, cardiorespiratory endurance, flexibility, and body composition. In talking about fitness to support healthy aging, we add three additional aspects of fitness: balance and pelvic floor strength and endurance.
- Muscular strength is the ability to exert maximum force against resistance, that is, the ability to lift or move a heavy weight one time. Muscular endurance is the ability of a muscle to exert submaximal force repeatedly over time, that is, the ability to move or lift a light or moderate amount of weight multiple times.
 - Muscular endurance requires muscular strength. If you don't have a base level of strength, you won't be able to continuously move lighter items.

- Muscular strength and endurance are both specific and targeted. However, you can use strength-training exercises that target multiple muscles or groups of muscles to build your strength as efficiently as possible.
- Cardiorespiratory endurance reflects how the pulmonary, cardiovascular, and muscular systems work together during aerobic activities. Thus, cardiorespiratory endurance is the way in which your lungs, heart, and blood vessels collaborate to support you during constant movement. Without cardiorespiratory endurance, an individual’s ability to move and function is severely limited.
- Flexibility is the range of motion you have at a joint or a group of joints—how much you can move that joint without causing injury. A lack of flexibility can be related to injury and can cause poor posture and chronic pain. Some research indicates that 80% of chronic low back pain in the United States is related to improper alignment of the vertebral column and pelvic girdle as a result of inflexible and weak muscles.
- Body composition refers to the fat and non-fat components of the body. BMI is the most widely used assessment of body mass and can be a rough estimate of health risk and mortality rate. A BMI between 22 and 25 indicates the lowest risk of chronic disease for both men and women.
 - Because fat tissue in the abdomen may be associated with higher risk for heart disease and diabetes, another simple measure of health risk using body composition is waist circumference.
 - A waist circumference above 40 inches for men and above 35 inches for women indicates increased disease risk.
- Balance is the ability to stay upright and remain in control of your body movement. When you have good balance, you are in control of your gait and have a sense of being sure on your feet. When your balanced is compromised, you are more likely to trip, lose your footing, or experience serious falls.

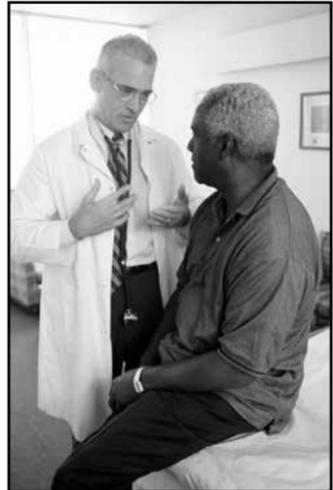
- Balance can be further divided into two types: static balance, which is the ability to stay upright while still, and dynamic balance, which is the ability to stay upright and remain in control while moving.
- Both types of balance are important, and both require that you have a strong core body and a good sense of body awareness.
- Pelvic floor strength and endurance, supporting voluntary control of the bladder and bowels, are a critical part of physical fitness as we get older. Even if you maintain all the other aspects of physical fitness, if you are no longer continent, your quality of life will suffer.
 - Urinary incontinence affects at least 10% to 30% of the population, and that’s probably an underestimate. One study found that only half of individuals who had experienced urinary incontinence reported it to their physicians. Many women may think that urinary incontinence is a normal result of having babies or going through menopause.
 - Incontinence is related to poor ratings of one’s own health, feelings of social isolation, depression, and impaired quality of life. It’s also expensive; the annual estimated cost of urinary incontinence in the United States is \$32 billion, or about \$3,500 per person with incontinence.
 - It’s important to understand that continence requires deliberate exercise, just like every other aspect of fitness. Older adults can take control in this area and support their own independence through exercise.

Types of Exercise

- To support overall physical fitness, your exercise program should include cardiovascular exercise, strength and resistance training, flexibility training, balance training, and pelvic floor exercises.
- Cardiovascular exercise is also called endurance or aerobic exercise. In this type of exercise, the body’s large muscles move

in a rhythmic manner for sustained periods of time, as in walking, jogging, swimming, biking, or dancing. Cardiovascular exercise increases your breathing and heart rate to improve the health of your heart, lungs, and circulatory system.

- According to the American College of Sports Medicine (ACSM), you should do at least 30 minutes of moderate-intensity exercise 5 days per week. This can be broken up into three 10-minute blocks throughout the day. In fact, some research suggests that for certain health conditions, such as high blood pressure, three 10-minute blocks during the day may produce greater health benefits than one longer block. For even greater benefit, the ACSM recommends up to 60 minutes of cardiovascular exercise 5 days a week.
- It takes 3 or more months of aerobic activity to see improvements in cardiorespiratory endurance—and you have to keep doing it to sustain the benefits.
- Strength or resistance training includes exercises that cause your muscles to work or hold against an applied force or weight. Strength training increases both muscular strength and muscular endurance. You can do strength training using hand weights, resistance bands, strength training machines, or your own body weight.
 - Strength training is also important for your bones. As we age, bone density decreases, putting us at greater risk for fractures. Weight-bearing exercise provides support in maintaining bone density.



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Older men, as well as older women, can also be at risk for osteoporosis; talk to your doctor if you have experienced a decrease in height.

- The ACSM recommends that you do resistance training at least 2 days per week, with 8 to 10 exercises involving the major muscle groups. Aim for 8 to 12 repetitions of each exercise.
- Flexibility training refers to activities designed to preserve or extend range of motion around a joint. Flexibility training helps you stretch your muscles and stay limber so that you maintain independence in how you move. Deliberate stretching and such exercise programs as yoga and Tai Chi include flexibility training.
 - The ACSM recommends that you do moderate-intensity stretching at least 2 days per week, using sustained, static stretches for each major muscle group.
 - Static stretches are slow and controlled and make you less prone to injury. This is in contrast to the ballistic stretching (jumping and bouncing) you may have learned in high school gym class.
- Balance training refers to a combination of activities designed to increase lower-body and core-body strength and to reduce the likelihood of falling. Whole-body fitness programs, such as yoga, Tai Chi, and dance, include substantial balance work.
- Pelvic floor exercise is simple but critical to your overall fitness program.
 - The first step is to identify your pelvic floor muscles. The next time you urinate, try to stop the flow of urine in midstream. The same contraction of muscles is used to do pelvic floor exercise.
 - One simple pelvic floor exercise is to isolate the muscles of your pelvic floor, keeping your stomach, bottom, and thighs soft and relaxed. Then, lift up and contract your pelvic floor for a count of 5 and release.

Components of a Fitness Plan

- There are four key components of a fitness plan, and a simple acronym to remember them is FITT, meaning frequency (how

often), intensity (how hard), time (how long), type (what mode/type of exercise).

- Here's how the components translate: Let's say you commit to some simple cardiovascular exercise; you will walk (type) for 20 minutes (time) 3 times a week (frequency) at a gentle pace (intensity). After a month, you may decide to increase your walking to 5 times a week for 30 minutes at a faster pace. You may also add some strength and flexibility training; twice a week, you'll do chair yoga.
- As you work on your FITT plan, be realistic. Think about the types of activities you would enjoy, the activities your life will currently support, and how you can use the principles of FITT to start building physical fitness. What matters is that you craft a plan that works for you.

Suggested Reading

American College of Sports Medicine, ed., *ACSM's Complete Guide to Fitness and Health*.

———, <http://www.acsm.org/>.

Brill, *Functional Fitness for Older Adults*.

Activities and Assignments

Assess your health risk via body composition:

- Determine your BMI using the calculator available at: http://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/english_bmi_calculator/bmi_calculator.html.
- Measure your waist.

- Establish an initial fitness plan, using the principle of FITT.

	Frequency	Intensity	Time	Type
Cardiovascular exercise				
Strength and resistance training				
Flexibility training				
Balance training				
Pelvic floor exercise				

Think creatively: What activity are you already doing that you could leverage into exercise through a more deliberate approach?

Fitness beyond the Gym—Active Daily Living

Lecture 5

Even if you make good health-promoting decisions, such as getting 8 hours of sleep a night and exercising for 30 minutes 5 times a week, you still have to worry about the other 15½ hours in your day. Large-scale studies show that increased sitting raises your risk of disease and premature death, and this increased risk holds even among people who exercise regularly. The problem is that most of us sit for 12 or more hours each day. In this lecture, we'll talk about building movement into our daily lives in addition to 30 minutes a day of deliberate exercise.

The Benefits of Movement

- When you stand up and move around, your muscles contract; in turn, those muscular contractions stimulate blood flow and the movement of lymph through your body, helping to clear bacteria out of your cells. Muscle contractions also help your body clear out fats and sugars.
- Animal studies indicate that when animals rest for prolonged periods, they have decreased enzymatic activity. Most chemical reactions that occur at the cellular level require enzymatic activity; thus, decreased enzymatic activity may indicate that your body is not functioning as effectively as it should be at a cellular level.
- Thermogenesis is the production of heat by the cells of the body, in other words, the burning of calories. There are several forms of thermogenesis, including exercise-associated thermogenesis (EAT); non-exercise activity thermogenesis (NEAT); shivering thermogenesis; and diet-induced thermogenesis (DIT).
 - About 10% of food calories consumed are required to process calories in the body, and DIT is the energy required for that processing. But DIT means that all calories are not alike. A calorie of carbohydrates can take 5% to 10% of its energy just to process it; a calorie of protein can take 20% to 30% of

its energy to process; and a calorie of fat may take as little as 3% of its energy to process. Thus, a cup of full-fat ice cream not only has more calories than a cup of non-fat, high-protein Greek yogurt, but it is also easier for your body to burn, which means that you keep more of those calories.

- NEAT can be a great way to boost your metabolism and support weight loss or weight maintenance. In one research study, lean people were found to move more—up to 67% more movement in a day—and obese people were found to sit more—up to 61% more sitting in a day. In other words, fidgeting is a great way to burn calories all day long.

Activities of Daily Living

- If you get only one exercise device to support your health, it should be a pedometer. Attach it to your waistband every day and keep track of how much you walk. If you're like the average American, you will walk between 2,000 and 3,000 steps a day, but to promote health through daily movement, you should aim for 10,000 steps a day. Large-scale research studies show that middle-aged adults who accumulate more than 10,000 steps per day have more favorable body composition and a lower risk of cardiovascular disease.
- As we've said, a little goes a long way. Try to combine a little bit of exercise with a focused effort to sit less and move more. Shoot for 30 minutes a day of actual exercise, and remember that three 10-minute blocks is fine. Then, make a conscious decision to stand more than you sit and walk whenever you can.
- To incorporate more movement in your daily activities, try taking the stairs instead of the elevator, parking at the back of the parking lot, or pacing instead of sitting while on the telephone. You can also think of chores, such as raking leaves or mopping, as ways to incorporate more movement into your life. The following chart shows how many calories a 155-pound individual burns by performing some common daily activities.

Activity (performed for 30 minutes)	Calories Burned (by a 155-pound individual)
Exercise	
Walking	150
Taking a gentle yoga class	150
Taking a low-impact aerobics class	200
Riding a stationary bike	250
Running on a treadmill (at 5 miles per hour)	300
Inactivity	
Napping	23
Watching TV	27
Reading	42
Standing in line	47
Household Chores	
Raking the lawn	149
Performing general gardening	167
Weeding the garden	172
Digging and spading the garden	186
Chopping wood	223
Shoveling snow	223
Cooking	93
Working on your car	112
Grocery shopping with a cart	130
Washing windows	167
Painting the house	186
Moving furniture	223
Leisure Activities	
Playing pool or billiards	93
Going bowling or playing Frisbee	112
Practicing archery	130

Playing golf	130 (with cart)/205 (carrying clubs)
Coaching a children's sports event	149
Playing hopscotch or other active games with children	186
Ballroom or square dancing	200

- You can increase movement at work by walking to a colleague's office to talk rather than emailing, pacing while you're on the phone, or walking around the building with a colleague rather than sitting at a conference table. You might consider using a standing desk or sitting on an exercise ball rather than a standard chair.
 - Make sure your keyboard and monitor are at the right height and try to get some natural light into your work area. Research shows that people who work in office buildings that have natural or full-spectrum light have better health, reduced absenteeism, and increased productivity.
 - Be aware of your posture while you work. One research study found that when people were reminded to sit up straight, they had more confidence in their own abilities than when they were slumped over a desk.



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Sitting on an exercise ball at work engages your core body muscles and your back muscles, enabling you to develop your balance all day long.

Outdoor Exercise

- Japanese has a word that literally means “forest bathing”; it refers to the restorative benefits of being out in nature. Being outside can

Posture Check

If you're seated, plant your feet firmly on the floor with your ankles about hip width apart and your shoulders stacked over your hips. Roll your shoulders gently down and back, with your chest soft and open. Your head and gaze should be level, with the back of your neck neutral. Notice how you feel in this position: calm, confident, centered.

Now, as a contrast, let yourself slump forward. Drop your spine backward and let your shoulders and neck roll forward, with your head drooping downward. Feel how your body and mind become more tired. Your energy is just as “slumpy” as your posture.

Deliberately sit back up; roll your shoulders down and back and concentrate on pulling your belly button in to engage your core. Again, notice how much more stable, centered, and strong you feel.

If you really feel need to boost your energy, spread your legs wide, with your knees and hips open at angles, and feel how that “pops” your chest open and lifts you up naturally. It's actually uncomfortable to slump in a wide-legged position. When you've got a wide base, it's easier to maintain better posture.

Next, stand with your feet about hip width apart, allowing your body to stack up in alignment—ankles over feet, knees over ankles, hips over knees, shoulders over hips. Gently roll your shoulders down and back to open the chest. Your arms are relaxed beside you. Your head is neutral, and your neck is comfortable. This isn't the Marine Corps chest-popped posture; it's open, comfortable, and relaxed. Every hour throughout the day, stand up from your chair for a moment and try this deliberate stance. This exercise engages the muscles of your back and core and reduces your total sitting time during the day.

have profound health benefits, including effects on psychological health. Research indicates that walking outside can reduce depression and improve memory.

- One theory holds that nature gives our attention a break from the distractions of the modern world. When we're outdoors, we have more space to rest and allow our attention to wander, and the things that we do attend to are richly rewarding—the changing colors of leaves or the flash of a bird flying by.
- You get more benefit from a 3-mile walk on a nature trail or in a park than you do from a 3-mile walk in a mall. As you plan your exercise routine, think about taking your workout outside the gym and into the natural world. You may experience even greater benefits when fresh air, natural light, and a green landscape are combined with physical fitness activities.

Dance and Sports

- Dancing or sports allow you to experience social benefits combined with physical activity. Dancing provides aerobic exercise and is an excellent workout for improving your balance.
 - You'll find many styles of dancing to try, including ballroom dancing, line dancing, contra dancing, polka, square dancing, salsa, and Latin dancing. In addition to dance studios, you can find dance programs in community or senior citizen centers and at local community colleges or universities.
 - Learning dance routines provides mental exercise to challenge your memory and improve cognitive ability, and music can support an elevated mood. Further, the social component of dance helps you develop and strengthen relationships with others and can provide an opportunity to connect with both older and younger people.
- Even if you've never been particularly active and don't consider yourself athletic, consider trying a sport. The results may be

surprising; you might find that training for a triathlon or learning tennis adds a spark of excitement to your life.

- Use the FITT plan we discussed in the last lecture to build the fitness components you need to add sports to your life. For instance, if you've always walked and would like to try running a 5-kilometer race, begin transitioning a portion of your walking time to running. Try walking for 15 minutes, running for 5, and walking for 15 more minutes. When you begin to feel comfortable with that routine, add more running time.
- Before you get started with a new sport, talk to your doctor to make you understand any safety recommendations you should follow. For instance, if you've had a knee replacement or have a history of stress fractures in your feet, running may not be the right goal for you to set.
- You may also consider making an investment in the process. Hire an instructor or coach to learn correct form and strategies, which will help you stay safe. And make sure you have appropriate equipment.

Exercise on Vacation

- Think about your vacation as another opportunity to get moving. A vacation doesn't have to mean that you just pay money and eat food. Even on a cruise ship, you'll find numerous opportunities for activity. Many ships have rock walls to climb or surfing machines, dance or fitness classes, and personal trainers. Without your work schedule and the stressors of daily life to get in your way, you can spend time taking better care of your body.
- Of course, on vacation, you can also go exploring. On a cruise, instead of signing up for a bus tour in port, try swimming with stingrays or zip-lining across the rain forest. Think about opportunities for eustress and surprise yourself with activities that are fun, different, interesting.

- Consider planning your whole vacation around physical activities. If you love to bike, plan a biking tour of French wine country. If you're into hiking, try a volksmarching tour in Germany. Build fitness into the planning stages of your vacation to heighten your sense of anticipation and the fun once you arrive at your destination.

Suggested Reading

Buder, *The Grace to Race*.

Levine, *Move a Little, Lose a Lot*.

National Senior Games Association, www.nsga.com.

Switzer, *Running and Walking for Women over 40*.

Team Hoyt, www.teamhoyt.com.

Activities and Assignments

Go back to the list of activities to leverage as creative approaches to exercise that you generated in Lecture 4. Assess how many of them qualify as activity based on calories burned. Which ones burn as many calories as a 30-minute workout? How can you turn those activities into workouts? For instance, do you do enough yard work for a dedicated 10-, 20-, or 30-minute block of active gardening? Visit <http://www.health.harvard.edu/newsweek/Calories-burned-in-30-minutes-of-leisure-and-routine-activities.htm> for a list of calories burned by various activities for individuals weighing 125 pounds, 155 pounds, and 185 pounds.

How can you stretch yourself to try something new? What's a fitness activity you have always wanted to try but haven't thought you could do? How can you challenge your preconceived notions and surprise yourself? Think about the practical components—equipment, instruction, and location—so that you can use logistical planning to set yourself up for success.

It's Not Just Physical—Mindful Fitness

Lecture 6

We've spent the last few lectures talking about things you can do to improve your health, such as getting more sleep, eating a healthy diet, and of course, exercising. But when we talk about fitness, it's important to think holistically. All those health-promoting practices are components of a larger picture. We are more than our bodies, and health is more than just good food and regular exercise. Along with the physical, we need to consider the cognitive, psychological, social, and spiritual components of our lives. In this lecture, we will focus on mindfulness fitness practices—types of exercise intended to help you feel the sense of unity between your mind and body.

An Introduction to Mindful Fitness

- Mindful fitness practices use a combination of physical and psychological exercise to cultivate both physical and psychological health and wellness. These programs include yoga, Tai Chi, and the martial arts, all of which combine physical exercise with deliberate breathing and mental training.
- Mindful fitness practices provide physical fitness benefits, such as strength, flexibility, and balance training, but they also offer benefits beyond physical exercise. The research literature shows that mindfulness practices are particularly well suited to supporting mental health and well-being, improving self-esteem, reducing depression and anxiety, and even reducing perceptions of pain. Mindfulness practices may be particularly appropriate for older adults, because they offer gentle, well-rounded fitness programs with a focus on balance and overall strength and a low risk for injury.
- Mindfulness practices are part of the broad spectrum of holistic approaches to health known as complementary and alternative medicine (CAM). One cross-sectional study found that 63% of

older adults had used at least one CAM modality, with an average of three CAM approaches per person. Many people use CAM therapies to support their health and wellness: 34% reported using CAM for anxiety; 27%, for depression; 19%, for chronic pain; 18%, for heart diseases; 13%, for insomnia; and 12%, for fatigue.

- Because they are inherently gentle, these low-risk exercise programs are appropriate for older adults. There is also some benefit to coming to mindfulness practices when you are older and bring with you a desire to be more introspective.
- Mindful fitness programs offer a low-threat way to promote health. As a culture, we may be uncomfortable talking about stress or anxiety, but we can go to a yoga class without stigma and learn breathing and focusing techniques that help us deal with these issues. Mindful practices also support our sense of being self-sufficient and independent; they allow us to feel in control of our own care and well-being.
- Some people may be hesitant about mindful fitness because of their own religious or philosophical beliefs, but mindfulness practices can actually enhance your spirituality, allowing you to be more present—more fully in the moment—during your religious practice.
- Not all mindfulness classes are suited to everyone; different instructors have different approaches to teaching these practices. Feel free to try out various classes to find the approach and the instructor that make you most comfortable.

Yoga

- The Sanskrit word *yoga* means “union.” Yoga brings together physical and psychological exercise to cultivate both physical and psychological health and wellness. It is an exercise practice that is built on a cohesive philosophy and is now supported by solid empirical research. You could do psychological skills training and physical exercise as separate and isolated components, but with

yoga, you have the opportunity to train both aspects of yourself in an integrated way.

- Although yoga has its background and history in the Indian tradition and the Hindu religion, yoga itself is a pragmatic and adaptable practice. At its core, yoga is a practice intended to bring about unity of the mind and body. Through physical exercise, focused attention, and deliberate breathing, you can enhance the sense of connection between your internal and external self.
- Yoga is uniquely effective in helping you manage and cope with stress. Over time, a consistent yoga practice reduces your reactivity to stress, both physiologically and psychologically. The common ways we physically manifest stress—rapid breathing, elevated heart rate, and muscular tension—are all improved through regular yoga practice. Yoga also provides a set of tools that you can use in response to stressful situations. When you practice yoga, you learn self-soothing skills that you can rely on as needed in stressful situations.
- These two stress-reducing effects of yoga practice can lead to powerful outcomes. Magnetic resonance imaging (MRI) studies show that practicing yoga can change the structure of the brain, in particular, the amygdala, a part of the brain associated with stress. Yoga practice can also change your hormone profile and how your body processes the physiological effects of stress; improve lung function; reduce symptoms of allergies; and positively affect blood-glucose levels, cholesterol levels, and overall cardiovascular risk profile.

Tai Chi and Qigong

- Tai Chi and Qigong are traditional forms of mindful exercise from China. *Qi* is the Chinese word for “energy” or “life force,” and Chinese traditional medicine believes that *qi* flows through energy pathways in the body called meridians. Blocked or unbalanced *qi* can lead to illness or injury. The practices of Tai Chi and Qigong



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The deliberate movements of Tai Chi are often practiced outside and can resemble beautiful choreography.

are intended to support healthy energy flow and, thus, to promote overall health and well-being.

- Also foundational to the philosophy of Tai Chi and Qigong is the idea of yin and yang, or opposites. The philosophical belief is that nature consists of opposing forces—yin and yang—in appropriate balance. Tai Chi and Qigong provide balanced yet opposite movements (open and closed, hard and soft) to support the appropriate equilibrium of yin and yang in the body.
- Tai Chi and Qigong are distinct practices but are often practiced together. Tai Chi uses a specific series of movements, done as a meditation, to move *qi* in the body. Qigong includes many different exercises that may be done in different sequences and is often considered a foundational exercise before individuals begin practicing the Tai Chi sequence. Movement is never forced and muscles stay relaxed. The joints are neither fully extended nor fully

Karate Punch

Assume a wide stance, with your feet apart and firmly planted and your knees gently bent. Your legs should feel strong and solid, connecting you to the earth. Make fists with your hands, curling your fingers in and closing your thumbs on top, rather than tucked inside. Your shoulders should be rolled down and back, with your elbows bent and arms gently at your side.

Take a deep inhalation and punch your right arm out—straight and strong—with a sharp, loud exhalation through the mouth. That strong exhalation is called the *kiai*, and it literally means “shout” or “spirit” in Japanese. It adds force and power to your movement.

Take five punches on each side. Punch strong and follow through, keeping your squat steady and your posture solid. Return the opposite arm in toward your side, almost as if you are protecting your side. Exhale as you bring your arms down to your sides, then step your feet back together.

bent, and the connective tissues are not stretched. The exercises can be adapted to any fitness level.

- The movements of Tai Chi and Qigong are different from other forms of exercise because they are usually circular, as if the practitioner is moving through water. Tai Chi has often been called meditation in motion because it is a form of meditative practice, of focusing the mind and awareness through movement.
- Both Tai Chi and Qigong are beneficial for helping to maintain or improve posture and balance. These exercises are gentle on the joints and helpful in managing chronic pain and maintaining flexibility. Tai Chi and Qigong also improve strength, may promote bone density, reduce the risk for heart disease and lower blood pressure by reducing stress, and promote quality and duration of

sleep. Both practices may be beneficial for those recovering from a stroke or individuals who have Parkinson's disease or arthritis.

Martial Arts

- A systematic research review conducted by the Department of Sports Medicine at Chengdu Sport University in China found that martial arts may promote health and wellness and that more research studies are warranted to validate those effects.
- Practicing martial arts gives you a wonderful opportunity to find your inner strength, especially if you are going through a tough time in life or have always been quiet and introverted. Above all, the martial arts emphasize internal control, focus, and deliberate awareness. The practice of martial arts is truly an active, moving meditation.
- Again, it's important to find the right instructor for your learning style, age, and health. Some instructors require sparring, while others allow you to learn the *katas*, which are patterns or forms of movement, without having to make contact with others.

Meditation

- Meditation is focused awareness, the deliberate training of the mind to reduce the ongoing jumble of thoughts that we live with most of the time. Meditation is always a part of mindfulness fitness practices, and if you attend a yoga, Tai Chi, or martial arts class, you will spend some time practicing meditation. You can also practice meditation on its own.
- According to the renowned meditation teacher Jack Kornfield, the mind is like a puppy you are trying to house train; you put down paper, and the puppy wanders off and goes to the bathroom in the corner. But you continue to pick the puppy up gently and bring it back to the paper. The mind is similar; you focus your awareness, but your mind wanders off somewhere else. Gently, you bring it back. Through that process—the gentle but consistent retuning

to deliberate focus—you can learn to control your mind and your thoughts.

- Learning control of your mind has powerful outcomes. Psychologically, meditation helps you gain perspective, manage stress, increase your sense of self-awareness, learn to focus on the present, and reduce negative emotions. It can also have profound impacts on physical health. Research suggests that meditation can help with allergies, asthma, heart disease and high blood pressure, and even cancer, as well as conditions that involve a sense of self-control, such as binge eating or substance abuse.
- As we age, we often begin to feel a divergence between a mind that remains young and a body that is beginning to show some effects of age. Both meditation and mindfulness practices can help us stay connected to our bodies and compassionately accept the changes we experience with age.

Suggested Reading

Center for Mindfulness, <http://www.umassmed.edu/content.aspx?id=41254>.

Kabat-Zinn, *Mindfulness for Beginners*.

Kornfield, *The Inner Art of Meditation* (audio CD).

———, <http://www.jackkornfield.com>.

Muesse, *Practicing Mindfulness*.

Activities and Assignments

Sit down by yourself in a quiet space with your journal and a pen. Set a timer for 15 minutes and let your mind wander. Don't try to think of anything in particular or focus on a certain topic. Jot down a few key words for each thought you have. Don't judge your thoughts, and don't try to direct them anywhere in particular; just become aware of them and record them as they come. Write down a few words to capture the stream of consciousness. When you're done, read over what you've written. Your thoughts likely jumped

around quickly from topic to topic—a task to complete at work, a fight with your spouse, something you need to buy at the grocery store, the windows that need to be cleaned, where you want to go on your vacation this year. The point of the exercise is to be aware of how much our minds move.

Pick a day and set a timer on your phone, your computer, or your watch to go off every hour during the day. In your journal, make a chart with four columns like the one shown below. Whenever your alarm goes off, write down one sentence to indicate what you're thinking about in the appropriate column—past, present, or future. Again, don't judge or try to direct your thoughts; just be aware of them and jot them down. At the end of the day, look at the overall picture and assess how much time you spent in the past, how much time you spent in the future, and probably how little time you spent in the present.

Time of Day	Past	Present	Future
7 a.m.			
8 a.m.			
9 a.m.			
...			

Motivation—Goals and Willpower

Lecture 7

In Lecture 2, we focused on motivation, discussing the transtheoretical model and stages-of-change theory. In this lecture, we return to the topic of motivation again because it is vital to changing the way you live. You can't reap the benefits of exercise unless you actually do it. Probably the most important part of a successful exercise plan is figuring out your motivations and the strategies that will keep you motivated in the long run. In this lecture, we'll talk about SMART goals, that is, goals that are specific, measurable, attainable, realistic, and time-specific.

SMART Goals

- A goal is the ultimate aim toward which you direct effort. Well-thought-out goals motivate behavioral change; they define the destination and provide a road map for how to get there. SMART goals are those that are specific, measurable, attainable, realistic, and time-specific.
- To be achievable, a goal must be specific; it must include a definition of success. You can't just say, "I want to lose weight," because you won't know whether or not you've succeeded. A better, more specific goal is "I want to lose 10 pounds."
- In addition to being specific, a goal must also be measurable. You need to quantify the overall goal and the subcomponents you need to achieve to meet the goal.
- Goals must also be attainable for you. It's better to start small and move forward to greater goals with a feeling of success than to get discouraged because you failed to accomplish an unrealistic goal. Instead of setting a goal to run a marathon, decide that you will walk for 30 minutes 5 days a week. Once that becomes a habit, start jogging 3 days a week. By working through the smaller goals, you may eventually be able to achieve greater aspirations.

- A related quality of SMART goals is realism. Don't set yourself up for failure. For example, if you're short and naturally curvy, you may never have the figure of a supermodel, but you can still work out regularly to be fit and healthy. Realistic goals may focus more on the process ("I'll do resistance training for 20 minutes 3 days a week") than outcome ("I will fit into a size 4"). In setting realistic goals, also think about contingency plans. Can you do an alternative exercise if the weather prohibits you from walking outside?
- Finally, a SMART goal is time-specific. If you are setting an outcome-based goal, such as losing 10 pounds, establish a realistic time frame, such as 6 weeks, losing 1 to 2 pounds per week. If you are setting a process goal, choose a specific amount of time for which you will commit to the process, optimally, at least 6 weeks. Then, evaluate your progress and determine whether you should continue with the same goal or increase the requirements of the goal.
- In addition to the SMART components, you should also make sure to frame your goal positively. "I will eat oatmeal and berries for breakfast" is a good goal. "I will not eat donuts for breakfast" will just make you think about eating donuts. You should also write your goals down and look at them regularly and share your goals with a supportive friend or family member.

Willpower

- Though we like to think of ourselves as independent, autonomous people, the reality is that our environment affects us more than we know. And if your environment doesn't set you up for success, then you're relying on willpower—a limited resource—to push through in spite of the obstacles.
- One study at Florida State University showed that students who were forced to exercise their willpower to avoid temptation gave up on tasks much sooner than other students who had not been tempted. We seem to have limited quantities of willpower to work with, and every time we use our self-control, we draw from that



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If you use your willpower to resist eating cake at an office birthday party, you may find that you've lost the willpower to work out at the gym on the way home.

resource. Further, when willpower is reduced through a distraction task, people are more likely to do things they would otherwise resist doing and to make irrational decisions.

- According to Stanford psychologist Kelly McGonigal, the biology of stress and the biology of willpower are incompatible. In other words, the more you suffer from chronic stress, the less willpower you have.
- Willpower is like a muscle, and you can support its development through practice, stress management, and sufficient sleep. Research has shown that when college students are given tasks that require self-control, such as tracking what they eat or using their weaker hands for the computer mouse, after a few weeks, they had greater willpower overall. Mindfulness practices can help in developing willpower because they are specifically focused on training the mind toward self-control.

Supportive Environments

- Set up your environment so that you aren't as reliant on willpower to make good decisions about diet and exercise. If you set up your environment in a supportive way, then you will have your willpower muscle ready and available in the situations where you really need its strength.
- For instance, if you live near a park or other open, natural space, you will be more physically active. If you have a window in your office that allows you to see green, natural space, you are less likely to experience work stress. If there is a supermarket in your neighborhood, you are more likely to eat at least five servings of fruits and vegetables each day. These environmental factors and others can have a significant impact on health-promoting decisions.
- Modern conveniences have eliminated a number of small opportunities to incorporate movement in everyday activities. Be aware of this fact and look for ways to bring that movement back into your environment.
 - Use a push lawnmower instead of a riding lawnmower or, even better, use a manual lawnmower and really get some exercise.
 - Ride a bike or walk when you run errands nearby, instead of driving your car.
 - Get in the habit of taking the stairs instead of the elevator or escalator.
 - Grate carrots or mix cookie batter by hand instead of using the food processor or mixer.
- Our social environments also influence our fitness and health-promoting decisions. For example, restaurants are colorful, well lit, and decorated in such a way as to encourage us to linger and eat more. Even experts can be taken in by the atmosphere in a restaurant; in one study, when trained dieticians were asked to

estimate the nutrition information for five common restaurant meals, they underestimated calories by 37% and fat by 49%.

- You may not be able to move to a neighborhood with a local grocery store, tree-lined streets with sidewalks, and a park on every block, but you can still make small, tangible differences in your daily life through the way you structure your personal space.
 - For instance, you need to get sufficient sleep to manage stress, feel rested, and make good choices. If you have a TV or computer in your bedroom, move it to another room. Research shows that having an electronic device in your bedroom reduces both the quantity and quality of your sleep. If you're tired, you will have fewer reserves in your willpower muscle and you may make poor decisions.
 - Currently, Americans eat about 32% of our calories outside the home, but research shows that if you eat more meals at home, you are more likely to eat healthfully. At home, use your large dinner plates for salad and your salad plates for pasta or rice. This strategy gives you more appropriate portion sizes when you fill your plate.
 - You can also eat healthier by using fresh, whole foods and fewer packaged, processed foods. This approach instantly reduces the amount of hidden fat, sugar, and sodium you're consuming. You may think that you don't have time to cook fresh, whole food, but research from UCLA reports that cooking from scratch actually adds only about 10 extra minutes to meal preparation!
 - In your office, try bringing in a few potted plants and a natural-spectrum light if you don't have a window. You might also bring in some hand weights and stretch bands and do 5 or 10 minutes of strength training or stretching every hour or two. Pack your lunch instead of going out for fast food, and if the weather permits, take a short walk and eat outside.

- Put your walking shoes and your dog's leash by the front door to encourage you to go for a walk instead of just putting the dog in the backyard.
- Chop up fresh vegetables and prepare containers of salad on the weekends so you have some readily available snacks to grab when you're hungry during the week.
- Reconfiguring your environment for a healthier lifestyle may mean making many small changes, but doing so makes it much easier for you to make good choices—without relying on your limited willpower.

Suggested Reading

Baumeister and Tierney, *Willpower*.

McGonigal, *The Willpower Instinct*.

Activities and Assignments

Think creatively about how you can improve your environment to promote fitness. Consider physical changes in your home, modifications to your work environment or schedule, your commute, and your leisure activities, as well as your clothes, the food you keep in your house, lighting, and so on. Look for small improvements you can make in all aspects of your life to promote fitness and good health decisions.

Review your perspective on healthy aging from Lecture 1. Identify at least two components that are priorities. How can you make small, tangible decisions now to support those two components of healthy aging?

Set two SMART goals that connect environmental changes to promote your view of healthy aging. Remember, your goals should be specific, measurable, attainable, realistic, and time-specific.

Friends, Fitness, and Social Support

Lecture 8

Consider how many times in the past week you've combined social interactions with calorie consumption—happy hour with colleagues, dinner out with your spouse, or coffee and donuts with a friend. It seems natural and comfortable to share food and drinks with our family and friends, but we rarely share fitness activities with them. In childhood, fitness is often an opportunity for social interaction; children play outdoor games with their friends, ride bikes, or go swimming, but at some point, as adults, our social activities come to focus on eating and drinking. In this lecture, we'll see how social relationships can support, promote, and even inspire health and fitness and how fitness activities can support and cultivate friendships.

Benefits of Social Relationships

- Having strong social relationships is important for overall health. In fact, in terms of risk for premature death, having a low level of social interaction is more harmful than not exercising, twice as harmful as being obese, and as harmful as smoking 15 cigarettes a day or being an alcoholic. When we have connections with other people, we have a greater sense of purpose, and that can help us feel motivated to take better care of ourselves and to take fewer health risks.
- People who report that they are lonely report the same number of stressful life events as non-lonely people, but they report higher levels of chronic stress and indicate more feelings of helplessness and threat. Lonely people also experience loneliness physiologically; they have higher concentrations of stress hormones in their urine and sleep more poorly at night.
- If you feel lonely or isolated, you already know that situation has a negative impact on your life. If you're the primary caretaker for a loved one, you may feel so pressed for time that you don't have

space or energy to cultivate relationships. But you don't have to become a social butterfly; what you need is just a few close friends you can count on.

Social Factors in Weight Gain and Loss

- Researchers have long noted that among children, obese students tend to be in the same social circles as other obese students.
 - A longitudinal study of high school students reported that some of this effect may be the result of a tendency to bond with people perceived as similar to oneself, but some of it is due to influence.
 - When students who were borderline overweight were friends with students who were active and lean, they were 40% more likely to decrease their BMI over the course of a school year. In contrast, if they were friends with students who were obese, they were 56% more likely to increase their BMI in the same year. The friends influenced such decisions as watching TV versus playing active sports.
- Research with adults also supports the evidence that weight gain is socially contagious. A large-scale analysis of more than 12,000 adults over 32 years tracked the relationship between obesity and social relationships. Interestingly, friends are more powerful in this regard than family. If your spouse becomes obese, your chance of obesity goes up by 37%. If your sibling becomes obese, your likelihood goes up by 40%. But if your friend becomes obese, your likelihood goes up by 57%.
- On the positive side, research has also shown that when one person loses weight, his or her friends and family are more likely to lose weight, too. In a statewide initiative in Rhode Island, a weight-loss campaign found that a team approach led to better outcomes. People who lost at least 5% of their initial body weight tended to be on the same team, and high levels of teammate social influence increased odds of clinically significant weight loss by 20%.

- One caveat with regard to social networks and weight-loss outcomes is this: If you are the first to lose weight or if your weight loss may change the social order, friends and family may unconsciously sabotage your weight-loss efforts. You may even unconsciously sabotage your own weight-loss efforts to return social relationships to “normal.” In one large survey, 24,000 overweight women reported that losing weight created problems in their relationships that regaining the weight resolved.
 - If your friends and family are sabotaging your weight-loss efforts, they probably don’t even realize they’re doing it. And even if they want to help, they might not know how, or they might have their own beliefs that make it hard for them to understand what you’re doing.
 - At the Duke University Diet and Fitness Center, after a 3-week in-patient program, participants write a “Dear Supporter” letter to take home to friends and family that communicates the help needed. You might think about using a similar approach to express to your friends and family how they can help with your weight-loss efforts.
- As we’ve said, it can be challenging to make a conscious decision in the right direction because there are unconscious clues in the environment that affect our eating decisions. We all usually think that we’re independent individuals who are capable of making good decisions, but experimental studies show that we’re not as good at understanding unconscious motivation as we think we are.
 - In one study, individuals walking through a lobby were randomly stopped and asked to complete a survey. The surveys had photographs of an overweight individual, a normal-weight individual, and a lamp.
 - After completing the survey, subjects were told they could help themselves to a bowl of candy. Those who were exposed to the picture of the overweight individual took an average of 30% more candy!

- Interestingly, research also shows that when we eat with others, we match our portion size to social norms. We may eat more or less than we normally would based on what others are eating. Researchers suggest that if you tend to eat small portions, you should eat meals by yourself, because the social norms in group eating may cause you to choose larger portions. If you tend to overeat, you should eat meals with others, because the social norms may help you to choose smaller portion amounts.

Social Factors in Fitness Behaviors

- Social norms are powerful forms of control over human behavior. If you're trying to incorporate health-promoting behaviors into your life, the key is to determine how to use your social environment to support those behaviors.
- For instance, 90% of exercise program participants prefer to exercise with a partner or group than to exercise alone. And self-determination theory holds that one of the primary motivators for human behavior is connectedness. If you establish a fitness program that helps you feel connected to others, you are more likely to stick with it.
- If your fitness program helps foster your sense of connection, then you're getting multiple benefits: You feel better, you get physical health benefits, and the program supports your relationships. In addition, the sense of commitment to another person may keep you going even when your motivation lags. This holds true in families, as well. Research studies have found that maternal and paternal exercise levels can predict a child's activity levels.
- Though marriage is often shown to increase health and promote longevity, the impact of marriage may depend on the health of your spouse. If your spouse has poor health, you are more likely to smoke cigarettes and less likely to exercise. In contrast, if you are married and join a fitness program by yourself, the likelihood that you will drop out is 43%, but if you join with your spouse, the likelihood you will drop out is only 6.3%!

Fostering Social Relationships

- Ironically, just as we're learning how important our social networks are for health, we find ourselves increasingly isolated. From 1985 to 2004, the mean number of people with whom Americans say they can discuss important matters dropped from 2.94 to 2.08. The number of people who say they have no one to discuss important matters with more than doubled in the same two decades, up to 25%.
- Researchers have different theories about why our social networks are becoming smaller and more fragile. In the modern world, people move more often, which breaks up the social networks into which we were born. Many of us also work more, which means that more of our waking hours are spent either at work or at home. Even when we're not technically working, many of us still monitor work on mobile devices.
- It's important to take a close look at opportunities for interaction in your own life. Is your schedule packed with paid work, caretaking of children or parents, and household chores? Are you on an electronic leash even when you're away from work? If you add in necessary daily tasks, such as sleeping, showering, and eating, you'll find you don't have much time left for social interactions.
 - Further, you may be spending the little leisure time you have online. Survey results show that the average American spends 2 hours a day on social networking and that those who regularly use social networking sites spend 3.8 hours a day making virtual connections.



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Parents may find that their teenagers are inclined to open up more if they're involved in an activity rather than being forced to talk over the dinner table.

- Although those virtual connections can lead to broader social networks, deeper relationships still require face-to-face interaction.
- Many of us are saving money for our retirement years, but are we also taking time to build and nurture the relationships that we will need to have a happy retirement? If all of your friends are at work, what happens if you lose your job, become ill and have to take time off, or retire? Of course, positive relationships at work or online matter, but it's also important to build a social network in the real world and outside of work for true fitness and wellness.
- It's more difficult to make friends as we get older; people have obligations that make building relationships challenging. You have to be as deliberate about cultivating relationships as you are about cultivating other aspects of your health and wellness. Make an effort to find opportunities to connect with other people. Fill your life with activities you enjoy, causes you believe in, and places you like to be so that you'll have the chance to meet people who have similar interests.
- Relationships and social norms have a powerful impact on health and fitness, and there are many ways to put that power to good use. Take your parents out for a walk when you visit them; instead of dinner and a movie with your spouse, opt for a dance class; go outside with your children or play an active video game with them; meet your friends for a golf game; or take a family vacation at a national park. Think about how you can build relationships through fitness—and how you can get fit through relationships.

Suggested Reading

Carrol and Kimata, *Partner Yoga*.

Christakis and Fowler, *Connected*.

Kasl, *If the Buddha Dated*.

———, *If the Buddha Married*.

Paul, *The Friendship Crisis*.

Richo, *How to Be an Adult in Relationships*.

Activities and Assignments

Assess the support of your friends and family. Do you have friends and family who could be considered health-promoters? If so, how can you better connect with them and ask for their support? Do you have friends who may be unconsciously sabotaging your health and well-being? If so, what can you say to them to help them understand why you are making these changes, and how can you help reduce their sense of being threatened? How can you adapt the relationship to improve the friendship while you are improving your health?

Assess the degree to which your social network is connected to work. How can you consciously expand your social network beyond the workplace?

Think about other social opportunities you could seek out. In what ways can you connect the ones you love with the healthy lifestyle you are working to build?

Accepting a New Reality

Lecture 9

A plan for healthy aging requires you to be deliberate about exercise and healthy eating, but the point is to exercise and eat healthfully so that you are healthy enough to live a full, engaging life. When fitness and exercise become your central focus—when you live to exercise and eat healthfully—then you are no longer aging healthfully. If you find that the activities that should promote health are beginning to consume your life, you may have a problem. In this lecture, we will discuss eating disorders, exercise addiction, and overtraining. Our goal is to become aware of the potential pitfalls so that you can keep your life in balance.

Scope and Types of Eating Disorders

- When we think about anorexia, we usually picture an already thin teenage girl starving herself, and it's true that anorexia overwhelmingly occurs among adolescent girls. But from 2001 to 2010, the rate of eating disorders among middle-aged adults increased by 42%. A study of adults between the ages of 55 and 64 showed similar increases.
 - By official counts, at least 11% of older women—more than 1 in 10—suffer from an eating disorder.
 - Far more have subclinical problems with body dissatisfaction and live their lives structured around diet and exercise. In a 2010 study by the Oregon Health and Science University, women between the ages of 65 and 80 were just as likely as young adult women to express concerns about body shape or indicate that they felt fat.
- Bulimia is the combination of bingeing and purging. An individual with bulimia may consume a large amount of food in a short time and then compensate by purging. Purging can take many forms, including forced vomiting, use of laxatives and/or diuretics,

excessive exercise, and fasting. Individuals with bulimia may or may not be underweight.

- Purging via exercise can be particularly sneaky, because it can start out as a healthy practice. Older men in particular may be prone to compulsive exercise.
- Bulimia may be hard for others to notice because individuals with bulimia are often at a normal weight or even slightly overweight, rather than excessively thin. No one suspects an eating disorder.
- Individuals who have anorexia severely limit the quantity and often the types of food they eat. These individuals may be extremely thin and are preoccupied with their weight, often seeing themselves as heavier than they are. Older women with anorexia usually are not emaciated and, in fact, may be praised by their doctors for keeping their weight down.
 - Anorexia can be particularly challenging in older adults because health conditions may require an individual to restrict or limit food consumption. For instance, an individual with high cholesterol or type II diabetes should limit consumption of sugars, refined flours, or saturated fat.
 - Such food limitations can start for health-promoting reasons but end up being so extreme that they affect the individual's quality of life. An important consideration is whether or not the individual is maintaining a healthy weight and experiencing overall good health.
- An individual who suffers from a binge-eating disorder regularly eats a large amount of food in a short period of time, usually in secret and often with feelings of guilt or shame. In contrast to individuals with bulimia, individuals with binge-eating disorder don't follow the binge with a purge. They are often overweight or obese; they may even be in denial about how many calories they consume and the source of their weight.

- Eating and body image disorders can also manifest themselves in other ways, such as a preoccupation with plastic surgery. Men with muscle dysmorphia may think that they are too small or skinny, regardless of how much muscle mass they actually have. They may focus as obsessively on getting bigger as women with anorexia focus on getting smaller.

Causes of Eating Disorders

- In a small number of cases, eating disorders occur late in life as the result of a stressor or a medical condition. For instance, if an individual loses weight because of an illness, particularly if she has previously struggled with her weight, she may receive compliments about her new, slender appearance. This can lead to a focus on food restriction after recovery. Medical conditions may also require individuals to go on more restricted diets; they may then become preoccupied with controlling diet as a way of controlling their health.
- In most cases, those who suffer from eating disorders later in life also suffered from them in adolescence. Sometimes, the severity increases in older adults, bringing new and more difficult symptoms. Ninety-four percent of middle-aged women with anorexia had an eating disorder when they were younger.
- Common stressors that may lead to the development or recurrence of an eating disorder include difficulty adjusting to changes in the body and perceived level of attractiveness; the death of a loved one, which can lead to feelings of lack



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One study found that most models and actresses are 20% below ideal body weight, yet they strongly influence our perceptions of beauty.

of control; and divorce. Of course, societal pressure to be thin also influences all of us, including older adults.

- An article in the *Journal of Nutrition for the Elderly* reported that advertising targeted at older adults focuses on anti-aging and health-promoting products and that these advertisements can have a negative impact on body image.
- In one study of women aged 60 to 70, 45% reported that their self-esteem depended on their weight and shape, and more than 60% reported that they had only moderate or low satisfaction with their weight and shape.
- If we have unrealistic expectations about how we should look as we age, we may become vulnerable to unhealthy patterns of diet and exercise.
- Sometimes, the disconnect between how we feel and how we look can cause a problem. A 2009 Pew Research Center study found that 60% of people over age 65 feel younger than they are, but the mirror may not reflect the youth they still feel. If you've always been fit and healthy, those changes in the mirror may be particularly hard to take.
- For both new and recurring eating disorders, stressors associated with caretaking can accidentally trigger an eating disorder. Those serving as primary caretakers for a loved one may not have the time to eat or take care of themselves properly; this situation may eventually lead to a formal eating disorder.

Getting Help

- Older adults often struggle with shame when they have an eating disorder. They believe that they should know better or be able to overcome the disorder on their own. This shame can make treatment challenging. Many treatment centers now separate patients over and under 30 to make adults feel more comfortable talking about the unique issues of eating disorders in adulthood.

- If you have any concerns about your own eating behaviors or those of a loved one, it's important to find a therapist or center that has experience working with older adults in a setting that is respectful of life experience and age.
- Treatment often includes cognitive behavioral therapy, which will help address unrealistic thoughts about food and appearance. Treatment may also include work with a dietician or nutritional counselor to help individuals learn or relearn the components of a healthy diet and address nutritional imbalances brought about by disordered eating.

Exercise Addiction

- Exercise addiction is a psychological or physiological dependence on a regular regimen of exercise that is characterized by withdrawal symptoms after 24 to 36 hours without exercise. It typically includes both psychological and physiological factors.
- In contrast to a healthy commitment to exercise, exercise addiction leads individuals to structure their lives around fitness. They may continue to exercise even when injured or at the expense of other obligations. When an exercise-addicted person can't exercise, he or she may feel withdrawal symptoms, such as anxiety, muscle twitching, and irritability.
- Exercise addiction may be connected to a specific form of exercise that the individual views as best promoting health and fitness. It may be more likely to occur with solitary fitness activities, such as running, biking, and swimming. Moving to more social forms of fitness can help overcome the isolating effects of exercise addiction.
- Some researchers believe that exercise addiction is related to brain chemistry. Studies have shown, for example, that extreme exercise in rats changes their levels of dopamine, a neurotransmitter that is related to mood in both rats and humans.

- Researchers estimate that exercise addiction occurs in about 3% of the general population, but one study of regular participants at a fitness club found that 42% of the individuals at the club met the criteria for exercise addiction. It is also likely to co-occur with an eating disorder; as many as 48% of individuals with an eating disorder also meet the criteria for exercise addiction.

Overtraining

- Overtraining occurs when an individual trains beyond the body's capacity to rest and recover, which may lead to such symptoms as fatigue, achy muscles, joint pain, insomnia, headaches, and more.
- Research shows that regular exercise boosts the immune system, but high-intensity or excessive exercise may actually decrease immunity. One study found that 90 minutes of high-intensity exercise can make you more susceptible to illness for 72 hours after the exercise. Other research shows that endurance athletes are at increased risk for upper respiratory tract infections, both during heavy training and during the 1 to 2 weeks after racing.
- To prevent overtraining, you need to be realistic in setting your goals to prevent injury and allot sufficient time for rest and recovery. In addition, the goals you set now may need to be modified as you get older or if you experience an illness or injury.

Realistic Expectations

- Even if you're not suffering from an eating disorder, the physical changes of aging can lower your confidence and self-esteem. If there are aspects of your appearance that you've always identified as an important part of you, it can be hard to figure out who you are as your appearance changes. If you've worked hard to keep your body trim and in shape, you may notice with frustration that your face shows more age than the faces of your plumper peers.
- To combat negative feelings, think about what really matters to you. It's fine to have goals related to your appearance, but make

sure they are realistic and attainable. Focus on looking the best you can now so that you can enjoy who you are and how you look.

- Remember that your fitness activities should support and improve your life. Your life should not be exclusively about supporting and improving your fitness activities. The goal isn't fitness for the sake of fitness but fitness that supports holistic well-being.

Suggested Reading

Maine, *The Body Myth*.

Powers and Thompson, *The Exercise Balance*.

Activities and Assignments

Find a quiet place to do some honest soul-searching. In your journal, reflect on the following questions: Are you doing anything in the pursuit of healthiness that has become unhealthy? Do you have any current beliefs about your fitness, your looks, or your body that are affecting your sense of self-esteem and wellness? Think through what you believe, feel, or are currently doing that is promoting dysfunction instead of wellness and brainstorm how you could do something different, new, or creative to promote wellness.

Take your journal with you to a mirror in a well-lit room, preferably with natural light. Look at yourself in the mirror. Write in your journal at least five things that you like about your body (strengths, abilities, and so on) and five things that you like about your appearance. Use the nonjudgmental framework we discussed in our lecture on mindfulness; look at yourself with loving kindness. If you find that negative, critical, or judgmental thoughts wander in, push them aside and let them go.

Challenges—Illness and Chronic Pain

Lecture 10

Your response to illness, disability, or a chronic health condition plays a large part in determining the quality of the rest of your life. Your ability to maintain or rebuild your physical independence requires you to be motivated to work through physical activity even when it's difficult. Recovering from illness or living with chronic pain calls for a multifaceted approach to self-care, the right medical support, and social support from friends and family. But at the same time that you need to accept help from your loved ones, in the end, you must take responsibility to work through discomforts so that you can rebuild your health and strength.

Chronic Pain

- Acute pain comes on suddenly, is sharp, and usually indicates an injury. This kind of pain occurs when you break a bone, strain a muscle, have dental work or surgery, or have an illness. Acute pain recedes when the underlying condition has been healed.
- Chronic pain occurs through a variety of conditions, such as arthritis, fibromyalgia, or Parkinson's disease. It may be a consequence of complications in advanced diabetes or such illnesses as shingles. As we get older, the body sometimes heals more slowly, and the acute pain of surgery can lead to chronic pain in the surgical area—a shoulder or knee or hip that never feels quite right.
- Chronic pain affects more Americans than diabetes, heart disease, and cancer combined. Approximately 1 in 4 adults experiences chronic pain, with the most common types of chronic pain being low back pain (27%), severe headaches or migraines (15%), neck pain (15%), and facial ache or pain (4%).
- Chronic pain may affect quality of life and life satisfaction more than any other single factor. Sixty percent of chronic pain sufferers say that chronic pain reduces their enjoyment of life, 77% report

feelings of depression, and 86% report that pain affects their sleep. The effects of chronic pain can be long lasting. Some studies indicate that the average individual with chronic pain suffers for 7 years and more than 1/5 endure pain for more than 20 years.

- In the United States, we spend more than \$635 billion per year on chronic pain. Some of that money goes to pain medicine, including opiates, which can be addictive and can lead to increased sensitivity to pain.

Pain Management

- Physicians specializing in chronic pain recommend a holistic approach to pain management. With chronic pain, treatment focuses on education, social support, and guidance in developing an appropriate program of physical activity and exercise. The goal is to help patients live active lives in spite of the pain they experience.
- Pain is a multidimensional experience with four key aspects: (1) the physiological-sensory dimension—your body’s internal response to pain; (2) the affect dimension—your emotional response to pain; (3) the cognitive dimension—your attitudes and beliefs about pain; and (4) the behavioral dimension—the actions you take when pain occurs.
- Research indicates that a multidimensional approach to pain management is the most effective strategy for helping reduce pain and improve function. For instance, when individuals with chronic pain receive education about pain, including its components and psychological strategies for coping, they experience improved attitudes and even reduced pain.
 - Research has found that education programs that focus on understanding and coping strategies may actually be as effective as non-steroidal anti-inflammatories in reducing pain, without the potential side effects of pain medicine.
 - Social support—and education of family members or caregivers—can also be an important part of pain management.

- Physical activity may be one of the most effective treatments for managing chronic pain. Exercise can reduce the experience of chronic pain and improve functional independence. To improve the potential for positive outcomes in pain management via exercise, it's important to have flexible goals that can be adapted based on the level of pain experienced and changes in condition. You also need to pace yourself, be part of the decision-making process about your exercise program, and work with a trained professional who has experience in chronic pain and your specific condition.
- Chronic pain is often accompanied by chronic fatigue, and those who experience chronic pain may feel too tired to exercise. However, research shows that gentle forms of exercise, such as yoga or water aerobics, can improve energy and vigor and reduce pain and fatigue. In fact, inactivity may actually exacerbate the symptoms of chronic pain and fatigue.
- Mindfulness activities can be particularly helpful with chronic pain management. Such fitness practices as yoga and Tai Chi are usually very gentle; thus, you can participate with low risk of injury. These practices also help connect you to awareness of the present moment so that you can learn how to better manage the fear or anxiety associated with pain. Massage and acupuncture are complementary therapies that may also be helpful in coping with chronic pain.

Exercise Options

- If you are in the hospital or restricted to bed, you can still move to keep up your strength and keep yourself active. Moving when and how you can will keep you from putting too much pressure on any one spot of the body, preventing skin ulcers and bedsores. While you're on bed rest, collaborate with the physical and occupational therapists who want to help you get back on your feet as soon as possible.
 - Squeeze gripper balls to maintain your hand strength and do as much as you can for yourself, such as brushing your teeth, feeding yourself, and so on.

- Try gentle stretches of your neck, arms, and shoulders, and if it's safe for you to move your legs, spend a few minutes every hour pointing and flexing your toes. Alternate lifting your legs off the bed.
- Practice focused abdominal breathing to help keep your lungs clear and strong.
- If you're able to sit in a chair or wheelchair, you can do these same exercises and some additional ones. Do upper-body strengthening exercises using hand weights, resistance bands, or even water bottles or soup cans. If you have some use of your legs, you can do leg lifts or stretches with resistance bands. During physical therapy, you may be able to use bicycling or rowing machines to maintain or improve your endurance.
- If you are able to walk with the use of a walker or cane, it's important for you to stay as active as you can to either maintain the walking capacity you have, or, if possible, rebuild your strength for independent walking. You can do both the bed-based activities and chair-based exercise programs to build strength and flexibility. If possible, develop a program that allows you to walk outside safely.
- Physical therapy can help with many conditions, including chronic pain, arthritis, fractures or injuries, balance issues, recovery after surgery, recovery of skills after a stroke or heart attack, wound care, and joint injuries or pain. You should treat physical therapy as a vital part of your fitness program. If you are dealing with a chronic condition or disability, be sure to ask your doctor for a physical therapy referral.

Specific Health Conditions

- Research has demonstrated the beneficial effects of exercise both as a preventive strategy and as a therapeutic treatment for several illnesses, including arthritis, cancer, chronic obstructive pulmonary disease, hypertension, osteoporosis, stroke and heart attack, type II diabetes, and others. In short, across the board, exercise can



For those dealing with a chronic or acute health condition, a support group offers the opportunity to talk with others who are facing similar challenges.

improve both your health and your quality of life when you are dealing with a chronic condition.

- Research has consistently demonstrated that individuals who regularly exercise experience a lower risk rate for many cancers, including colon and breast cancer. Further, exercise appears to improve quality of life for individuals undergoing cancer treatment and to support life satisfaction and well-being in cancer survivors.
 - Cancer can be particularly challenging because patients have to deal with both the pain of the disorder and the pain of treatment. Exercise can help with both. For instance, many cancer therapies cause fatigue, but research shows that cancer patients who regularly do moderate exercise experience 40% to 50% less fatigue. Exercise also supports mood and helps treat the anxiety and depression that often accompany a cancer diagnosis.

- Exercise for those fighting cancer should be moderate; the body needs to focus on healing, not repairing itself after exhaustive exercise. Moderate exercise can have a major impact on quality of life during cancer treatment, and after treatment, exercise can help prevent recurrence.
- After a stroke or heart attack, rehabilitation serves three goals: (1) to regain the previous level of ability, (2) to prevent another cardiovascular event, and (3) to improve cardiovascular fitness.
 - Multiple controlled studies have shown that exercise after a stroke or heart attack can help individuals regain functional abilities and reduce the risk of future cardiovascular events.
 - Physical therapy to support rebuilding abilities for activities of daily living is important, as is aerobic exercise, in particular, walking. Strength, flexibility, and balance training are all key components of an exercise plan after a stroke or heart attack.

Safety Considerations

- Before beginning an exercise program, discuss your condition with your doctor to address concerns, contraindications, and precautions. Note that a primary-care physician may have minimal training in the use of exercise for symptom management; if necessary, ask for a referral to a qualified physical therapist or exercise physiologist.
- Work with a trained professional who has a solid background in exercise science and experience working with your condition. This professional will help you develop a program that is individualized to your health condition and current fitness level.
- Make sure you have the right equipment to support your health needs. For instance, if you're diabetic, you need to be particularly careful with your feet; get good walking shoes fitted by a podiatrist who works with diabetic patients. Talk with your exercise professional and your doctor about any logistical considerations or special equipment needs.

- Discuss chronic and acute pain with your doctor and exercise professional. If you have a chronic condition, you don't want to push yourself and make your condition worse. However, if you experience chronic pain, it is likely that you will have some discomfort as a result of exercise, at least initially. You will need to learn to distinguish an appropriate level of discomfort from a worrisome level of pain.
- Finally, discuss realistic expectations with your doctor and exercise professional. What can you reasonably expect from an exercise program, based on your condition? Will exercise prevent a decline in functionality? Could exercise potentially lead to an improvement in your symptoms? Exercise may not be able to undo a health condition you're dealing with, but it can always improve the quality of life you have.

Suggested Reading

American College of Sports Medicine, ed., *ACSM's Exercise Management for Persons with Chronic Diseases and Disabilities*.

Gardner-Nix and Kabat-Zinn, *The Mindfulness Solution to Pain*.

National Center on Health, Physical Activity, and Disability, www.nepad.org.

Activities and Assignments

Reflect on a chronic condition that you are currently dealing with. If you don't have anything, consider yourself lucky and do the reflective exercises hypothetically so that you're prepared for any future issues. First, think about what fears you have and what wants you are clinging to that may be limiting your ability to be active. Write down all the fears and desires that are holding you back.

Think about how you can address your fears positively and move your desires to the category of "hopeful possibilities."

Small Steps—A Path to Big Benefits

Lecture 11

As you start to add more physical activity into your life, you will begin to notice its benefits. You may be a little less tired in the morning and find it's easier to get out of bed. You may also notice that you are less irritable throughout the day. Your waistband may be a little looser or your briefcase may seem a little lighter. These small benefits add up and combine with other, more subtle improvements, of which you might not even be aware. In this lecture, we'll discuss the benefits of physical activity to provide you with one more source of motivation to keep moving.

Health Components for Long Life

- As we discussed in Lecture 1, there is no fountain of youth that will keep you from aging, but health-promoting decisions, such as incorporating regular physical activity into your life, will have a profound impact on the way you age and the degree of health and independence you maintain throughout your lifespan.
- According to research, the physiological factors most often associated with longevity and successful aging are low blood pressure; low BMI; low levels of fat around the waistline; preserved glucose tolerance; and a protective blood lipid profile, with low triglycerides, low LDL cholesterol, and high HDL cholesterol. The one activity that consistently helps to promote all these health characteristics is exercise.
- Based on all the positive health benefits of physical activity and exercise, the ACSM indicates that physical activity is a lifestyle factor that “discriminates between individuals who have and have not experienced successful aging.” In fact, cardiovascular fitness levels may actually predict your likelihood of becoming functionally dependent.

Physical Benefits of Activity

- If you have already begun to incorporate more physical activity into your life, one benefit you have likely already experienced is improved energy and stamina. It seems counterintuitive when you think you're too tired to exercise, but exercise actually increases energy and vigor and reduces fatigue.
- Exercise also supports weight management and reduces the risk of obesity. In particular, it reduces both overall weight and the fat mass that is more dangerous, such as the internal fat mass around the abdomen. It's also true that a leaner, fitter body burns more calories even when not exercising. For instance, some studies have found that 12 to 26 weeks of resistance training can increase metabolic rate by as much as 9%.
- Exercise improves your hormonal profile, decreasing levels of resting cortisol, a hormone that can increase as a result of stress and can be related to weight gain.
- Not only can exercise reduce blood pressure and cholesterol levels, but it also reduces overall risk for cardiovascular disease. People who exercise regularly are at a lower risk for stroke and heart attack. Even without dietary changes, exercise improves the body's ability to clear lipids and, in particular, triglycerides from circulation after a meal and to use fat as fuel during moderate-intensity exercise.
- The same is true for diabetes; regular exercise reduces the risk of developing type II diabetes and reduces the risk of serious complications for those who are diabetics. Benefits for diabetics, such as improved glycemic control and insulin action, occur even without dietary changes. Of course, when exercise and appropriate dietary changes are combined, outcomes improve dramatically.
- Exercise reduces the risk of osteoporosis and the risk of fractures. Low-intensity weight-bearing activities, such as walking, can have a modest effect on bone density at the hip and spine in postmenopausal women. Weight-bearing activities also counteract

age-related bone loss (0.5%–1% in sedentary postmenopausal women) that otherwise occurs. Higher-intensity weight-bearing activities, such as climbing stairs or brisk walking (practiced for at least 1 to 2 years), can have stronger impacts on bone density.

- Of course, exercise also helps increase strength. Regular resistance training can improve muscular strength at least 25% and as much as 100% or more, actually doubling your strength.
 - Muscle strength is the amount of force you can generate, while muscle power is the ability to generate as much force as possible as fast as possible. Aging often reduces muscular power even more than muscular strength. Fortunately, research has found that resistance training can lead to substantial increases in muscular power in older adults.
 - Muscular endurance, which is the capacity to use muscular strength repeatedly over time, is also important in maintaining functional independence as we get older. Muscular endurance affects your ability to walk independently, carry your own groceries, and so on. Your level of muscular endurance may determine your travel range in older adulthood.
- Individuals who exercise regularly are more able to cope with back pain, headaches, and other chronic pain conditions. As we discussed in the last lecture, exercise also offers many therapeutic benefits for treatment and management of health conditions, including coronary heart disease, hypertension, type II diabetes, elevated cholesterol, osteoporosis, osteoarthritis, and so on.

Psychological Benefits of Activity

- As we've seen, both improved physical fitness and regular participation in physical activity are associated with improved psychological health. For instance, exercise supports improved cognitive function. A single bout of exercise can improve cognitive performance; promote clearer thinking; and create immediate improvements in memory, reaction time, and attention.

- With regular exercise, you can improve your memory and perception and reduce the risk of cognitive impairment and dementia with aging. Exercise can even slow the onset of dementia; in contrast, becoming physically inactive can increase the risk and onset of cognitive decline.
- Over the last century, mortality rates have decreased and life expectancy has increased, but some researchers have questioned whether those later years provide quality of life. According to the Centers for Disease Control and Prevention, after age 65, the risk of developing Alzheimer’s doubles every 5 years. By age 85, between 25% and 50% of individuals will exhibit signs of Alzheimer’s. Even though dementia is common in older adults, it is not a normal part of the aging process. Healthy lifestyle choices and exercise can improve your chances of preventing dementia into older age.
- In fact, your fitness level can actually help predict your risk of cognitive decline. Your walking speed and whether or not you can walk 1 kilometer—about 0.6 miles—are associated with cognitive impairment. There are also associations between cognitive impairment and other routine physical measures, such as grip strength and whether or not you can stand up out of a chair.
- Aerobic exercise is key for psychological health, but even better outcomes occur when you combine aerobic exercise, resistance training, and flexibility training with mental exercise programs. The greatest effects on cognition seem to occur when exercise sessions exceed 30 minutes. Exercise seems to influence executive control in particular, such as planning, scheduling, working memory, and task coordination.
- Exercise is also associated with improved work efficiency, reduced absenteeism from work, and reduced work errors. Not only will you perform better at work if you exercise, but you might even earn more. One study found that exercising 3 times per week is correlated with a 6% to 10% increase in wages. In contrast, another study found that obese women earned 18% less than women of normal



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Research has found that regardless of how many negative or positive events you experience in a day, even a single session of exercise will improve your mood.

weight, and a third study found that overweight women have a total family income of 25% less than women of normal weight.

- Regular exercise helps to reduce stress, anxiety, anger, and depression and reduces the risk of developing clinical anxiety and depression. In fact, exercise can reduce symptoms of clinical depression in older adults by as much as 88%. Adults who are inactive are more likely to be depressed.
- Overall, the National Institute of Mental Health has concluded that physical fitness is positively associated with mental health and well-being, that exercise specifically helps reduce stress and anxiety, that exercise helps reduce mild to moderate depression, and that even in severe cases of clinical anxiety and depression, exercise is a useful adjunct to psychotherapy and other forms of clinical treatment.
- Nine weeks of regular exercise seems to be the point at which patients experience significant outcomes in reducing depression.

In fact, a longer-term exercise program can be as effective as psychotherapy or medication in treating depression. Long-term studies have shown that reductions in anxiety are not connected to physical changes in fitness levels. Even if you don't feel as if you're increasing your fitness or losing weight, exercise still has a positive impact on your mood.

- Other psychological benefits of regular exercise include improvement in life satisfaction, overall well-being, and quality of life; increased positive affect; improved body image; higher self-esteem; and a greater sense of self-efficacy, that is, your belief in your ability to accomplish specific tasks.

Promoting Psychological Health

- Research has identified several key components of exercise programs that promote psychological health. First, the exercise program needs to include rhythmic abdominal breathing. Aerobic exercise, such as swimming or walking, can do this, but so can mindful fitness practices, such as yoga and Tai Chi.
- Second, the exercise program must provide a relative absence of interpersonal competition. Although competition may be fun and exciting for some people, it can also lead to overtraining, pressure to win, and a sense of social evaluation. Research shows that noncompetitive forms of exercise are most likely to promote psychological health.
- Exercise that is done in a closed and predictable environment is most likely to promote psychological health. This type of environment varies depending on your experience and expectations; it may be a pool for someone who is comfortable swimming, or it may be a golf course for someone who regularly plays golf. Generally speaking, self-paced environments in which you have a good understanding of what to expect allow you to focus on the activity you're performing without distraction.

- Fourth, to experience consistent improvement in well-being, you need to exercise for at least 20 minutes a day, at least 2 to 3 times per week. Note that the amount of exercise you need to promote mental health is less than what you need for physical health.
- Finally, the most critical component of an exercise program intended to promote psychological health may be the most obvious thing you're unlikely to think of: You need to enjoy it. We often associate exercise with something we need to put on our to-do list and slog through. If you find an exercise program you truly enjoy, you're more likely both to do it and to benefit from it.

Suggested Reading

Chodzko-Zajko, et al., "American College of Sports Medicine, Position Stand: Exercise and Physical Activity for Older Adults."

U.S. Department of Health and Human Services, "2008 Physical Activity Guidelines for Americans."

Activities and Assignments

What are the health characteristics you want to promote through exercise? Identify the personal health needs that will most inspire you to keep going. Focus on framing your motivators in a positive context rather than a negative one.

Reflect on your experience with this course so far. What benefits have you already experienced from exercise?

Assess your own level of competitiveness. When, where, and how do you compete against others? What's the internal motivation for that feeling of competition? How does competition affect your fitness? What can you do to better support yourself in giving up that inner urge for competition so that you can be more open to trying new things and enjoying them just for the sake of enjoyment?

Making It Work—The Right Plan for You

Lecture 12

For children, physical activity and movement are related to fun and independence. As they become older, we encourage children to engage in physical activity to get good grades in gym class, to build character, and even to earn scholarships to college. Later in life, we come to understand that exercise is good for our health and will help prevent disease, and while that's true, the problem with looking at exercise as something that leads to an outcome is that we start to perceive it as work or an obligation. In this lecture, we'll look at intrinsic motivations for participating in physical activities.

Self-Determination Theory

- Self-determination theory proposes that we have three innate psychological needs: competence, autonomy, and relatedness. We are motivated by things that support fulfillment of these three needs. They provide internal—intrinsic—motivation to participate in activities. External—extrinsic—factors can motivate you in the short term, but in the long run, extrinsic factors can actually reduce your motivation.
- This idea is contrary to our perceptions of how to promote behavior. We grow up with the idea that extrinsic rewards motivate us. If we do well in school, we get good grades. If we do well at work, we get pay raises and promotions. But those kinds of extrinsic rewards work only in limited settings and conditions, and sometimes, even the most seemingly innocent of external rewards can reduce motivation.
- Self-determination theory holds that we have a deep, internal need to feel as if we are competent, that is, good at what we do; autonomous, that we are masters of our own universe; and related—connected to others. To really make exercise fit into our lives, we

need to choose activities that make us feel good about ourselves, that we choose for ourselves, and that reinforce our relationships.

Making Exercise Habitual

- Large portions of our lives are habitual; about 45% of everyday activities are repeated in the same way and the same location almost every day. Many of us never skip such healthy habits as flossing and brushing our teeth.
- However, it can be challenging to turn exercise into a habit. Exercise is a habit for only 22% of the population, while 54% of the population exercises occasionally but not enough for the practice to be considered a habit. Engaging in occasional exercise makes it more difficult to experience any benefits. Most people who begin a new exercise program stick to it for only about 5 weeks before they lapse.
- One aspect that affects habit is having a stable environment. You brush your teeth at your bathroom sink, not outside at the garden house or in the kitchen. The consistency of location and availability of your toothbrush and toothpaste make it easy and simple to brush your teeth. The tools and the location both support your habit. Consider how you can provide a similarly consistent environment for exercise behaviors.
 - For example, keep your walking shoes by the door so that you don't have to search for them when you want to go for a walk. Better yet, keep one pair of walking shoes in your desk at work and one in your car to take advantage of other opportunities to walk that may arise throughout the day. Keep a yoga mat on the floor beside your bed so that you can do 10 minutes of stretching to relax and unwind before you go to bed.
 - Also make sure you wear clothes that promote movement. Wear flats instead of high heels so that you can take the stairs instead of the elevator.

- Set up your treadmill, stationary bike, or elliptical machine in front of a TV so that you can get a workout while you watch.
- The ways in which you structure your environment must be connected to your intrinsic motivation for exercise and fitness. You want the environmental structure to promote your internal motivation for exercising—to connect to your philosophical needs for competence, autonomy, and relatedness. Setting up your environment in a way that makes exercise feel like an obligation will actually reduce your motivation.

Finding the Joy in Exercise

- Probably the most powerful reason you'll find to exercise is that it's fun. You will be most likely to commit to fitness throughout your lifetime if you find a type of fitness activity that you enjoy. Don't go to the gym and slog through a workout you hate. Don't exercise because your doctor tells you to or you think you should. Find an activity you truly enjoy that makes you want to engage it.
- If you haven't found this activity yet, keep trying new and different things until you do. Even fitness instructors don't necessarily like to take fitness classes, such as aerobics. You may find that you enjoy hiking with your family, exploring your city on foot, swimming, dancing, or practicing yoga or Tai Chi.
- As mentioned in an earlier lecture, preconceived notions about your athletic ability can serve as barriers to fitness change. Don't cling to labels, such as "bookworm," that were placed on you when you were young. What you were as a



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Find fun ways to incorporate fitness “moments” into your everyday life, such as playing chase with your children or dancing with your spouse.

child doesn't have to define you now. Take control of your health and choose to age healthfully and with enjoyment.

- An interesting research approach compared a focus on “hoped-for selves”—the selves we hope to be and maintain, such as healthy and independent—with a focus on “feared selves”—the selves we are afraid of and want to avoid, such as unhealthy and dependent.
 - The older adults who used the hoped-for selves approach had improved positive self-perception and higher levels of exercise and exercise adherence.
 - Focus on the positive outcome—on healthy aging—and then make decisions to get there. Above it all, figure out how to make those decisions and the journey to your hoped-for self fun.

Reaching a Healthy Lifestyle

- In this course, we've talked about many different theories of motivation and different strategies for promoting fitness success. Let's look at what might be the best approach to getting you to a healthy lifestyle.
- First, you have to have a positive outlook. Think about what you want to be—that hoped-for self—instead of what you want to avoid. Identify the healthy aging you want to have and focus your eyes on that horizon so that you're driving toward that goal.
- Second, set goals that you can buy into. Identify a philosophical vision of who you are and who you want to be. In doing this, you should think about the basic needs outlined in self-determination theory—competence, autonomy, and relatedness—and figure out how your fitness plan can fulfill those needs. Identify the motivations that are rewards in themselves, such as a feeling of energy, happiness, and connectedness with family and friends, so that exercise becomes intrinsically motivated.

- Third, turn your positive approach and your philosophical vision into concrete action by setting SMART goals about the steps that will help you achieve your vision. The vision is the what and the why, and the SMART goals are the how. Keep in mind that if your actionable goals are connected to things you find fun and truly enjoy, you're much more likely to achieve them. Don't allow your inner parent to push you so much that fitness stops being fun and you quit; instead, nurture your inner child with fitness activities that bring joy.
- Fourth, set up your environment to support your success in a way that feels good, not obligatory. Life is hard enough; make fitness an easy choice. Have the tools and the equipment you need on hand. Put fitness on your calendar and consider it a reward to yourself for accomplishing the other things you have to do.
- Fifth, keep track—not to punish yourself but to remind yourself of what matters, of what you value. Keep yourself accountable to your philosophical vision of your hoped-for self. It's easy to get so caught up in chores, to-do lists, emails, and deadlines that you lose track of what you really believe in. Prioritize the things that matter to you and put first things first. Maintain the journal you started in this course and use it to keep yourself accountable to your vision of healthy aging. That physical reminder of your success will make you feel even better about yourself, and your satisfaction will lead to even more success.
- Finally, remember that fitness is a journey—an ongoing process.
 - Periodically, you'll need to reset your SMART goals. Maybe you'll get injured and have to start over. Maybe an activity you enjoy will stop being fun, or the yoga teacher you love will move away, or the pool you swim in will close. Life might get in the way, and your fitness may fall by the wayside for a time. Don't beat yourself up if that happens; just pick yourself up and start again.

- Even if you stay committed and keep going, you should still plan to assess your motivations and goals. Pick a time to build this assessment into your life, perhaps at the start of each season or on your birthday. Reevaluate where you are, where you want to be, and how you're going to get there. And always keep in mind that the best exercise program is the one you actually do.

Suggested Reading

Deci and Flaste, *Why We Do What We Do*.

Pink, *Drive*.

Activities and Assignments

Reflect on your environment—your home and office, your schedule, and the time and space requirements of your life. Identify unique challenges and support systems in this environment and find strategies for addressing them to make your environment stable and supportive of fitness. How can you better structure your environment to make exercise a healthy habit that is easy to keep? Even more important, how can you structure those environmental cues in a meaningful way that connects to your deeper internal motivation for exercise?

Go back to your fitness plan from Lecture 4. Is it still working for you? How does it make you feel? Are you experiencing the fitness gains you hoped for? Do you enjoy the activities you've chosen or do they feel like a chore? Where do you need to make modifications? Is it time to increase intensity, duration, or frequency? Is it time to change modality? Update your fitness plan as needed and make sure it will help you achieve your goals while having fun.

Go back to the SMART goals from Lecture 7. How are you doing with your goals? Are you still working on them? Do you need to revise them or set new ones? Update your SMART goals as needed and make sure they support your positive view of healthy aging and your vision of your hoped-for self.

Establish a plan for keeping yourself accountable. How will you keep track so that you can prioritize what matters? Identify a journal, a calendar, or even a technology tool to help you focus on your priorities.

Set a date for yourself for when you will revisit your fitness plan, your SMART goals, and your strategies for accountability. Set the goal for at least 6 weeks from when you start a fitness program, so that you have a chance to turn your healthy activities into habits.

Relaxation Strategies

Lecture 13

In this lecture, we will go through four relaxation techniques: 15 minutes of progressive relaxation, 5 minutes of meditation using the anapana breathing technique, 5 minutes of meditation using alternate nostril breathing, and a 5-minute Reiki energy session. As you'll see, these techniques can be used at any time to relieve stress, help you learn to control your thoughts, energize you, or provide relief from pain.

Progressive Relaxation

- Progressive relaxation is a relaxation technique based on contracting your muscles. It can be helpful for learning to recognize what muscular tension feels like. Indeed, you may find that you carry around more residual tension than you realize. This technique can also be helpful for dealing with insomnia; if you try it while lying down in bed at night, you may find that you fall asleep more easily and sleep more deeply.
- In this session, we'll do a full-body progressive relaxation exercise, but you can also do only a partial exercise if you need a quick stress management strategy. For instance, if you're at work and feeling tense, you might do an abbreviated series focusing on your upper body, neck, and back.
- Because this technique involves isometric contractions, if you have high blood pressure or a history of heart disease, please consult your doctor before trying progressive relaxation. Also, be aware that as you contract your muscles, you might get a muscle cramp or spasm, particularly the first time you try the technique. This is normal; if you experience any cramping, just move the limb gently.
- For this session, we'll work through the entire body with a series of contractions and releases. If possible, lie down flat on your back on your bed or on an exercise mat on the floor. You can use a pillow

under your head; if you have lower back issues, place a pillow or bolster under your knees to keep your lower back more comfortable.

- We will start with the toes and work our way up the body, contracting and releasing the muscles in the feet, legs, abdomen, and so on. At the end of the exercise, we'll contract and release all the muscles in the body, and you will feel yourself becoming heavy, sinking into the floor or bed beneath you. Try to hold onto this sense of complete relaxation.

Anapana Sati

- Anapana sati, the meditation on in-and-out breathing, is a simple exercise to help you focus your awareness and learn deliberate control of your thoughts. In anapana sati meditation, you use the sensation of your breath as an anchor for your focus.
- For this technique, begin in a comfortable seated position. You can sit in a chair, or if you're comfortable sitting on the floor in a cross-legged or kneeling position, you can use that position. The key is that your posture should be soft and relaxed; you should not be distracted by discomfort.
- During this meditation, focus your awareness on the physical sensation of your breath—breathing in and out through the nose. If your mind wanders, bring your awareness back to your nose and the way your breath feels as it flows in and out of your nostrils.
- This sensation-based meditation can bring you back to the present moment and your actual experience. You can practice it regularly to improve your ability to be centered in the moment, and you can use it as a tool during moments of stress.

Alternate Nostril Breathing

- Alternate nostril breathing is a yoga breathing technique that is wonderful for increasing your energy level. If you're feeling tired or fatigued or experiencing a headache or congestion, alternate nostril breathing can be a good technique to clear your mind.

- Because this breathing technique crosses the midline of the body, yoga theory also holds that it helps connect the right and left sides of the brain; this connection can be useful when you are faced with a task that requires both creative and analytical skills.
- Again, begin in a comfortable seated position. Your posture should be soft and relaxed so that you are not distracted by discomfort. You will inhale and exhale at the same time that you alternate closing one nostril and then the other.
- Alternate nostril breathing should leave you with a sense of being calm and energized, focused and awake. Set an intention to maintain this sense of calm, peaceful energy throughout the rest of your day.

Reiki Energy

- Reiki is a Japanese energy-based system that helps you to channel the warmth and energy of your body into your own healing. We'll



A brief Reiki session may reduce your anxiety about pain, making it seem more manageable.

do a brief Reiki session to help you learn how this technique can help you relax and work through pain or discomfort.

- In this technique, you first breathe into the palms of your hands. You then place your hands gently on a part of your body that may be injured or in pain. As you take deep, slow, deliberate breaths, think about that part of your body, imagining red blood cells rushing in with energy, white blood cells rushing in to heal, and your body connecting to its capacity to heal and repair itself.
- You can do this exercise at any time, focusing on any part of your body. It may not eliminate chronic pain, but it can reduce your perception and fear of pain, making the pain seem more manageable and helping you to feel in control of your thoughts and your body.
- You can also try this Reiki technique to support a loved one who needs loving energy and a compassionate touch.

Suggested Reading

Benson, *The Relaxation Response*.

Hart, *The Art of Living*.

Iyengar, *Light on Pranayama*.

Stein, *Essential Reiki*.

Vipassana Meditation, <http://www.dhamma.org/>.

Foundational Fitness

Lecture 14



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This 30-minute fitness session provides a well-balanced workout of strength training and flexibility exercises. Complete this workout 2 to 3 times per week. Add 30 minutes of gentle cardiovascular exercise, such as walking, swimming, or cycling, at least 3 days a week for a well-rounded exercise program. In this session, we use light hand weights, exercise bands, a yoga mat, an exercise ball, and a chair.

Suggested Reading

Baechle and Westcott, *Fitness Professional's Guide to Strength Training Older Adults*.

Bonura, *Pelvic Yoga*.

Core Strength and Balance

Lecture 15



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Maintaining core strength and balance is fundamental in helping you maintain independence. In this lecture, we will focus on physical exercises that improve your posture and strengthen the muscles of the core and back to improve overall balance. The lecture includes two 15-minute sessions, one chair based and one floor based. The chair-based session is gentle and accessible for everyone, regardless of flexibility or current fitness level. The floor-based routine uses yoga and Pilates exercises to support you in further developing core strength and balance.

Suggested Reading

Austin, *Pilates for Every Body*.

Schatz, *Back Care Basics*.

Workplace Fitness

Lecture 16



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This lecture includes three 10-minute fitness sessions for the workplace, one each for standing up and moving, managing stress, and getting energized. If possible, take a walk around the block or your office building to add some cardiovascular exercise.

Suggested Reading

Archer and Gonzales, *Fitness 9 to 5*.

Kneale, *Desk Pilates*.

Zeer and Montagna, *Office Spa*.

Chair Yoga

Lecture 17



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Yoga is a mindful fitness practice that combines physical exercises with breathing exercises and deliberate mental focus. Chair yoga provides an adapted yoga workout to ensure that the benefits of yoga are accessible to everyone. You've likely seen images of yoga in the mass media that make it look complicated, unusual, and even stressful. But as you'll see in this session, yoga can be a simple practice and a comfortable form of physical exercise. At the end of the session, you should set an intention to maintain the sense of control and peace gained through yoga practice.

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International Association of Yoga Therapists, <http://www.iayt.org/>.

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Yoga Alliance, <https://www.yogaalliance.org/>.

Yoga Journal, <http://www.yogajournal.com/>.

Qigong—Practicing Fluid Movement

Lecture 18



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Tai Chi and Qigong are mindful fitness practices that focus on slow, deliberate movement integrated with breathing exercises. These practices are uniquely suited to improve balance and stability, improve posture, and increase lung capacity. They are built on two philosophical premises: encouraging the healthy flow of energy (*qi*) through the body and encouraging the balance of opposing forces (yin and yang) within the body.

Suggested Reading

American Tai Chi and Qigong Association, <http://www.americantaichi.org/about.asp>.

Cohen, *The Way of Qigong*.

National Qigong Association, <http://www.nqa.org>.

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pelvic floor exercises and provides detailed instructions and exercises for integrating them into your fitness program.

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National Qigong Association. <http://www.nqa.org>.

National Senior Games. <http://www.nsga.com>. Learn more about the athletes in the National Senior Games and decide whether you want to join them.

Team Hoyt. <http://www.teamhoyt.com>. Get inspired by Rick and Dick Hoyt.

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