**Integrated training and the OPT model**

The NASM proprietary approach to exercise training, the Optimum Performance Training (OPT) model, was developed with evidence-based practice as a core guiding philosophy. The OPT model is backed by scientific research and has been successful for many types of clients, including those seeking weight loss or improvements in health, strength, muscle mass, or athletic performance.

Exercise training programs need to address all components of health-related physical fitness while using scientifically recognized training principles. Unfortunately, some training programs are not based on sound principles and guidelines. Instead, they rely solely on the experience of celebrities, fitness enthusiasts, or athletes who do not possess a formal education or background in exercise science. It is vital for exercise programs to be rooted in science and to address the needs of the whole person in a holistic manner.

For example, the condition of a person’s musculoskeletal system is directly related to the potential risk of injury; the more deconditioned a person is, the greater the risk of injury becomes. It is important to note that deconditioned does not simply mean that a person gets out of breath when climbing a flight of stairs or that they are overweight. Being deconditioned is a state in which a person may have a combination of muscle imbalances, poor flexibility, insufficient endurance, or limited joint stability. All of these conditions can greatly inhibit the ability of the human body to produce proper movement and can eventually lead to injury.

The personal training industry continues to grow dramatically, especially regarding the ability of fitness professionals to work with individuals with chronic health conditions or musculoskeletal impairments. While athletes do represent a portion of a fitness professional’s typical clientele, many clients who seek out personal training services are physically inactive and deconditioned.

To address the many physical and physiological needs of a client, an optimally designed fitness program should follow an integrated (i.e., comprehensive) approach. An integrated approach to exercise represents the inclusion of the following forms of training:

* Flexibility and mobility
* Core strength and stability
* Cardiorespiratory (cardio)
* Balance
* Plyometrics
* Speed, agility, and quickness
* Resistance.

NASM addressed the need for this integrated approach to training by developing the OPT model. The OPT model used in conjunction with evidence-based practice provides an exceptional pathway for designing safe and effective exercise programs. The advantage of the OPT model is that it is flexible, so it can be applied to any client with any fitness need in nearly any environment.

**The global state of health**

The current global state of health is a complex subject with many moving pieces, including factors that are often beyond the control of the individual, such as genetics, access to health care, access to preventive medicine, natural disasters, socioeconomic status, and the built (i.e., human-made) environment. Despite the many challenges of achieving good health, individuals do have a significant amount of control over their health and well-being. For example, becoming more physically active and eating healthy foods are two simple steps within almost any person’s grasp that have immediate benefits toward improving overall health.

Whether or not individuals choose to engage in healthy habits is still a personal decision. However, helping individuals start and motivating clients to succeed are two of the most valuable and rewarding aspects of being a fitness professional. Preventive efforts, including exercise and physical activity, to reduce morbidity and mortality are underutilized around the world by virtually every segment of the population. Fitness professionals have a tremendous opportunity to make a positive impact in this area.

### Defining Health and Disease

The World Health Organization (WHO) functions as the international public health agency of the United Nations and is focused on the development and promotion of international public health and well-being efforts. The WHO can be thought of as the world’s public health department. The WHO (1948) defines health as “a state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity.”

Health is not a static condition, but rather an ever-changing condition due to the human body’s continual need to adjust internal and external situations, changes in physiology, or changing environments. The human body is uniquely designed to respond to stress and, if necessary, make necessary changes to maintain optimal health and physiological functioning. This process is called homeostasis, in which the human body continually strives to maintain a relatively stable equilibrium in relation to the surrounding environment and the regular tasks it is required to perform.

A general definition of *disease* includes any abnormal condition that negatively affects the structure or function of a part of the body. Diseases can affect one area of the body or they can be systemic, affecting every part of the body (i.e., various forms of cancer). There are two basic types of disease: chronic, or noncommunicable (i.e., not contagious), disease and acute disease. Acute disease accounts for conditions like getting sick from the flu virus, while the WHO defines chronic disease as follows:

TRAINING TIP

Health is a dynamic and ever-changing process. As you work with clients, ask them where they think they are on the spectrum and then compare it against your objective observations. Use this information to help guide your approach to designing individualized training programs, or to determine if your client should be referred to a medical professional.

*Noncommunicable diseases (NCDs), also known as chronic diseases, tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behaviors factors. The main types of NCDs are cardiovascular diseases (like heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma) and diabetes.*

STRETCH YOUR KNOWLEDGE

**Acute Versus Chronic Disease**

An acute medical event or disease is any medical condition that occurs suddenly and can be treated and healed in a short period of time. For example, an isolated bout of bronchitis is an acute medical condition that is easily treated with antibiotics and rest, and typically resolves in a week or so. However, if left untreated, the condition could progress to more serious chronic problems.

A chronic disease is a medical condition that persists for a long duration or cannot be cured altogether, typically lasting for 3 months or more. Chronic diseases generally cannot be prevented by vaccines or cured by medications, nor do they just disappear over time. For example, individuals with a long history of smoking are prone to acute bouts of bronchitis, which can and often do progress toward chronic bronchitis.

It is important for fitness professionals to keep in mind that a wide range of chronic diseases can be avoided by two simple things: eating a healthy diet and taking part in regular exercise to stay physically fit. Someone who is primarily sedentary, is deconditioned, and eats a diet mainly consisting of junk food will be far more likely to develop a chronic disease than someone who follows a healthy diet and stays regularly active (CDC, 2020a, 2020b).

The leading causes of death in the world today are classified as chronic diseases and conditions (Figure 1-4) (World Health Organization, 2018b). Coronary artery disease, a specific type of heart disease, is the leading cause of death in both men and women. While public health efforts and the availability of better medical treatments have lowered the rates of death from chronic diseases in the past few decades, the fact remains that numerous chronic diseases are highly preventable by simply living an active and healthy lifestyle. In fact, research has shown that the two overwhelmingly leading preventable causes of death in modern society are smoking tobacco and being either overweight or obese (Danaei et al., 2009)

**Physical inactivity and its relationship to chronic disease**

The global impact of chronic disease is staggering, from both an economic and a human standpoint. Chronic diseases including heart disease, cancer, and diabetes are the leading causes of death and disability in the United States as well as in many locations across the globe. Besides loss of life and quality of life through disability associated with chronic disease, the annual healthcare costs in the United States alone are more than $3 trillion and growing. Furthermore, 90% of the nation’s healthcare expenditures are applied toward treating individuals with chronic and mental health conditions (Misselbrook, 2014).

STRETCH YOUR KNOWLEDGE

A sedentary lifestyle is one of the biggest causes of developing a chronic health condition, but roughly 3 in 4 adults and more than 80% of adolescents do not meet recommended physical activity guidelines. Regardless of whether someone has a chronic disease, getting active can go a long way toward improving health and quality of life (U.S. Department of Health and Human Services, 2018). The Healthy People 2020 initiative from the U.S. Department of Health and Human Services (2014) and similar programs around the globe have been diligently working to change that statistic by partnering with legislators and government institutions to provide the public with more access to activity-friendly environments, such as parks, bike lanes, and walking trails so people can get more active.

Sadly, in most cases, the obvious signs of chronic disease go unnoticed until it is often too late. Although secondary prevention (i.e., treating chronic health conditions after they become apparent) is a viable and highly recommended approach, primary prevention (i.e., treating before the conditions develop) is still the preferred goal. For example, regular physical activity and exercise are important in both primary and secondary prevention of chronic disease. Regular physical activity, as measured by aerobic conditioning and aerobic fitness, is perhaps the strongest overall predictor of death, disability, and disease (Blair, 2009).

From another perspective, individuals who maintain their cardiovascular fitness levels across their life span are two to four times less likely to develop heart disease, or die prematurely from it (Reimers et al., 2012). Encouragement of regular participation in physical activity and exercise is an essential part of preventing and managing chronic disease worldwide. If one were to consider the overall negative impact of physical inactivity on global health and the economy, such as lost wages and increased cost of health care, one of the most readily available and cost-effective interventions would be to get people moving on a regular basis. In fact, in the United States, around $117 billion in yearly healthcare costs can be attributed to people not getting enough physical activity in their daily lives, and this amount is likely to keep rising (Centers for Disease Control and Prevention, 2019). But the United States is not alone; physical inactivity is a global problem that must not be ignored (Figure 1-6) (Hallal et al., 2012).

Chronic diseases are among the most prevalent and costly health conditions in the United States (Raghupathi & Raghupathi, 2018) and globally as well. In a study conducted by Harvard University in partnership with the World Economic Forum, it was estimated that chronic disease will be responsible for a global economic loss of roughly $47 trillion by the year 2030 (Bloom et al., 2011). The global impact is staggering, and individuals at all levels of society are impacted by the growing prevalence of chronic diseases and associated risk factors.

CRITICAL

With so many in the greater population dealing with one or more chronic health conditions, it is essential for fitness professionals to be familiar with the most common conditions. Regular exercise and healthy lifestyle changes can greatly improve the quality of life for people with chronic conditions; however, fitness professionals should always ensure that affected individuals have received clearance to exercise by a doctor or other licensed healthcare provider before beginning a new fitness regimen.

### 

**Overweight and obesity**

The terms *overweight* and *obesity* refer to a body weight that is greater than what is considered normal or healthy. In both cases, an individual is carrying excess body fat that may negatively impact their health; however, obesity is more severe and has numerous significant health risks associated with it. Being overweight or obese greatly increases the risk of developing a chronic disease, such as musculoskeletal disorders, diabetes, cancer, hypertension (high blood pressure), high cholesterol, and heart disease (GBD 2015 Obesity Collaborators, 2017; World Health Organization, 2018c).

For adults, the general measure used internationally for defining overweight and obesity is body mass index (BMI), which is a simple comparison of a person’s height to their weight. It is calculated by either dividing a person’s weight in kilograms by the square of the person’s height in meters or dividing body weight in pounds by the square of the height in inches and multiplying by 703.

* Metric formula: BMI = weight (kg) ÷ [height (m)]2
* Imperial formula: BMI = 703 × weight (lb) ÷ [height (in.)]2

The BMI classifications for overweight and obese are found in Table 1-1 (Nuttall, 2015).

TABLE 1-1 BMI Classification

|  |  |  |
| --- | --- | --- |
| **BMI** | **Disease Risk** | **Classification** |
| < 18.5 | Increased | Underweight |
| 18.5–24.9 | Low | Healthy weight |
| 25.0–29.9 | Increased | Overweight |
| 30.0–34.9 | High | Obese |
| 35.0–39.9 | Very high | Obesity II |
| ≥ 40.0 | Extremely high | Obesity III |

Obesity, due to poor diet and physical inactivity, is perhaps the most challenging of the public health problems faced today. When including the amount of people who are overweight as well as those who are obese, not only have current numbers already reached unprecedented levels but the rate at which both are annually increasing in most developing regions is substantial. The global public health implications of overweight and obesity are staggering and seem to become worse every year; between 1980 and 2015, obesity rates have more than doubled in more than 70 countries, with more than 600 million adults and 100 million children now classified as obese worldwide (not including the even greater number classified as overweight) (GBD 2015 Obesity Collaborators, 2017; Hruby & Hu, 2015).

But there is good news. Overweight and obesity represent the one area of public health where fitness professionals can make a significant positive impact. By coaching clients to change behaviors, get more active, and follow healthy eating guidelines, the health risks of being overweight or obese can be reduced.

Certified Personal Trainers are in a unique position to help their clients not only lose weight but also keep it off for the long term. According to a key study by the National Weight Control Registry (the largest ongoing study of people who have maintained successful weight loss in the United States), the majority of participants (90%) who reported consistently exercising an average of 1 hour per day maintained a significant weight loss over a period of several years (Ogden et al., 2012).

CRITICAL

BMI provides the most practical measurement of overweight and obesity because it is the same for both sexes and for all ages of adults. When analyzing large populations, BMI is both a valid and reliable tool to estimate overweight and obesity levels.

However, BMI is not a substitute for more precise, objective measurements of body fat composition when examining people on an individual basis. For example, elite athletes with very high levels of lean muscle mass can be mistakenly classified as obese by BMI alone, even though they may have very little body fat. For that reason, calculating BMI is just a starting point, and other body composition assessments should be considered with clients who are on a weight loss journey.

**Heart disease**

*Cardiovascular diseas*e is a broad term describing numerous problems of the heart and blood vessels and includes conditions such as strokes, heart attacks, heart failure, heart valve problems, and arrhythmias. The most common root cause of these conditions is ischemic heart disease (Benjamin et al., 2017). Ischemic heart disease is characterized by the narrowing of coronary arteries, which supply blood and oxygen to the heart, and is what is most commonly being referred to when discussing heart disease.

Atherosclerosis (Figure 1-7) is the process by which plaque is formed in the arteries, leading to reduced blood flow to the heart or brain. Atherosclerosis is the most common type of heart disease that can directly result in heart attacks and strokes. It is usually caused by the presence of a combination of risk factors, such as tobacco use, obesity, physical inactivity, harmful use of alcohol or drugs, high blood pressure, high cholesterol, type 2 diabetes, chronic stress, and poor diet.

While chronic disease as a whole is extremely costly for every population around the globe, the proportion due to heart disease alone is staggering; it is the number one cause of death, accounting for more loss of life than any other chronic disease (Finegold et al., 2013). However, it is also highly preventable. Studies have consistently demonstrated that individuals who maintain their aerobic fitness through regular and sustained exercise over the course of their lifetimes reduce their risk for developing heart disease (Brunjes et al., 2017; Kokkinos, 2012; Warburton et al., 2006).

In addition, for those diagnosed with a heart condition, habitual exercise appears to reduce the risk of additional cardiac events—including heart attacks—and is an important component of secondary prevention (Darden et al., 2013).

Exercise also promotes positive physiological changes, such as encouraging the heart’s arteries to dilate (i.e., open) more readily, which improves blood flow (Bruning & Sturek, 2015). The overall impact of physical activity and exercise on reducing the risk of heart disease is significant and dramatic; regardless of the presence or absence of ischemic heart disease and existing risk factors, every adult should be encouraged to participate in regular exercise over the course of their lifetime (Agarwal, 2012).

HELPFUL HINT

Exercise Versus Physical Activity

Exercise is a structured and planned form of human movement to elicit a physical adaptation, such as weight loss or improved endurance or strength. Examples of exercise include weight lifting, cycling, running, or swimming. Exercise programs can occur in a gym setting or outside and can also be performed alone or in a group setting.

Physical activity refers to movement that expends energy, such as walking, yardwork, recreational sports, or playtime. Physical activity can be categorized as continuous or intermittent and can be performed across a wide range of intensity levels, from walking a dog to vigorously shoveling snow after a storm. Physical activity is not typically structured or planned, rather, it represents natural movement throughout a person’s day.

**Hypertension**

Hypertension, specifically, is one of the primary risk factors for heart disease and stroke (World Health Organization, 2019). Hypertension is categorized by a blood pressure greater than 120/80 (systolic/diastolic) millimeters of mercury (mm Hg) (Hernandez-Vila, 2015). Fitness professionals need to promote awareness of hypertension and encourage clients to modify risk factors, such as poor diet, lack of physical activity, and tobacco use.

STRETCH YOUR KNOWLEDGE

Systolic blood pressure (SBP) is the pressure in arteries and other blood vessels when the heart is beating or contracting. It is the first (top) number recorded.

Diastolic blood pressure (DBP) is the pressure in arteries and other blood vessels when the heart is at rest or between beats; it is the second (bottom) number recorded.

Blood pressure is classified as follows:

* Normal (healthy): Less than 120/80 mm Hg
* Elevated: Systolic between 120 and 129 and diastolic less than 80 mm Hg
* Stage 1 hypertension: Systolic between 130 and 139 or diastolic between 80 and 89 mm Hg
* Stage 2 hypertension: Systolic 140 or higher or diastolic 90 mm Hg or higher

Hypertensive crisis: Systolic greater than 180 and/or diastolic greater than 120 mm Hg (Whelton et al., 2018)

Scientific evidence indicates that the risk of cardiovascular complications not only doubles when systolic and diastolic blood pressure are chronically above normal levels, but also increases proportionally with age (Prospective Studies Collaboration, 2002). Updated guidelines that use more conservative definitions of high blood pressure are designed to increase awareness earlier and promote healthy behaviors aimed at preventing hypertension and controlling it if a diagnosis has been reached (Whelton et al., 2018).

A helpful method for every individual to keep blood pressure at healthy levels is regular exercise. Exercise has been shown to improve factors linked to cardiovascular health, resulting in lower blood pressure (Nam, 2011). Additionally, a fiber-rich diet with plenty of vegetables, whole grains, and fruit significantly helps reduce blood pressure (Siervo et al., 2015). Other evidence-based practice recommendations to reduce and control blood pressure include learning stress-reduction techniques and avoiding both smoking and excessive alcohol use.

Becoming more physically active can lower systolic blood pressure by an average of 4–9 mm Hg (Carpio-Rivera et al., 2016). For individuals diagnosed with hypertension, the typical approach to treatment is a combination of overall lifestyle modification (e.g., smoking cessation, diet improvement, and increased physical activity) and medication. Planned exercise alone is typically insufficient for acutely lowering and controlling hypertension. However, when looking at the bigger picture, exercise also helps lower and control body weight, improve blood flow, and reduce stress and anxiety, all of which have a positive impact on reducing and controlling blood pressure in the long run (Moraes-Silva et al., 2017).

**Cholesterol**

Elevated total cholesterol (medically referred to as dyslipidemia) is a major cause of disease burden in both the developed and developing world. Chronically elevated cholesterol levels increase the risks of heart disease and stroke (CDC, 2020c; Park et al., 2018). Cholesterol is a waxy substance found in blood that is made up of a combination of protein and fatty acids, known as a lipoprotein. When a healthy, balanced diet is consumed, the human body produces all of its own necessary cholesterol. The human body needs cholesterol to build healthy cells, carry products in the blood, and support the nervous system.

Chronically high cholesterol can develop fatty deposits in blood vessels and can increase a person’s risk for heart disease (Nelson, 2013). Although it serves a vital bodily function, cholesterol should be frequently monitored to promote health and prevent disease, because it is a major component of the plaque that leads to atherosclerosis.

STRETCH YOUR KNOWLEDGE

**“Good” and “Bad” Cholesterol**

There are two main types of cholesterol in the body: low-density lipoprotein (LDL) and high-density lipoprotein (HDL). LDL cholesterol, sometimes referred to as “bad cholesterol,” tends to increase the risk of cardiovascular disease (Nelson, 2013). LDLs, specifically, are the form of cholesterol that makes up the plaque that clogs arteries. Ideally, LDL levels should be less than 100 milligrams per deciliter (mg/dL) (O’Keefe et al., 2004).

HDL cholesterol, on the other hand, is sometimes referred to as “good cholesterol.” It does not have the tendency to clog arteries like LDL cholesterol does and, in fact, actually helps remove some LDL cholesterol from the body. To help reduce the risk of heart disease, in conjunction with lowering LDL levels below 100 mg/dL, HDL levels should typically be kept around 60 mg/dL (Grundy et al., 2018; U.S. Department of Health and Human Services, 2001).

Exercise has been shown to help reduce high cholesterol; however, researchers are not entirely sure about the optimal frequency, duration, and intensity of exercise to improve cholesterol levels (Mann et al., 2014). Being overweight tends to increase the amount of LDL cholesterol in the body, which increases the risk of heart disease.

The use of exercise to help reduce weight and control blood sugar levels will likely result in favorable reductions in LDL cholesterol levels and, therefore, overall heart disease risk. Conversely, studies have shown that individuals who regularly partake in high-intensity exercise can raise their HDL cholesterol to heart-healthy levels (Wang & Xu, 2017).

**Diabetes**

Diabetes is a disease that impacts the body’s ability to properly metabolize carbohydrates, specifically glucose, the simplest carbohydrate form that is used directly by the cells to produce energy. There are a few types of diabetes, such as type 1 and type 2, and each impacts the body’s physiology differently. With type 1 diabetes, the pancreas does not make enough insulin (or none at all), which is a hormone that helps transport glucose into cells to be used for energy. Without insulin, glucose in the blood (i.e., blood sugar) can rise to dangerous levels, causing numerous health complications. Type 1 diabetes is typically genetic and is not something a person can actively prevent. However, regular exercise can help people with type 1 diabetes considerably improve their blood glucose management and quality of life (American Diabetes Association, 2020).

With type 2 diabetes, the body still produces insulin; however, it is not used properly by the cells. When excess carbohydrates (specifically sugar) are chronically consumed in the diet, high levels of insulin need to be produced to help regulate blood sugar. When excess insulin continually tries to deliver glucose to cells when they already have more than they can use, cells stop responding to it. This state is called insulin resistance. Once cells have become insulin resistant, a person is said to have developed type 2 diabetes. Regulating blood sugar can become very difficult for these individuals, which may lead to uncontrolled blood sugar levels and a wide variety of health complications.

The global economic impact of diagnosing and treating diabetes—especially type 2—is extremely high, as is the human cost of increased disability and premature mortality, making diabetes the seventh leading cause of death around the world (Kharroubi & Darwish, 2015). Regular physical activity and exercise is vital in the prevention and treatment of diabetes, especially type 2 (American Diabetes Association, 2020). Obesity is one of the primary indicators for a person to develop type 2 diabetes; therefore, exercise combined with diet and lifestyle changes to help lose weight can have a dramatic impact in improving the health of individuals who have been diagnosed.

**Cancer**

Simply put, cancer is a disease where cells in the body grow abnormally, often creating tumors that can grow aggressively and damage the body. Cancer can occur in virtually every part of the body, such as muscle tissue, internal organs, bones, the blood, and the brain. There are more than 100 different types of cancer identified, caused by numerous factors ranging from lifestyle choices like smoking tobacco and eating overly processed meats to acute DNA damage from exposure to radiation (National Cancer Institute, 2015). Cancer can affect people of all ages but is most common in older adults; about 76% of all cancers are diagnosed in individuals 55 years or older (Centers for Disease Control and Prevention et al., 2019). On the bright side, it is estimated that around 30–50% of cancers can be prevented by avoiding risk factors and implementing existing evidence-based prevention strategies (Bray et al., 2018). Two of those prevention strategies are taking part in regular exercise and eating a healthy diet.

Exercise can play a significant role in the prevention of many types of cancers; in particular, being physically active can reduce the overall risk of cancer in general. Evidence indicates that even those currently undergoing cancer treatments can increase daily physical activity sessions over the course of 1 month (Segal et al., 2017).

In addition to increasing physical activity, all of these activities can significantly reduce cancer risk: avoiding tobacco use, losing excess weight, eating a diet rich in fresh fruits and vegetables, and limiting alcohol consumption.

**Respiratory disease**

Chronic obstructive pulmonary disease (COPD) is an umbrella term for chronic respiratory dysfunctions that are characterized by increased breathlessness, airflow limitation, and accelerated decline of lung function. These symptoms are not fully reversible and significantly limit activities of daily living for those who are diagnosed. Emphysema and chronic bronchitis are examples of COPD. By 2030, COPD is estimated to become the third leading cause of death worldwide (Quaderi & Hurst, 2018).

Individuals with COPD often have several accompanying chronic health conditions. Consequently, they often have lower health-related quality of life, which in itself is an independent predictor of hospitalizations and mortality (Janssen et al., 2011). Once diagnosed, COPD is not considered curable; rather, it is medically managed over a person’s life span. However, lifestyle modification and increased physical activity can have positive effects for individuals with a chronic respiratory condition. Specifically, light aerobic exercise involving large muscle groups is recommended to help improve the ability to use oxygen; brisk walking daily can be one of the best forms of exercise for people with COPD (Bender et al., 2016).

**Stress**

The world we live in is becoming more and more complex, fueled by rapid change and the need to constantly respond and adapt to it. In the face of 24-hour news cycles, social media, and increased demands for productivity, stress is on the rise. According to the Global Organization for Stress, most of the world is affected by stress and stress-related complications (deVries & Wilkerson, 2003). Stress levels in the workplace are rising, with 6 in 10 workers in all major global economies reporting that their workplace-related stress is increasing (Birhanu et al., 2018). And that workplace stress is taking its toll, with stress-related illnesses rising in turn among all segments of the population (Fink, 2016). Constant unmanaged stress and anxiety is harmful to both the body and mind and may elevate the risk for chronic disease (Yaribeygi et al., 2017).

However, regular physical activity and exercise have been shown to help control and manage stress and anxiety (Rebar et al., 2015). Any form of physical activity or exercise can act as a powerful stress release and is perhaps the “best medicine” to help relieve stress. One way regular exercise helps reduce stress is by the brain releasing endorphins that are associated with pain reduction and feelings of increased well-being and happiness. Additionally, the ability of exercise to help lower and control heart rate and blood pressure makes it an important countermeasure to stress and anxiety. For those reasons, the role of physical activity and exercise in helping to relieve and control stress is extensive and convincing (Stults-Kolehmainen & Sinha, 2014).

# The Healthcare Continuum

The healthcare continuum (Figure 1-8) represents a systematic way to view the healthcare industry through various entry points (i.e., why health care is needed), types of care provided (i.e., which professional to choose), and the intended outcomes (i.e., what the individual wants to accomplish). The healthcare continuum describes the spectrum of preventive, acute (immediate), and long-term healthcare needs. For example, admittance to the emergency room for an injury would be acute care, whereas training with a fitness professional would be classified as preventive.

All in all, the healthcare continuum allows for a clear understanding of which components of health and wellness require a licensed medical provider and which ones are completely within an individual’s control. No longer is health care strictly related to going to the doctor when one is sick or injured; the modern interpretation represents a dynamic process with the goal of improving and extending total quality of life by combining professional care with elevated levels of self-care.

Certified Personal Trainers are a vital part of the healthcare continuum because they can become instrumental in people’s lives as a form of preventive care to help prevent illness or injury. Additionally, they can also help clients improve their health through exercise—after receiving a medical professional’s clearance—after experiencing injury or being diagnosed with an illness.

This makes it important for Certified Personal Trainers to network with a wide variety of allied health professionals so that any client question or concern can be referred to the right expert.

**Allied health professionals**

In many cases, fitness professionals are the bridge between licensed healthcare providers and clients. Certified Personal Trainers serve an important role in helping develop and implement safe and effective training programs alongside other healthcare providers. It is important for fitness professionals to develop a working knowledge of the types of healthcare professionals they may work with in the future. Networking with other allied health professionals can be vital in building a thriving fitness business, because each can refer to the other for their respective services and build a community their clients can trust. Certified Personal Trainers will often network with the following allied health professionals:

* *Physical therapists*. A physical therapist is a practitioner who is educated in many areas of physical rehabilitation. Physical therapists can work in many settings such as hospitals, rehabilitation centres, nursing homes, schools, and fitness or sports conditioning facilities to help individuals return to regular activity following an injury.
* *Athletic trainers*. An athletic trainer often works alongside physicians, emergency medical technicians, and other healthcare providers to help diagnose and treat injuries. Many athletic trainers work with sports teams as part of the sports medicine staff; however, athletic trainers can also work in a variety of fitness-related settings or schools.
* *Chiropractors*. A chiropractor is a licensed healthcare professional who primarily deals with conditions relating to spinal alignment. Chiropractors use manual manipulation of the vertebrae to help alleviate nervous system dysfunction because all nerves in the body connect to the spinal cord.
* *Registered dietitian nutritionists*. Registered dietitian nutritionists are food and nutrition experts who have met specific academic and professional requirements and passed the required national certification exam. These professionals provide nutritional advice, therapy, and counseling to a wide range of clients or patients, often specializing in nutritional therapy for the treatment and management of chronic disease. Registered dietitian nutritionists can work in many settings such as hospitals, nursing homes, schools, and fitness or sports conditioning facilities.
* *Licensed massage therapists*. Licensed massage therapists are professionals who practice massage therapy and are licensed to therapeutically manipulate the muscles and other soft tissues of the body through physical touch. Licensed massage therapists can work in a variety of settings, such as rehabilitation centers, fitness or sports performance facilities, and luxury resorts and spas, or work as an independent contractor.