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Abstract

Modern medicine is rapidly moving toward a model that considers the patient's entire being — body and mind — rather than a single symptom or condition. Complementary and integrative medicine combines the best mainstream medical treatments with safe, effective therapies with a focus on the patient's wellbeing. This approach integrates various healthcare professionals, making use of their specific skillsets in order to maximize treatment options in the most effective and least invasive manner for the patient. With a focus on prevention, complementary and integrative medicine provides an optimal foundation for long-term wellness.
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Continuing Education Credit Designation
This educational activity is credited for 4.5 hours. Nurses may only claim credit commensurate with the credit awarded for completion of this course activity.

Statement of Learning Need
The philosophy and proponents of complementary and integrative medicine have grown within medical and public awareness. Options to treat the whole-person for prevention and healing of a disease state have increasingly become part of many patients’ expectation of their healthcare.

Course Purpose
To provide nursing professionals with basic knowledge complementary and integrative medical practices to improve options for patient care.
Target Audience
Advanced Practice Registered Nurses and Registered Nurses
(Interdisciplinary Health Team Members, including Vocational Nurses and Medical Assistants may obtain a Certificate of Completion)

Course Author & Planning Team Conflict of Interest Disclosures
Jassin M. Jouria, MD, William S. Cook, PhD, Douglas Lawrence, MA, Susan DePasquale, MSN, FPMHNP-BC – all have no disclosures

Acknowledgement of Commercial Support
There is no commercial support for this course.

Activity Review Information
Reviewed by Susan DePasquale, MSN, FPMHNP-BC

Release Date: 2/15/2016 Terminating Date: 5/30/2018

Please take time to complete a self-assessment of knowledge, on page 4, sample questions before reading the article.

Opportunity to complete a self-assessment of knowledge learned will be provided at the end of the course.
1. **Complementary or alternative medicine** is sometimes referred to as an unconventional form of medicine because:
   a. it separates the body and the mind into two separate entities so that body or mind may be treated separately.
   b. it was developed in the eastern part of the world.
   c. its benefits cannot be scientifically proven.
   d. its practitioners are trained for specific purposes, with specialties ranging from psychiatry to orthopedics to neurology.

2. **TRUE or FALSE: Vitamins that may protect body cells against damage are known as antioxidants.**
   a. True
   b. False

3. **Phytomedicine** is a term that refers to:
   a. a supplement that is available without a prescription.
   b. botanical medicines.
   c. any mainstream or conventional prescription.
   d. supplements that are effective but the exact element of their composition that makes them effective has still not been isolated.

4. **Tai chi** is a movement therapy that:
   a. originated as a type of martial art.
   b. consists of movements that are slow and focused.
   c. is a form of meditation.
   d. All of the above.

5. **TRUE or FALSE: A person with any health background who has received careful instruction/demonstration can perform yoga.**
   a. True
   b. False
Introduction

The use of complementary, alternative, and integrative medicine has slowly been increasing in the past few decades, with the popularity of its use on the rise since 1950. However, the routine practice of complementary and alternative medicine in areas outside of the United States has been happening for thousands of years. Despite the array of available technology for practice of mainstream medicine, which has been shown to treat and manage various forms of illness and injuries, many people also turn to other forms of healing for their medical or psychological health conditions.

Some medical professionals who practice mainstream medicine debate the effectiveness of unconventional forms of medicine, stating that anything beyond what is scientifically proven through research in clinical trials and evidence-based practice is flawed. However, the acceptance of medical practices beyond mainstream medicine is rising through various channels, with increased literature about common practices, more businesses and operations becoming available to the public, and professional organizations supporting and promoting complementary and integrative medical practice.

Complementary And Integrative Practices Defined

Before beginning a discussion about the various forms of treatments and therapies available for health conditions, it is helpful to list some definitions of these practices. There are many terms that may be used or included, which can be confusing to some consumers who wish to consider all options available for treatment; however, medical therapies are typically categorized as being mainstream, complementary, or alternative. Another approach, integrative medicine, seeks to bring together these different forms of treatment or therapy into an inclusive method of comprehensive care. These separate therapy approaches are further discussed below.
Mainstream Medicine

Mainstream medicine describes medicine performed by a professional medical doctor (M.D.) or doctor of osteopathic medicine (D.O.). Also referred to as conventional or allopathic medicine, mainstream medicine uses “standard” forms of treatment through medications and pharmaceutical supplements, surgery, medical procedures, and other measures that are based on scientific evidence and backed by research studies. Physicians who practice mainstream medicine typically must undergo years of study and training to become medical doctors, including time spent in medical school and residency training, before they are licensed to practice medicine in the United States. Additionally, extensive training is required for other providers of medical services, such as advanced nurse practitioners and physician assistants.

Mainstream medicine may also be referred to as “Western” medicine because it is so prominent in the United States as the main form of healthcare available to consumers. This compares to “Eastern” or “traditional” medicine, which potentially could have developed in some eastern countries such as China or India and which are not necessarily considered part of conventional medicine. These are somewhat inaccurate terms, though, as relegating parts of the world into the East and the West and categorizing them by their medical practices is incorrect. Nonetheless, these terms have prevailed and may be used in some form among practitioners or when discussing mainstream and complementary therapies.

Although there have been recent changes in thought and practice, conventional medicine tends to focus much of its work on treating illness and disease after it has occurred, typically concentrating on the specific areas involved. When a patient has a medical appointment for knee pain, the
theory of conventional medicine focuses on the knee and what to do to fix the situation to improve the patient’s pain level and mobility. The concept of mind-body dualism, first proposed by René Descartes, stated that the body and the mind are two separate entities and that one can exist without the other. Unfortunately, this line of thought has led many within conventional medicine to relegate certain illnesses into specializations, in which medical practitioners are trained for specific purposes, with a wide range of specialties, such as psychiatry, orthopedics, neurology, etc.

This separation of the mind and the body, and the segregation of different systems without considering how they impact one another is what have caused the rise in specialty care medicine. Mainstream medicine offers specific caregivers for every type of body system or health need, but they all too often work in silos and consult with one another when the need arises.

Fortunately, mainstream medicine is changing and medical practitioners and healthcare providers are adopting more holistic approaches to practice. While mainstream medicine can and should continue with providing care through pharmaceutical treatments, surgery, and other research-based practices, it is also becoming more flexible and opening itself to other practices by recognizing the need for holistic care. Increasingly, healthcare providers are considering a holistic approach when treating one aspect of a patient’s health needs. This may mean considering how lifestyle practices affect health conditions or making arrangements for spiritual or psychiatric care for a patient who presents with a physical complaint.

The benefits of mainstream medicine are that they are often able to provide successful treatments to patients because they have research and experience to back up their practices. If a person presents to a healthcare
clinic with back pain, the healthcare provider has a guide for how to begin to treat the pain because of evidence and proof in other cases that have shown certain treatments to be effective. Most situations that involve mainstream medicine seek to help the person involved. If an individual has pain or illness in a part of the body, the compassionate approach of mainstream medicine seeks to find a treatment that will make the patient more comfortable and find a way to cure or eliminate symptoms. This process is what upholds the philosophy of mainstream medicine, which is based on the concepts of avoiding harm and doing the most good.

Complementary Medicine

The concept of complementary medicine refers to a technique, therapy, or treatment that is used in conjunction with mainstream medicine. A person who utilizes complementary medicine continues to use conventional therapy, but may complement these treatments with other methods as well. For example, a diabetic patient who suffers from peripheral neuropathy may work with an endocrinologist to manage blood glucose levels and to use a sliding scale of insulin, but may also utilize meditation to help manage the pain sometimes experienced with neuropathy.

Approximately 30 percent of American adults use some form of complementary medicine as part of treatment or prevention of disease. What some Americans consider to be complementary or mainstream treatments can differ; for example, because a technique such as acupuncture originated in Asia, it may be one of the first forms of treatment a person of Asian descent seeks for healthcare. However, while more medical doctors and licensed healthcare providers are recognizing and becoming certified in complementary therapies, other elements of healthcare provision do not necessarily recognize complementary therapies as
mainstream treatments. In the case of an Asian individual, acupuncture would likely be considered to be a first-line treatment for his or her illness, but the patient’s insurance company may not agree and may not pay for the service.

In most countries, insurance does not cover the cost of many types of complementary therapies; while some aspects may be covered by some plans, many people end up paying for most services out of pocket. As more physicians receive training, and with increasing acceptance of complementary practices as forms of health management, health payment policies may change and users may start to see increases in coverage of the various costs. With good communication between the healthcare provider and the patient, complementary therapy offers a distinct advantage to anyone who wants access to it as support for their current treatment.

**Alternative Medicine**

Similar to complementary therapies, alternative medicine comprises those techniques and methods that are not considered part of mainstream medicine. The methods used in alternative medicine may actually be the same as what is used in complementary medicine. The difference between the two is that complementary medicine is used in conjunction with mainstream medicine, while alternative medicine is used in place of it.

There are many complementary and alternative therapies that have been shown to work effectively for treating various types of symptoms and conditions. When used as an alternative to mainstream medicine, though, these techniques may not be effective enough to completely resolve a health issue. Worse, they may actually cause harm to the patient because they have not necessarily been proven to be effective as a sole form of medical
treatment and the patient’s condition could actually worsen while he or she attempts alternative therapy instead of being treated with traditional medicine. That is not to say that some forms of alternative medicine do not work. Additionally, many patients with minor illnesses or even those who wish to use some forms of medicine as a preventive measure to avoid becoming ill may have success with alternative medicine.

As with complementary medicine, insurance coverage for alternative medicine is usually minimal, but some aspects may be covered for specific medical causes. Some examples of alternative medicine that may be used in place of mainstream medicine include chiropractic care, acupuncture, traditional Chinese medicine, herbal remedies, or touch therapy.

**Integrative Medicine**

Although the use of complementary and alternative therapies is on the rise and these practices are becoming more accepted in mainstream culture, there remains a divide between traditional medicine and complementary or alternative practices. While many practitioners and patients are seeking more ways to include both types of practices into their health care, there are just as many more people who stand by one method or the other, choosing either only traditional medicine as a means of treatment for medical illnesses, or selecting other forms of treatments and rejecting mainstream or conventional medicine entirely.

Integrated medicine seeks to combine the high quality, well-researched practices associated with conventional or mainstream medicine with an understanding of the concepts of health and wellness and how they affect a person’s physical, psychological, emotional, and spiritual wellbeing.
Integrative medicine, defined by Ernst in the *Journal of Internal Medicine*, is illustrated as:

“*Medicine that reaffirms the importance of the relationship between practitioner and patient, focuses on the whole person, is informed by evidence, and makes use of all appropriate therapeutic approaches, healthcare professionals, and disciplines to achieve optimal health and healing.*”\(^4^1\)

In essence, integrative medicine involves the healthcare professional working with the patient as partners in the patient’s care to address all influences that would affect the patient’s health. It does not simply focus on treatment or management of specific symptoms associated with one particular condition, but instead seeks a holistic approach that recognizes all potential factors affecting the patient’s state of health.

**Integrated Medicine Therapy Options**

Integrated medicine includes numerous types of therapies, encompassing a wide range of therapeutic options and treatments for patients. Because of the variability of options for therapies, patients may end up using some therapies that are recognized as proven treatments while others may be more suspect. Integrative medicine covers a variety of different medical treatments and techniques, some of which may be classified as being complementary treatments and others more mainstream. The options for treatment are numerous, with many being described and explained within this course. Regardless of the type of treatment implemented, it is the process of integrative medicine that is important, because it means that the practitioner is working with the patient to determine the best course of care for optimal health.
Supplements

As the name implies, supplements are additives or items that are designed to supplement an approach; in this case, supplements refer to dietary supplements, which are tablets, syrups, powders, or other elements that complement dietary intake. While they often take several forms, supplements are also available as different kinds, including vitamin and mineral preparations, botanicals and herbs, and probiotics.

Vitamins and Minerals

Often called simply ‘supplements,’ vitamins and minerals are normally found in foods but can also be prepared in certain amounts and packaged for sale. Consumers purchase vitamin or mineral supplements for the purpose of gaining extra nutrients. These products are called supplements because they are considered additives to the dietary intake of vitamins and minerals. When these supplements are taken, they are not meant to replace the nutrients found in foods. The population has long been aware of the value of vitamins and minerals, whether taken in through food or as supplemental tablets or powders. Multivitamins, children’s vitamins, and supplements designed to meet the health needs of almost any population, including men, women, pregnant women, menopausal women, or athletes, are all marketed as being helpful and that can be taken to support good health.

While some people have true nutrient deficiencies through malnutrition or because of some type of illness, most people could get the recommended vitamins and minerals they need each day through diet alone if they followed a healthy diet. Alternatively, vitamins and minerals can be added to dietary intake to manage certain health conditions, whether the illness was caused by a deficiency in a vitamin or mineral or if these nutrients could potentially manage symptoms of illness.
Most experts recommend getting enough vitamins and minerals through the diet, which can be done by following a healthy diet as recommended by a dietician or a nutritionist. A healthy diet should provide enough essential nutrients that extra supplements of vitamins and minerals are usually not necessary. If a person wants to take extra vitamins and minerals to support health and to manage an illness or injury, he or she may take in extra nutrients by eating highly nutritious foods or could use a dietary supplement.

Consumers should also remember that some vitamin or mineral supplements contain much larger amounts of these nutrients than the recommended daily allowance and if taken long enough, these supplements could lead to toxicity and poor health. The U.S. Food and Drug Administration (FDA) do not necessarily regulate such supplements, so even if a particular vitamin or mineral is thought to manage specific health problems, the manufacturer cannot make that claim on the package. Supplements can also be very expensive, and consumers may spend above what they would normally need for the same amount of a vitamin or mineral in food. Because nutrient supplements are well marketed as contributing to good health, consumers are often willing to pay more to take tablets and supplements on a daily basis, even if it is expensive.

Despite these facts, there are some populations of people who benefit from consuming extra vitamins and minerals, and there are specific nutrients that are helpful to manage certain symptoms of disease. Pregnant women, for instance, should take vitamin supplements that contain extra folic acid, as increased intake of this nutrient has been shown to decrease the risk of certain birth defects. A person who is anemic may need iron supplements to increase the iron in his or her body if enough iron cannot be consumed or
absorbed through diet alone. Individuals who are vegans may be deficient in certain vitamins and minerals, including vitamin B12, vitamin D, iron, and zinc, and would benefit from taking nutrient supplements.

Other health conditions that would also benefit from extra vitamins or minerals include lactating and breastfeeding mothers, postmenopausal women, women who experience heavy menstrual bleeding, those with little exposure to sunlight, and people with malabsorption conditions that have difficulty absorbing certain vitamins or minerals.

A person who wants to take in extra vitamins and minerals for good health or to manage a health condition should first research what benefits are associated with certain nutrients. It would also help to talk with a healthcare provider or dietitian who is knowledgeable about dietary supplements. The following vitamins and minerals have been associated with management of different types of health conditions and are often sought for their benefits in treatment:

- **Vitamin A**
  Topically, it is used in the treatment of skin conditions such as psoriasis and acne. It is also given in supplement form for people with measles who develop vitamin A deficiency and to prevent macular degeneration. It must be used carefully because it is toxic in doses higher than the recommended daily allowance.

- **Vitamin B12**
  Vitamin B12 is used for the treatment of pernicious anemia, in which a person is unable to absorb the vitamin. It has also been known to be helpful in the management of fatigue and male infertility, as well as prevention of coronary artery disease.
• **Vitamin B6**
  This water-soluble vitamin assists with formation of neurotransmitters in the body and may help some people with depression. It may also be beneficial in management of nausea and vomiting associated with pregnancy, and symptoms of premenstrual syndrome.

• **Vitamin D**
  A fat-soluble vitamin, vitamin D is responsible for working with calcium to support bone growth. It may be used for prevention of osteoporosis or other types of bone disorders, and for treatment of parathyroid gland disorders and seasonal affective disorder.

• **Vitamin E**
  This vitamin is known as an antioxidant, which means that it can protect some body cells against damage. It has been used in prevention of heart disease, Alzheimer’s disease, and certain types of cancer, including prostate cancer. It is also useful in the treatment of some eye conditions and in prevention of macular degeneration.

• **Calcium**
  Most known for its support of strong bones and teeth, calcium is one of the most common minerals found in the body. Calcium may be beneficial in the prevention of osteoporosis, premenstrual syndrome, high blood pressure, high blood cholesterol, and rickets. It is also used as part of treatment for parathyroid disorders.
• **Iron**  
Low levels of iron can lead to anemia, so this supplement is often used in the prevention of anemia, particularly among those at highest risk.

• **Magnesium**  
This mineral has been used successfully for the treatment of several health conditions, most notably preeclampsia in pregnant women. It is also helpful in the prevention or treatment of restless leg syndrome, heart failure, migraine headaches, fibromyalgia, and asthma.

• **Potassium**  
This mineral plays a special role as being an important nutrient for supporting cell growth and function, but also as an electrolyte that regulates heart function. Potassium supplements may be helpful in treating or preventing symptoms of inflammatory bowel disease, stroke, and high blood pressure.

• **Zinc**  
Zinc is considered an essential trace mineral and it is found in almost every cell in the body. It may be applied topically to help with some skin disorders, including diaper rash. Systemically, zinc supplements may improve symptoms of acne, colds, and sickle cell disease.

There are multiple other types of vitamins and minerals that have been studied for their health effects and for management of certain conditions. Some other examples include the B vitamins, vitamin K, biotin, iodine,
phosphorus, and selenium. There is no doubt that vitamin or mineral preparations can be helpful for those who seek good health. Since vitamins and minerals are known for their benefits when found in food, they could also provide some of the same benefits to health when taken as supplements.

**Botanicals**

Botanicals are plants or substances derived from certain plants that are used as part of disease management or prevention. A person who has a diagnosed health condition may consider botanicals as a form of therapy to treat symptoms of illness or disease. Additionally, another individual may choose to use botanical preparations as a form of prevention when there is greater risk of disease or illness. When botanical preparations are available without a prescription, a person who seeks to use these preparations needs only to research the most appropriate type for his or her condition. Botanical preparations are typically found at locations wherever herbal supplements are sold, including grocery stores, specialty markets, and pharmacies.

Botanicals are typically used in the United States for management of health and disease as complementary to conventional or mainstream medicine. Globally, people use botanical preparations as the main portion of their medical treatments in a number of different countries. Folk healers or traditional medical practitioners may administer botanicals as part of routine treatments. Some of the more common locations throughout the world where botanical sources are located include Mexico, China, India, and Europe. Truly, botanicals are considered one of the first forms of medicine and their use dates back to antiquity. Very early societies have gathered and collected plants and experimented with them in different formats to cure diseases and improve sickness, often through trial and error. Through word
of mouth communication, people have learned and passed along over time what plants have been best used for the treatment of certain conditions and what plants to avoid.

It has only been in recent history that botanicals have been studied more extensively through clinical research to confirm their effects. Today, botanical products can be successfully implemented into modern medicine, and their safety and efficacy is much more solid when they have been studied in the medical community. Many people can and do use botanical preparations in addition to mainstream medicine in order to supplement their care or to relieve some symptoms that mainstream medicine does not necessarily help. With more people practicing integrative medicine, botanicals are a viable option for treatment and for upholding health.

Most botanicals are classified as dietary supplements and are sold as herbal preparations in non-prescription format. However, there are some plant-based products that have been developed as pharmaceuticals and that are marketed and used as prescription medications. An example of an FDA approved drug that is a botanical is sinecatechines green tea leaf (Veregen®), which is used for the treatment of sexually transmitted genital warts. Botanicals that are used as herbal supplements and that are not regulated by the FDA cannot claim that they can be used specifically as treatment of disease, even if some people take them for management of certain conditions. These types of botanicals are classified as dietary supplements, and most botanical preparations are classified as these types, rather than as prescription botanical preparations.

Botanical medicines may also be referred to as phytomedicine, with the term _phyto_ meaning “related to plants.” There are various plants that are used as
part of phytomedicine, but the parts of plants used differ between types. The use of botanicals may involve the stems, leaves, flowers, bark, seeds, or berries of a plant. The components of certain plants and why they work in management of different diseases also vary. Some plants contain certain chemicals that have been found to be helpful; however, there are some plant products that have been shown to be effective, but the exact element of their composition that makes them effective has still not been isolated.

**Phytoestrogens**

Plant-based materials that contain elements that mimic some of the effects of estrogen are known as phytoestrogens. These elements are known as isoflavones and some products contain relatively large amounts of these compounds. These botanicals are sometimes used in the same methods as estrogen replacement therapy, such as when managing symptoms of menopause or premenstrual symptoms. Plant estrogens are most commonly found in foods containing soy, flaxseed, and red clover. Some of these products may be used to treat symptoms of menopause. For instance, soy-based products, because of their weak estrogenic effects, have been thought to relieve some symptoms of menopause, including hot flashes and night sweats.\(^{42}\) Soy protein and red clover have also had effects on cholesterol, and have been shown to lower levels of total cholesterol and triglycerides.\(^{42,43}\)

Another botanical that is a member of this group is black cohosh, which has sometimes been used to treat symptoms of menopause. The root of black cohosh has similar effects to those of estrogen, so that when used, it may relieve some symptoms of menopause, as well as premenstrual symptoms and menstrual cramping and pain. It may be particularly useful in treating hot flashes associated with menopause and it has been shown through some
research studies to be more effective for managing mood swings caused by menopause when it is combined with St. John’s wort than when used alone.⁴³

**Echinacea**

Another botanical that is becoming more popular in the United States for the management of upper respiratory infections is echinacea. Echinacea is derived from the coneflower and grows in the United States and Canada; it has long been thought to treat respiratory conditions such as the common cold or influenza, however research-based evidence as to its effectiveness is mixed. Those who support the use of echinacea in prevention and treatment of colds say that it stimulates the immune system so that the body is able to fight off infections more easily. It has also been used to treat minor wounds and skin problems.

Because of the inconsistency in results, echinacea cannot be supported definitively for use as preventive medicine against certain types of infections. Research is considering the effects of echinacea against certain types of cancer, with particular interest in protection against leukemia, but this benefit has not yet been scientifically proven.

**St. John’s Wort**

A well-known and commonly used botanical product, St. John’s wort has historically been used for management of mental health issues, including depression and anxiety. St. John’s wort comes from the flowering plant *Hypericum perforatum*, which produces yellow flowers and is native to Europe and the western United States. It is reportedly named as such because the plant tends to bloom on or around June 24th, which is traditionally known as the birthdate of St. John the Baptist. The reason why
St. John’s is thought to be effective may be because of some of its properties. It contains hypericin and pseudohypericin, both of which may be responsible for its activity, as well as its essential oils and flavonoids, which may also be beneficial. The specific components of St. John’s wort that makes it effective is not entirely known.

St. John’s wort has been shown to be effective in the treatment of depression, and some studies have shown it to be as effective as some selective-serotonin reuptake inhibitor antidepressants. It is possible that St. John’s wort works because it impacts levels of neurotransmitters, including serotonin and dopamine. In addition to management of depression, St. John’s wort may also be effective in the management of other conditions, including symptoms associated with menopause and premenstrual syndrome, seasonal affective disorder, and obsessive-compulsive disorder. It has also been useful in the treatment of minor burns and skin wounds.

As a precaution, St. John’s wort has been shown to cause some negative side effects in certain patients, particularly when it is taken with other drugs. The FDA has issued warnings about interactions of St. John’s wort with medications; for instance, it should not be taken with other antidepressants. St. John’s wort has also caused problems with the effectiveness of some types of drugs, including warfarin, asthma medications, and birth control pills. As with any other type of botanical preparation, the consumer should use St. John’s wort with caution and keep the healthcare provider informed about its use.

Gingko Biloba

One of the more popular botanical preparations available on the market, gingko biloba has been publicized as having many uses, with success in
management of conditions ranging from dementia associated with Alzheimer’s disease to improvement in circulation from peripheral artery disease. Gingko is a type of herb, and extracts are taken from its leaves or sometimes its seeds. It comes from an extremely old species of tree, and each tree has an incredibly long lifespan of up to 1,000 years, which means that people have used it for medicinal purposes for a variety of conditions for centuries.

Gingko has been shown to be helpful for some types of memory problems, particularly among older people and in those situations in which memory changes occur as a result of reduced blood flow to the brain. Its use also includes management of hearing disturbances, tinnitus, headaches, difficulties with concentration, and mood disturbances, as well as circulatory problems such as Raynaud’s syndrome and intermittent claudication.

There are too many botanical preparations available to name them all. Some are considered to be much more popular than others, however, there may be some types of products that people use routinely but their popularity is limited. Some other common types of botanicals used for management of illness or disease include:

- **Saw palmetto**
  This plant is known for managing symptoms of benign prostatic hypertrophy, including frequent urination and difficulties starting or stopping the stream of urine.

- **Kava kava**
  From the *Piper methysticum* plant, kava kava is said to improve mood and enhance relaxation. It may help some people who suffer from insomnia or anxiety; however, it should be used with caution,
as it has been shown to cause liver damage in certain groups and is not available for purchase in some countries because of this danger.\textsuperscript{45}

- **Valerian**
  This drug has been used among some people for the management of some types of sleep disorders, including insomnia. Valerian may cause increased drowsiness, and should be taken with caution. The person who uses valerian should only take it when planning to sleep and not before engaging in certain activities.

- **Ginger**
  The ginger root, as used for medicinal purposes, stems from early use in Asian medicine. It has been utilized as part of treatment for various maladies, including gastrointestinal conditions, arthritis, upper respiratory infections, premenstrual syndrome, and headaches. It is most commonly used in the management of nausea and vomiting from such conditions as motion sickness or pregnancy.

- **Primrose**
  This flower and its oil has been used to treat a variety of conditions, including bruises and minor wounds, hemorrhoids, arthritis, neuropathy, and premenstrual syndrome. Evening primrose oil purportedly contains gamma-linoleic acid, a type of omega-6 fatty acid.
• **Milk thistle**
  This Mediterranean plant is part of the ragweed family. Milk thistle is known as being beneficial for liver problems such as cirrhosis or jaundice, but it may also be used as a deterrent to elevated cholesterol levels and heart disease.

• **Chamomile**
  Most commonly used steeped in tea, chamomile is known for its action in the management of anxiety. It has a sedating effect and can produce a feeling of calm in the person who takes it. Chamomile may also be helpful for relieving stomach upset.

• **Garlic**
  Garlic is thought to have antibiotic properties and can produce antioxidant effects to protect the body.

These and various other types of herbal supplements may be implemented as part of healing or to promote health and wellbeing. However, they should be used only after careful research into their effects.

**Essential Oils**

Plant-derived essential oils are products of plants that may be used as part of aromatherapy. Aromatherapy involves the use of essential oils to support and improve physical, emotional, and spiritual health. Aromatherapy may be part of complementary treatments and combined with other types of alternative or complementary medicine, such as massage or meditation. Essential oils are classified as volatile substances because they contain chemical components that release specific odors. The amount of chemical
present in each type of oil is what gives the oil its specific fragrance and potential healing benefit.

Essential oils are extracted from the stems, roots, leaves, or flowers of plants, where they are used for aromatherapy. Contrary to popular belief, aromatherapy does not involve sitting and smelling the oils from the plant as a form of relaxation, although there are certain components of each type of plant used for essential oils that are found to be beneficial for certain purposes, such as for physical health and healing or for relaxation and stress relief. Instead, aromatherapy involves the use of essential oils in a number of measures, including inhaling the scent or having the oil applied topically to the skin. In some very rare situations, therapy involving an essential oil may be administered through ingestion of the oil.

The aromatherapy may be delivered through a number of methods. Some examples include placing the oil in a diffuser that distributes the aroma of the oil throughout the area, placing a small amount of oil on a cloth near the patient’s face to breathe in the scent, diluting a small amount of oil in warm water to create a mist that can be directly inhaled, or applying the oil directly to the skin during massage. The method of administration may also depend on the type of condition being treated. For example, a person using essential oils for the management of arthritis symptoms may apply a small amount of the oil directly on the site of pain, while a person using the oils for stress relief may relax in a room and use aromatherapy with a diffuser.

Historically, aromatherapy has been used in one measure or another for a wide range of disorders. Practitioners are said to have extracted oils from plants based on their understanding of the effects of different types of plants
on various body systems. Advocates of aromatherapy say that the practice can be used to treat any number of medical or psychological conditions, however, its routine practice has not really grown in popularity in Western countries until about the 20th century when more research studies were started to determine its effectiveness.

Theoretically, aromatherapy is said to support healing because of the connection between olfactory nerve stimulation and the limbic system of the brain. There is little doubt that the sense of smell can cause a powerful reaction in the brain and that use of certain scents has been shown to be effective in the treatment and management of many psychological conditions. The smell receptors in the nose communicate with the amygdala and the hippocampus in the brain to affect certain memories or to cause different emotional responses. It is thought that by inhaling the scents associated with essential oils, the parts of the brain that support mental health and some physical healing elements are stimulated, leading to positive health outcomes.

However, proponents of aromatherapy using essential oils state that the positive health effects gained from aromatherapy can only be garnered by using plant-based essential oils and not synthetic substances. Alternatively, researchers in the fields of biochemistry and neurobiology have found positive results from olfactory stimulation, whether the scent is from a plant-based essential oil or from a synthetic fragrance.46 The point is that essential oils may most likely be useful as part of healing and well being regardless of whether they are from actual plants or if they are synthetic substances.

There are many types of essential oils that are known to support certain health functions. As with botanicals used as herbal supplements, there are
too many essential oils to list them all. However, the more common types and their uses include those listed below.\textsuperscript{48}

- **Sandalwood**  
  This type of oil has a rich, woodsy smell that has historically been used as a fragrance. It has been used medicinally in the treatment of skin conditions and prevents dry or chapped skin. It may also be considered an antiseptic agent, disinfectant, and anti-inflammatory agent.

- **Lavender**  
  The scent of lavender is often used to support feelings of calm and relaxation. Some people use lavender oil to promote sleep and to treat insomnia because of its calming effects. Lavender is also known to be useful as a wound-healing agent and can be applied to minor skin wounds, burns, and rashes for its healing effects.

- **Rose**  
  Rose oil has a strong, pleasant scent that is inspiring and enriching. It is also used for skin care and it theoretically has anti-aging properties.

- **Lemongrass**  
  Lemongrass has a citrus scent and is sometimes used as an insect repellent. It allegedly has antimicrobial properties and is used for cleaning; when used in this manner, it then seems to create an uplifting and clean feeling to those in contact with the aroma.
• **Frankincense**
  A very old oil, frankincense has significance in Christianity. Frankincense oil is used to promote peace and relaxation; it may be burned as a form of incense, which is soothing and reassuring. Frankincense oil may also be used for some inflammatory skin conditions and as an immune system complement.

• **Eucalyptus**
  The eucalyptus leaf has a strong smell and it is often used to clear sinus congestion or as an expectorant for someone with a cough or upper respiratory infection. Eucalyptus as an essential oil is also calming and enhances feelings of relaxation.

• **Sage**
  Used for flavoring in foods and as an essential oil, sage has been known for its use to treat gastrointestinal upset and pain management, including the pain of labor or of menstrual cramps. Sage is also calming and promotes relaxation.

• **Fennel**
  The fennel bulb was historically used as part of spiritual warfare and for protection against evil spirits. Today, fennel is used as an essential oil for some medicinal purposes, including management of gastrointestinal conditions, and as an antimicrobial. Fennel is also added to some foods and has a sweet taste similar to licorice.

• **Patchouli**
  This oil has been suggested for a variety of purposes, including younger looking skin, improving overall feelings of wellbeing, and
relief of nausea and indigestion. It may also be used as an antidepressant and an anti-inflammatory agent.

- **Peppermint**
  Its use is most commonly associated with the relief of nausea associated with gastrointestinal illness or pregnancy. Peppermint may also be used for muscle pain and migraine headaches.

Aromatherapy can be used in the home or with a practitioner who offers the service individually or as part of another type of treatment, such as with massage therapy or acupuncture. There are no licensing requirements for aromatherapists in the United States, but when seeking a professional practitioner to help administer aromatherapy and who will perform the procedures competently and safely, a patient or consumer should look for someone who is either licensed in another facet of complementary or alternative medicine, or for someone who is part of one of the many aromatherapy professional organizations available that offer certification and training in this area.

Botanicals are used in many ways and can be taken by ingesting or inhaling the substance, or applying the botanical topically. When ingesting botanicals, available preparations include tablets or caplets of supplements, tea leaves or tea bags to steep in hot water, syrups of concentrated extracts that are either ingested alone or mixed with other fluids, lozenges that are designed to dissolve in the mouth, or tinctures, which are powdered forms of the botanical that are mixed with liquid. Essential oils are used as described by inhaling the scent of the botanical product or massaging it into the skin.
Some types of botanicals are used for skin treatments, such as with treating rashes or burns, and they may be applied directly to the skin for healing. An example of this is aloe, which is a succulent plant that produces a gel substance that can be applied to the skin and works as a salve for minor burns or skin irritation.

Although botanical preparations can be effective in managing some types of illnesses or conditions because of their properties, it is these properties that also can make them dangerous and can put the user at risk. While some botanical products work well with certain types of medications because of their components, it is these elements that can also negatively interact with other products and could cause further illness or toxicity.

In effect, botanicals have several purposes for which people seek their use, and some of these purposes may overlap each other in benefits. Botanicals are created to promote health and to prevent disease. There is a multitude of evidence available through clinical trials that demonstrate the effectiveness of botanicals in keeping people healthy and supporting nutrition, metabolic function, gastrointestinal health, respiratory well being, cardiovascular and circulatory health, musculoskeletal and skin functions, and immunity. Additionally, studies have shown the benefits of use of botanicals in treatment of cancer, infertility and sexual dysfunction, urinary tract infections, renal disease, and many mental illnesses.43

Many herbal preparations may not be well regulated. When a botanical product is classified as a dietary supplement, it is not regulated by the U.S. FDA, which means it does not have to uphold the same standards as drugs and medications. In this way, an herbal dietary supplement technically does not have to prove that it is safe or effective for the consumer.45 The areas
where some botanicals are grown, their location of manufacture, and the conditions in which they are packaged and shipped, could be substandard; thereby leaving the potential for risk of contamination.

Some products are nothing more than combinations of ingredients that may have a small amount of the plant within the mixture, but not enough to be effective. Because some preparations are not held to the same standards as pharmaceuticals, consumers must be very careful when choosing botanical preparations and taking these products for their health. In these cases, it is best for consumers to buy products from reputable companies, consult with others about what preparations have been most effective, and, importantly, always keep their healthcare provider informed about what products are being used in case there is a potential interaction between it and other mainstream treatments.

Alternatively, when botanical products are used correctly and the individual follows directions for their purpose of use, these items may be just as effective as some pharmaceutical preparations. Additionally, botanical products have the added advantage of fewer side effects than some types of drugs, and many people use them in place of medications because of cost. Before using botanical preparations, consumers must determine the costs, benefits, and goals for use to determine if these products will be beneficial for their unique personal situations.

**Probiotics**

The use of probiotics has been around for centuries, whether or not early peoples planned to use these mechanisms to benefit their health. When taken in through food, probiotics are usually found in fermented and pickled items, and the process of preserving foods in this manner has been used to
keep foods longer before techniques of refrigeration. In the 20th century, probiotics have been developed and marketed through the original work of Elie Metchnikoff, known as the Father of Probiotics. Metchnikoff was one of the earliest researchers to propose that ingesting probiotics through intake of microorganisms was actually beneficial to health by promoting wellness and managing some types of disease. The use of probiotics has long been popular in other countries, including some European countries and in Japan. It has only been in the last few decades that probiotics have become more popular and recognized in markets in the United States.

Within the body, “good” bacteria are present in the intestinal tract and are helpful in aiding the digestive process. Probiotics are useful for upholding the lining of the intestinal tract to produce a barrier, which serves a protective function; they work to stimulate vitamin B synthesis, and they are important for creating more beneficial bacteria and suppressing the growth of pathogenic bacteria. They support the immune system and not only create cytokines such as interleukin-10, which acts as a protective mechanism, but they also suppress some other inflammatory cytokines, such as tumor necrosis factor.

When the normal flora in the gut maintains homeostasis, the intestinal tract works as it should and the person typically has a healthy digestive system. There are some situations, though, when the levels of microbial flora are altered; when this occurs, the person may suffer health consequences. Normal levels of microbial flora may be changed when a patient takes antibiotics. The drugs are designed to kill pathogenic bacteria that have caused an infection, but in the process, they may also kill the beneficial bacteria in the gut.
Bacterial levels are also changed with the administration of prebiotics or probiotics. Probiotics refers to the addition of beneficial bacteria to the intestinal tract, whereas prebiotics are dietary elements that, when ingested, can stimulate the growth of beneficial bacteria in the intestinal tract. The World Health Organization defines probiotics as live microorganisms that are beneficial to health when present in adequate amounts. Probiotics are mostly bacteria, but they may be other types of microorganisms that are present in the gut. When compared to other types of microorganisms that invade the body and cause disease, probiotics are those that are beneficial and stimulate good health. The intestines typically contain over 500 different kinds of bacteria that are part of healthy and normal flora.

Probiotics are promoted as being beneficial to gastrointestinal health and have been used for a number of GI conditions, including irritable bowel disease, ulcerative colitis, Crohn’s disease, and infectious diarrhea. Among patients with inflammatory bowel conditions, such as ulcerative colitis or Crohn’s, probiotics have been shown to inhibit pro-inflammatory cytokines, potentially improving symptoms of these painful conditions. Despite their popularity of use for these conditions, they are technically not approved by the U.S. FDA for treatment of any of these situations. According to the National Center for Complementary and Integrative Health, probiotics have also been researched to determine their appropriate use in a number of health conditions, including gingivitis, atopic eczema, respiratory infections, side effects of treatment for Helicobacter pylori infection, obesity, elevated cholesterol levels, dental caries, and necrotizing enterocolitis.

Further studies have shown that probiotics may provide a mild amount of pain relief by modifying the body’s response to certain types of pain. Probiotics made of Lactobacillus have been shown to alter some pain
receptors in the gut to produce a mild opioid effect and provide some pain relief for certain gastrointestinal conditions. Based on the number of potential health benefits and control of various diseases and conditions, there may be no limit to the benefits of probiotics in managing health and wellness.

Probiotics are necessary for proper immune functioning and are a natural part of the body. At birth, newborn infants acquire some immunity from their mother through breastfeeding, when some of these bacteria are transferred to the infant’s body by eating. As infants grow, their immunity can increase as more substances are consumed that contribute to healthy gut flora and the presence of beneficial bacteria. By two years of age, a child should have most of the gut flora needed that will continue to reproduce and maintain a healthy population of microorganisms in the gastrointestinal tract as he or she grows.

The number of microorganisms in the intestinal tract can be increased or decreased based on activity, diet, and use of nutritional supplements. A person may experience a decrease in gut flora if he or she encounters stress or severe illness, or if excessive amounts of antibiotics are taken, which can diminish the number of microorganisms in the intestinal tract. Stress and illness contribute to poor immune function and can also decrease healthy microbial flora, leading to increased risk of disease and chronic illness. Alternatively, ingestion of beneficial bacteria through probiotics may strengthen the immune system of the gut and may counteract some of the effects of stress on these microorganisms.

Probiotics are actual bacteria that a person can ingest to improve the number of microorganisms in their body. There is a risk that ingestion of
bacterial microorganisms may have a deleterious effect and could cause further illness, rather than strengthen the body. Consequently, consumers should know that it is important not assume ingestion of any type of bacteria will produce positive benefits to the gut, because doing so may actually cause much more harm than good. Instead, probiotics must have certain characteristics in order to be classified as being beneficial to gut flora in the body.

The following criteria are part of the process in order for a microorganism to be considered beneficial bacteria as a probiotic.

1. The microorganism must already be shown that it is not harmful and can be ingested. Researchers have found a number of bacteria that are considered beneficial and are used as probiotics, such as *L. aciophilus*, *B. infantis*, when compared to those that can enter the body and cause serious disease, such as *E. coli*.
2. The bacteria must be able to survive the processing required and to be sustained within a food during the shelf life of the food.
3. After ingestion, the microorganism should still be alive in the gut and not be destroyed through the digestive process.
4. The bacteria are able to bring some type of positive response in the gut, rather than just being present.
5. The microorganism has been shown to cause positive benefits and not negative ones when in the body.

There are a number of different types of microorganisms that are available as probiotics. A person who is interested in starting probiotics for health should talk with a physician about the use and the potential effects of taking probiotics on other body systems and medications. However, most people are able to obtain probiotics very easily and tolerate them well. Some of the
main types of probiotics available on the market today include those that come from the *Lactobacillus* or *Bifidobacterium* species and include *L. acidophilus, L. casei, L. reuteri, B. animalis, B. infantis,* or *B. lactis.*

When probiotics are present in food, the person can eat the food and derive the benefits of the microorganisms. Some products are publicized as having probiotics and of being beneficial to health. In these cases, they must be labeled as containing probiotics or as being beneficial. Often, products such as yogurt that contain probiotics may have labels that state that they contain live, active cultures. In fact, the National Yogurt Association has developed a seal that states the product contains live, active cultures, which makes identifying probiotics present in cultures very easy for consumers to recognize. Yogurt is one of the most well-known products available that contain probiotics because it is made up of live cultures. By labeling yogurt products, manufacturers can not only promote their items, but can also educate the public about the importance of probiotics on good health.

Yogurt is not the only product that contains probiotics. Other items, particularly those in the dairy department, also contain probiotics as a natural part of their compositions. Some examples of these items include kefir, a type of fermented milk made of cow’s milk and fermented with bacteria, soy yogurt, which is not made from dairy but instead consists of soybean milk that has been fermented, and tempeh, which contains cooked soybeans made of a special type of starter culture from the *Rhizopus* mold. Other products, including those that have been fermented, may also have the benefits of probiotics. The process of lactic acid fermentation, which is used to create such foods as sauerkraut or cheese, enhances the micronutrients of these types of foods. When these foods are fermented, they provide more nutrients than if they were eaten plain. For example, a
person who eats sauerkraut, which is fermented cabbage, may take in more vitamin C and vitamin A than by eating plain cabbage. *Lactobacillus* bacteria have the special ability to change some of the sugar in food into lactic acid.

Lactic acid acts as a preservative, which is why fermented foods can last much longer when compared to fresh foods. Lactic acid also protects the food from growth of some types of harmful bacteria, enhances the levels of some types of vitamins in these foods, and improves their ability to be adequately digested. Examples of fermented foods that can contribute probiotics when eaten include soured grains, kimchi, kombucha, sauerkraut, and miso.

In addition to the probiotics available in certain foods, a consumer may take in probiotics through supplements that are available for purchase. These supplements often provide the addition of several billion bacteria of probiotics per dose in the form of capsules, tablets, syrups, or powders that are added to beverages. They do not require a prescription and can usually be purchased over the counter at health food markets, in grocery stores, and at pharmacies. The long-term health benefits and the safety of probiotics are still being researched and there is still little evidence as to the lasting outcomes of recurrent use. Most probiotics produce few side effects, which can be helpful for the consumer taking supplements or including them in the diet, however, some people with chronic health conditions or those who are immunocompromised may be at risk of negative consequences of their use.

An individual who wants to try probiotics for health purposes should consult with a healthcare provider before starting, although probiotics have been shown to be quite safe to use for the general population. Because the FDA
has not approved any probiotics for the treatment of specific conditions, the healthcare provider may not necessarily prescribe probiotics for specific use; however, the provider can make recommendations based on knowledge of research outcomes and evidence-based practice as to which kinds of probiotics might be most beneficial in certain situations. The effects of probiotics can also vary between people. One person may have very positive effects and may use probiotics routinely for good health, while another with the same condition may have little to no benefits at all. It is important, then, that a person seeking to use probiotics consult with a healthcare provider to manage their health with probiotics and any other measure taken to support health and to manage disease.

**Mind/Body Treatments**

Mind/body treatments describe those activities that connect the actions of the body with thoughts or feelings. These types of treatments are those that involve interactions between the brain and behavior. Most types of mind/body medicine is based upon an understanding that the behavior performed, which is the particular method or form of complementary or alternative medicine, will positively impact the patient’s thoughts and feelings. Mind/body medicine is meant to use physical means that affect the body to impact the emotional or psychological needs of the patient, however, these types of treatments also can positively impact the patient’s physical condition as well.

As an example, acupuncture is a type of mind/body therapy that uses a physical process that affects the body (the insertion of acupuncture needles under the skin) to affect a person’s health and well-being. The practice of acupuncture is designed not only to help the person’s physical condition by impacting the flow of energy throughout the body, but it also can provide a
sense of calming and stress relief, which helps the patient’s emotional state. Furthermore, the emotional relief in turn then again affects the physical body, as the patient is not struggling with the negative effects of stress and anxiety.

**Acupuncture**

One of the most well known methods of complementary or alternative medicine, acupuncture describes a group of procedures that are used to treat symptoms of many types of diseases and conditions. Acupuncture is a form of Traditional Chinese Medicine and it originated in China approximately 3,000 years ago. It spread into other parts of Asia and the Middle East, being initiated into Korea and Japan during the 6th century AD. The practice slowly made its way to the United States and gained in popularity, particularly during the 1970s after President Nixon visited China and a colleague who traveled with him received acupuncture during the trip. The colleague was actually James Reston, a reporter for the *New York Times*, who was so impressed by his treatment that he wrote a piece about acupuncture after he returned home. The ideas about the importance of this method soon spread and gained popularity.

Acupuncture asserts that every person has an inner life force known as *qi*, which flows through certain pathways in the body that are known as meridians. Each meridian has a connection to one or more organs and so is associated with certain body functions. A person is said to have good health when he or she has a proper flow of *qi* in the body. Alternatively, an imbalance in the level of *qi* can lead to disease and other problems. An imbalance of *qi* may occur if there is too much or too little, or if the meridians are somehow blocked that would affect the flow of *qi*. Acupuncture involves the insertion of needles into various parts of the body along the
lines of meridians. The points of needle insertion are considered the areas where the meridian flows close to the surface of the skin and can be reached when a needle is placed.

There are a number of different styles of acupuncture that could be used for management of different conditions, depending on the training and preference of the practitioner and the patient’s condition. Some styles have evolved from a region of the world in which they were developed, while others include specific elements that are part of the process and that distinguish the specific form based on the tasks involved. As described, Traditional Chinese acupuncture is the most common form of acupuncture utilized in the United States and is typically what most people think of when they consider the word “acupuncture.” Other styles also include those listed below.

**Japanese Acupuncture**

Japanese acupuncture involves the same process of inserting fine needles, but the needles are usually placed in positions that are more shallow when compared to Traditional Chinese acupuncture. This type of acupuncture involves palpation of reflexes to help the practitioner establish a diagnosis and to determine if the treatment is effective.

**Moxibustion**

Moxibustion is a type of acupuncture that involves needle insertion, but the needles are heated before they are placed in the skin. The acupuncturist uses an herb called mugwort, which is burned and the needles are placed near the flame to heat them.
Electro-acupuncture

Electro-acupuncture also involves placement of needles into the skin and then passing an electrical charge between the needles. This is facilitated by a small wire, which connects each of the needles after they are inserted. The electric current passes through the wire and then down the needle to stimulate the area under the skin. The patient often feels a tingling sensation when this type of acupuncture is used, but not necessarily pain. The electrical charge is very small but is significant enough to stimulate the tissues being manipulated by the acupuncturist.31

Korean Hand Acupuncture

Korean hand acupuncture asserts that a person has more meridians and, therefore, more qi in the hands and feet. Therefore, this type of acupuncture concentrates many of the needle insertions into these areas instead of in other parts of the body and other meridians. It is believed that even though only the hands or feet receive the needles, the effects can still impact the rest of the body.

Auricular Acupuncture

Auricular acupuncture involves insertion of needles into the outer part of the ear, or the auricle. This type of acupuncture is based on the belief that parts of the outer ear are associated with internal organs and so by inserting needles into that area, it affects different parts of the body.

Medical Acupuncture

Medical acupuncture is a combination of French energy acupuncture and Western medicine. Physicians or professionals in the medical field who have extra training in this area typically perform it. The practitioner palpates the
area to determine a diagnosis and to discover the areas of concentration before placing the needles.

*Trigger Point Therapy*

Trigger point therapy, also called myofascial pain therapy, locates areas that are active triggers of pain, typically found within certain muscles. The pain may be elicited when the practitioner manipulates the area, or the patient may suffer from pain in a certain spot all the time or experience referred pain to another area of the body.\(^{32}\) Trigger point therapy involves the therapist seeking to find these pain triggers and then inserting a needle into the point to stimulate the area; at times, the practitioner may inject fluid or medication through the needle. The process differs from traditional acupuncture in that the practitioner is seeking specific points of pain that are triggers but not necessarily inserting needles in points along the meridians.

*Cupping*

Another method that should be mentioned is the process of cupping, which is not the same as acupuncture in that it does not involve insertion of needles; however, it is used to provide similar outcomes as acupuncture because it stimulates the flow of qi through a physical process. Cupping is an ancient Chinese practice that was originally started as a complementary healing approach when a patient had some form of surgery. A practitioner often used cupping to treat boils and infections to draw out impurities from under the skin. Ancient texts about cupping have also stated that the technique was used for various other maladies, including treatment of breathing problems and for help after a snakebite.\(^{33}\)

The process of cupping involves using cups to create suction on the skin. A substance is placed inside the cup and is lit on fire; it burns very quickly and
makes the inside of the cup hot. As soon as it goes out, the cup is placed on the person’s skin. When the inside of the cup cools down, it creates a suction effect against the skin. The blood vessels in the area are dilated and the skin becomes very red. The cup is left in place for several minutes and then removed; however, the skin remains red and a red blotch is present for several days afterward.

Cupping is said to improve the flow of qi in the body and it is performed to rid the body of illness and certain types of disease. According to the Academy of Classical Oriental Sciences, cupping affects the flow of blood and the flow of qi, drawing out certain factors, such as wind, damp, heat, and cold. By opening the pores of the skin, cupping facilitates removal of pathogens out of the body. Cupping may be performed by using cups made of glass or earthenware pots; early cups were made of bamboo or animal horns. Most people who undergo cupping say that it is not painful, but instead it feels freeing after the cups are removed; the process leads to a sense of release and liberation. Cupping may be performed at locations where acupuncture is provided. It is also done at other locations where massage therapy is performed.

Like cupping, acupuncture controls the flow of qi and can improve health and healing in the affected person. The exact mechanisms of how acupuncture works are not exactly clear. Its success could be related to the stimulation of certain nerve fibers in the central nervous system when the needles are inserted into the skin, leading to the release of specific hormones that can improve feelings of well-being and could lead to improved health. There are, however, several theories as to why people experience the benefits of acupuncture. Although the traditional Chinese explanation of qi is not always accepted in Western medicine, there has been research that there is a group
of electrical pathways found in the same matrix design that Chinese physicians would say are the meridians. There is not a lot of scientific evidence that supports the theory of an electro-conductive system, but it does give credence to the idea of meridians and the flow of qi through the body. Whatever the exact reason for how acupuncture works, and whether or not the reason is ever accepted in Western society, the procedure has been shown to be beneficial to most who seek it for treatment.

**Success of Acupuncture**

Acupuncture has been shown to successfully treat a number of health conditions, and research studies are ongoing in many areas that try to uncover even more information about its power. Acupuncture has been recognized by the National Institutes of Health as a valid and mainstream method of healing since 1997. In addition to this validation, acupuncture has been recognized by the World Health Organization as being helpful for a number of health conditions, including such conditions as nausea and vomiting that occurs after surgery, or management of such conditions as chronic constipation, fibromyalgia, menstrual irregularities, spastic colon, bronchitis, urinary incontinence, carpal tunnel syndrome, and sinus infections. Additionally, acupuncture has been shown to be beneficial for a number of other disorders and conditions, including some mental health disorders such as depression or anxiety, acute or chronic pain, infertility, gastrointestinal disorders, such as reflux, hypertension, insomnia, and sensory disturbances.

One area where acupuncture has been used is in treating women who are struggling with infertility. Although traditional mainstream medicine has a number of medical treatments available, including the practice of assisted reproductive technology (ART), acupuncture has also been shown to help
some patients who suffer from infertility. A study found in the *European Journal of Integrative Medicine*, performed in Hong Kong, used acupuncture as a method of infertility treatment and compared the results to women who used traditional Chinese medicine as treatment for their infertility. The study found that 67 percent of patients that received acupuncture treatments, whether or not they were supplemented with Chinese medicine, became pregnant by the end of the study. The study did not classify the reasons for infertility into different categories and some of the women had diagnoses consistent with Eastern medicine analysis, such as an imbalance of qi being the major reason for infertility. Still, the study showed that acupuncture could be a potentially effective form of treatment for infertility with or without other forms of medication.

**Acupuncture Procedure**

During a session of acupuncture, a patient often lies on a table while the acupuncturist inserts the needles. Prior to the first session, the patient may meet with the practitioner to discuss his or her purpose for seeking acupuncture, what outcomes would liked to be achieved as a result of using acupuncture, expectations for the process, and any health concerns that might exist. After discussion, the practitioner may be better able to determine how to proceed with the process and will have a better idea of where to place the needles along the lines of the meridians.

The session may last approximately an hour. The patient typically rests while the needles are inserted; this requires baring the skin in at least the area of needle insertion. The acupuncturist inserts the needle relatively quickly and may twist or twirl the needle slightly upon insertion. Needles can be of different sizes and diameters; the size of the needle and the depth to which it is inserted under the skin depends on the patient’s condition and the
patient’s body constitution. Some people say that they feel a small amount of pain when the needle passes through the skin, but it quickly disappears after the needle is in place. Acupuncture is not meant to be a continuously painful experience, despite its appearance and the use of needles to puncture the skin.

After the needles are inserted, the patient usually rests in place for several minutes or up to an hour. This is a relaxing time for the patient to feel calm and rested during the process. After the session is complete, the practitioner removes the needles by quickly pulling them out of the skin. The number of times that a person needs acupuncture sessions varies, depending on his or her health condition and overall goals for treatment. Some patients with relatively minor conditions may be successfully treated with only one session. Alternatively, there are some patients who have acupuncture on an ongoing basis for preventive measures and to support good health.

Acupuncturists are licensed practitioners, and most have undergone the appropriate training and testing to become licensed (with a LAc) when in the United States. When seeking acupuncture, a patient should work with a licensed practitioner, particularly someone who has experience with his or her specific condition, if treatment is needed of a health condition. Acupuncture is performed using sterilized or disposable needles to ensure safety and infection control. Many patients are able to easily find acupuncturists in their area when they need services, but the costs may or may not be covered by insurance. The patient who wants to use acupuncture may need to find the right practitioner who is affordable but who also can help with the patient’s health needs.
Massage Therapy

Massage therapy, the therapeutic application of touch through massaging the muscles and tissues, is another common form of complementary or alternative therapy. Massage therapy may sometimes be referred to as bodywork or somatic therapy, but Braun and Simonson, authors of the book *Introduction to Massage Therapy*, suggest that there is a difference between the two techniques. Bodywork involves manipulation of body tissues to maintain or improve a person’s health; but because there are so many types of techniques that can be considered bodywork, it is not classified as being the same as massage therapy. On the other hand, massage therapy seeks to improve or maintain a person’s health by the application of manual pressure on various parts of the body; this process is combined with touch of the therapist to enhance overall healing and to promote optimal wellness. In other words, massage therapy may be considered a form of bodywork, but not all methods of bodywork are types of massage. As a result, massage therapy is more than manipulation of tissues and “rubbing” various muscles and parts of the body, but it is considered to have additional healing properties because of the importance of touch.

Records and artifacts point out that forms of massage have been in existence since ancient times. Evidence that massage was practiced as part of certain rituals has been found throughout the world from ancient civilizations in Australia, Egypt, Asia, Eastern Europe, and North and South America. Massage has historically been used as a healing technique for persons afflicted with illnesses or diseased states and for those who have been injured, as well as for people who have suffered from spiritual afflictions and needed physical, emotional, or psychological cleansing.
Over time, massage techniques became more common with physicians and with massage practitioners throughout history developing new techniques, using them on patients for healing and for help, and spreading information about the benefits of massage. Today, massage is considered a legitimate practice and its use of touch is accepted and even supported by the medical community. Massage therapy can be performed through private practice, such as what is done in private clinics or spas across the country; however, it is also successfully implemented into healthcare and rehabilitation programs because of its recognized power in promoting healing.

Touch has been shown to be essential to human development and appropriate growth. The lack of touch has also been proven to cause developmental delays, failure to thrive, and increases in emotional problems, including anger and depression. Human touch can be used to promote comfort, to enhance self-esteem, and to communicate emotional signals. Touch provides a comforting element to both infants and children, as well as to adults, which is why it is so fundamental to massage therapy.

Anyone who has experienced a bump or bruise on a part of the body and who instinctively rubs the area as a method of comfort is familiar with the concept of massage. Massage therapy is performed to bring out the comfort and healing that comes from manipulating certain body tissues and muscles. There are various massage techniques that may be helpful and they can range from soft and mild strokes on the surface of the skin to deep tissue massage that manipulates muscle and subcutaneous connective tissue. The massage therapist may use complementary techniques along with the massage, such as by applying heat or cold to the massage site or using oil for lubrication.
Although there are a number of techniques of massage therapy, some are more common than others. The most common form of massage performed is Swedish massage, which consists of a series of strokes that stretch the ligaments and tissues and promote blood flow to the heart. Swedish massage may involve skin stimulation, kneading of the muscles, tapping the fingers against the skin, or using friction or vibration on the tissues. Another common form of massage is deep tissue massage, which focuses on both superficial and deep layers of the muscles. This type of massage may be used for relieving tension at certain points, particularly if a patient is experiencing muscle pain and stiffness. Because of deep tissue manipulation, the patient may feel sore afterward.

Myofascial release is performed to manipulate the layers of fascia surrounding the muscles. The massage therapist may stretch the tissue and apply pressure to specific areas to target the underlying fascia. This type of massage is performed to relieve pain and tension and to help the patient to relax. Shiatsu massage is a type of Japanese massage that involves application of pressure to specific points on the body to enhance the flow of qi. The shiatsu therapist uses rhythmic motions when applying pressure with the fingers or the palms. This type of massage has also been used for pain control.

There are approximately 100 different types of massage techniques that may be delivered in various settings and with specific purposes in mind. Some are designed to target specific areas of the body that are causing pain or tension, while others may promote circulation, stimulate the skin, or improve flexibility. Some other forms of massage that may be considered include craniosacral massage therapy, which promotes circulation of cerebrospinal fluid by applying pressure to the head and spine; trigger point
massage, which identifies particular areas of the body that are causing problems and applies direct pressure to alleviate pain or muscle spasms; lymphatic massage, which follows lymph channels and is designed to stimulate the flow of lymph circulation; and hot stone massage, which involves application of hot stones on the back for muscle relaxation while the therapist massages the muscles.

Massage may be used to help with pain control when it is delivered deeply enough to stimulate the tissues under the skin that contain pressure receptors. These receptors send messages to the brain that stimulate the release of neurotransmitters, including serotonin, that can relieve pain and reduce stress. Massage has also been shown to promote healing of damaged tissue by the transmission of electrical signals that are created when someone massages an area of soft tissue. These effects cannot only heal damaged tissue, but they have also been shown to support the immune system, improve circulation, and enhance feelings of wellbeing.

Massage has been used as a form of complementary treatment for a number of health conditions, including fibromyalgia, chronic low back pain, and arthritis. It has been shown to improve sleep among people suffering from sleep disorders, used for relief of constipation when the massage is centered on the abdominal area, and may help to relieve some mental health conditions, such as depression. Massage can release stress and improve productivity, as well as mental alertness, and it has been demonstrated to help with lowering blood pressure in people with hypertension.

Massage is frequently implemented as part of physical therapy because it can help to restore function in some areas of the body damaged through musculoskeletal disease or injury. A physical therapist may use some types
of massage to help with range of motion and flexibility when a patient has an injury; massage is often incorporated into rehabilitation processes when a person is recovering from a musculoskeletal condition.

Because of how common pain is associated with various types of cancer, massage therapy has also been successfully used in the management of pain for cancer patients, particularly when conventional treatments such as pharmacological measures do not bring total relief. A meta-analysis by Lee, *et al.*, in the journal *Integrative Cancer Therapies* showed that massage therapy can significantly reduce cancer pain, in particular, that pain associated with cancer surgery, when compared to not using massage therapy or when using conventional pain treatments alone. Based on this information, patients with advanced cancer and those suffering from severe pain because of treatments may have further options for pain control and increased comfort through complementary medicine by incorporating massage into treatment.

Although almost anyone can perform massage on another person or someone may even perform self-massage, the most common methods of massage delivery are through trained practitioners who often have certification in specific methods of massage. When the patient is suffering from pain or other negative effects of illness and is seeking treatment and healing, the patient may have a better outcome and may be less likely to be injured if he or she seeks the services of a trained massage therapist.

A massage therapy session takes place in a location that is often designed to be calming and to help the patient relax, although this is not a mandatory requirement. The patient may sit or lie down while the massage therapist performs the massage, depending on the area of focus and the type of
massage administered. Some offices or locations that provide massage offer quiet and restful environments where the patient lies on a table in a room and is partially unclothed for the massage. The therapist often uses oil or lubricant to avoid too much friction with the skin and to keep the patient comfortable. While this may describe the typical massage therapy session, there are a great number of variations in which massage can be administered. When done safely and correctly, massage is a valid form of complementary or alternative therapy that can greatly improve a patient’s health.

**Meditation: Benefit To Health And Healing**

Meditation involves the complete focus on some type of stimulus in order to focus on the self and develop awareness of self. Meditation may involve focus on one distinct thought or idea or it may involve focus on a repetitive thought, word, or phrase. People may practice meditation for a number of reasons, including supporting health and wellbeing. The exact reasons why meditation seems to enhance good health are not clear, but researchers do know that some people experience changes in the autonomic nervous system when they meditate. People seem to have lower levels of the sympathetic response, which is the fight-or-flight response that causes elevated heart rate and respiratory rate; alternatively, they may have higher levels of the parasympathetic response with frequent meditation, which leads to dilation of the blood vessels and improved blood flow, and slowing of the heart rate and respiratory rate.

There are a number of different types of meditation that a person can employ. Often, the choice is based on how much the person has learned about a specific type or the amount of experience had with one type of
meditation over another. Some examples of types of meditation are Transcendental Meditation, mindfulness meditation, Zen, and guided meditation. Additionally, meditation is also practiced as some other forms of complementary or alternative techniques, such as with some forms of yoga or with Traditional Chinese Medicine.

The practice of meditation developed because of Eastern philosophies; it is consistent with Buddhism, Taoism, and Hindu beliefs and is thought to have started within those belief systems. Meditation increased in popularity over time and eventually moved to the United States and Europe, becoming popular in the U.S. during the 1970s. Although meditation has traditionally been associated with religious practices — and it is still practiced for those purposes among some cultures — other people practice meditation for a variety of reasons that are not associated with religious or spiritual purposes.

Meditation is not the same as relaxation. A person who practices techniques of relaxation may seek to control stress levels and may use the practice to induce a physical relaxation response from the body. Alternatively, meditation may be relaxing and can be a form of stress relief for the individual, but its purpose is to focus on the self and to remain attentive to the present moment. In order to practice meditation appropriately, a person needs certain elements to be able to quiet the body and focus the mind. These may include the following:

- Quiet Environment

  This is often necessary to promote concentration and to reduce the number of distractions in the area. A person who is not accustomed to
meditating may have a difficult time concentrating while still learning the techniques and would most likely need a very quiet environment.

- **Position of Comfort**

  This is a position in which the meditating person can relax and not be distracted by body posture or discomfort from a sitting position. Meditation can be performed with the person sitting, lying down, standing, or using another position that is most comfortable.

- **Area of Focus**

  To effectively meditate, the individual needs to have something to focus on, or an item or thought in which to direct attention. A mantra is a set of words that is repeated, whether out loud or over and over in the mind. The person meditating repeats the mantra to better focus. However, the individual does not necessarily need a mantra, instead, the focus could be on any type of concept, thought, or action, or simply just concentrating on whatever topic is at the forefront of the mind.

- **Open and Receptive Mind**

  The person should be open and receptive to the effects of meditation and completely focus on the idea or topic. This may mean becoming aware of distractions in the environment, but then choosing not to focus on them and simply letting them go. It involves maintaining focus by bringing the mind back to the topic if the person becomes distracted. Being able to focus and being receptive to the effects of meditation are crucial to a successful experience.
A person who wants to meditate can do so almost anywhere and under different circumstances. Meditation does not necessarily require a facilitator or teacher to lead the student when he or she wants to meditate. Instead, individuals who desire to learn more about meditation and its effects may read or study the concepts associated with the practice and apply them on their own, at their own leisure. The person may spend time practicing meditation and adjusting techniques to perfect the mechanisms of the appropriate form and to enhance the function of meditation to achieve positive results.

Of the different forms of meditation, Transcendental Meditation may be one of the most well known and it is the type that is most often touted as being beneficial to health and wellbeing. Transcendental Meditation began in India with a spiritual leader named Maharishi Mahesh Yogi, who developed its concepts. The practice was brought to the United States during the 1960s.

When a person performs Transcendental Meditation (TM), he or she purportedly transcends into a state of pure consciousness and leaves the patterns of ordinary thinking. This meditation is performed using a mantra, in which the individual repeats the same word or phrase over and over while sitting in a comfortable position with the eyes closed. Transcendental Meditation is not a type of religion. Those who perform it say that it leads to a sense of great calm and peace. It is often taught in a class or with certain groups that have a leader who guides those meditating into the correct techniques.

The TM group may meet on a regular basis to continue to meditate together but also to correct any errors in technique. TM may be associated with a reduction in chronic pain, control of anxiety and high blood pressure, and a
decrease in the need for healthcare services.\textsuperscript{37} However, reports of its success with treating certain kinds of health conditions vary between individuals.

Another popular form of meditation, \textit{mindfulness} meditation is also thought to have started in Eastern traditions but has moved to the West and is becoming more popular as an everyday activity. Mindfulness involves the practice of being in the present and avoiding unconscious activity, such that the person is always aware what he or she is doing at any given moment. Many people go through life with multiple overwhelming thoughts going through their mind on a daily basis; they may perform routine activities, such as driving or eating, without even thinking about it because these actions are so automatic. Mindfulness seeks to stop unconscious activity and instead focus on the here and now, with awareness of what is happening every moment. A person can practice mindfulness in any activity or may stop an activity on occasion and take time to focus.

Mindfulness meditation, in addition to becoming consciously aware of a person’s own actions and surroundings, also requires an open mind and attitude toward whatever the situation may be. When practicing mindfulness, the person recognizes what is going on in the present moment and accepts it without judgment.\textsuperscript{39} For instance, a person who practices mindfulness may recognize that he or she is feeling annoyed with a co-worker who talks too much and who seems to dominate the time of other people. Through mindfulness, the person recognizes inner feelings of annoyance but also needs to accept the existing feelings in a given situation. However, a mindful person becomes aware that inner feelings should not dominate a person’s total self, absorbing his or her mood and behavior; and,
becomes able to separate feelings in any given circumstance from the overall picture of everyday reality.

As with Transcendental Meditation, mindfulness does not require a certain set of belief patterns and can be done anywhere at almost any time. Because it requires a conscious will to avoid reacting and becoming consumed by feelings and remaining impartial to thoughts, the person practicing mindfulness must spend a good deal of energy applying the method with intention and with self-discipline. Mindfulness meditation is said to work because it can potentially change the brain’s ability to adapt when practiced on a regular basis. Regular practice of mindfulness has been shown to improve resistance to stress as well as emotional regulation, leading to greater success with changes in brain function that eventually lead to positive changes in the person’s behavior.\textsuperscript{39}

Additionally, mindfulness meditation may help with symptoms of depression and anxiety by helping an affected person to control ruminating or overtly negative thoughts. This type of meditation can help with depression because the patient may be able to recognize his or her negativity as it is related to depression and, with practice, the person could come to accept feelings of sadness or worry as being only feelings and can refrain from harshly judging those feelings. Instead, persons practicing mindful meditation may accept his inner feelings as they are and could be more likely to accept their own personal state of being.

Other benefits that have been associated with mindfulness meditation include increased antibody production, resulting in stronger immunity, control of eating disorders, and improvements in sleep habits.\textsuperscript{39,40} A study by Brand, \textit{et al.}, in the journal \textit{Neuropsychobiology} measured cortisol levels and
sleep quality in study participants. The research participants practiced mindfulness meditation; and, among those who had never practiced the method, they were given an introductory course on how to perform the techniques. The study found that participants who practiced mindfulness meditation, morning cortisol levels decreased and they reported significantly improved sleep habits.\textsuperscript{40}

Healthcare providers can encourage patients to consider meditation as a form of stress relief and health promotion. Because it can be learned relatively quickly and practiced at a person’s own pace, meditation could be integrated into a patient’s routine as a type of complementary therapy to traditional medicine. There are no follow-up treatments or check-ups to ensure that the person is meditating correctly and he or she does not need to find a class or group to join in order to participate. Instead, patients can practice on their own, which requires some amount of self-discipline, but could still be beneficial for many different types of people who suffer from various illnesses or disorders. Meditation, in essence, could be implemented as part of teaching in a number of different medical specialties and can be encouraged during the time surrounding medical procedures or treatments.

Mindfulness meditation, for example, can be encouraged and implemented as part of traditional medical care to support current medical therapies for chronic illness or disease. Two types of mindfulness meditation have been shown to help with chronic stress and with some psychological conditions that respond to cognitive-behavioral therapy: \textit{Mindfulness-Based Stress Reduction} and \textit{Mindfulness-Based Cognitive Therapy}. Both of these methods can be taught in the healthcare environment to educate patients about acceptance of their feelings regarding their medical conditions.\textsuperscript{39} Implementing these types of interventions may help to reduce negative
complications associated with the stress and strong emotions that lead to physical complaints and illness.

**Movement Therapies**

Movement therapies describe those activities that incorporate therapeutic movement to enhance and support physical, emotional, or psychological wellbeing. The process of utilizing this type of therapy involves not only using the body to stretch and support the muscles and tissues, but also using the mind to find peace and calm. Movement therapies are other forms of complementary or alternative medicine that can be used for a number of health conditions and they often provide many of the same benefits as exercise.

**Pilates**

Pilates is a type of movement therapy that is used not only for physical fitness, but also as a complementary health practice that can increase a person’s energy, improve strength, and increase fitness capacity. Pilates consists of a series of exercises that are combined with certain breathing patterns.

The namesake of the method, Joseph Pilates was a physical trainer with experience in martial arts, bodybuilding, wrestling, and boxing that worked with injured soldiers during World War I to help with their treatments and rehabilitation. He and his wife, Clara, both cared for critically ill persons who had been injured and who were often unable to get up out of bed. Pilates provided help by devising equipment with available materials that could be used as part of rehabilitation for those who were immobile. He also developed a series of floor exercises in which individuals could improve their strength during healing. He based many of his principles on his
understanding of yoga, and the study of Zen.\textsuperscript{27} When Joe Pilates taught his exercises, he included the importance of the connection between physical and mental health, understanding that one is not complete without the other.

Many of the original mechanisms Pilates designed during his internment became the precursors of some of the equipment used with the Pilates method today. Because of his work with many patients who were suffering from injuries or illnesses and the contribution his efforts made in their health, he promoted his work to others and later began to teach the methods, in addition to publishing two books about his work.\textsuperscript{28}

Since that time, Pilates remains a form of movement therapy; however, it has not always been as popular as it is today. During the middle of the 20\textsuperscript{th} century, the practice of Pilates exercises continued in some circles but over time, the specific facts regarding how to exactly perform the movements and the integration of health with stimulation of the mind has become muddled through various practitioners.

The original Pilates method has a number of principles that are foundational to its techniques. As it has spread throughout the developed world, more and more people are using Pilates as a method of health promotion, exercise, or healing. Today, over 10 million people regularly practice Pilates throughout the world.\textsuperscript{28} The Pilates method is a form of exercise that considers the balance between the body and the mind. It emphasizes several concepts, including support of such aspects as fluid movements, proper breathing, and development of the body’s core that uphold posture and balance as well as overall body alignment. According to Pilates, the area of the core includes the deep muscles that make up the abdomen and trunk
and is between the areas between the hipbones and the shoulder joints. This area may also be referred to as the center or the ‘powerhouse’ in Pilates centers. The six main principles of Pilates are outlined below.

_Six Main Principles of Pilates_

1. Centering, which refers to strengthening of the core, as described. The core of the body is considered the central location where energy is concentrated and then flows outward to peripheral areas. When a person is able to develop core strength, his or her body becomes more efficient and can move freely. Some people who suffer from chronic back pain have found relief through Pilates because of the work of developing the core.

2. Concentration, which involves using the mind to control every movement of the body. The mind consciously focuses on each movement and controls the entire body through all of the exercises.

3. Control, which is gained through complete concentration while performing the exercises. Pilates’ original work when he was developing the method was what he called “contrology” because it consisted of complete control of the body during the exercises.

4. Breathing, which is very important to gain the full benefits of the exercises. Proper breathing that is controlled will help to rid the body of waste products during exhalation, while bringing in oxygen important to body tissues during the process of inhalation. The person focuses his or her mind on breathing properly during the exercises to take full and deep breaths for these purposes.
5. Precision, which is an attitude of how to perform the work. A person should not necessarily focus on the number of repetitions of each exercise or how long he or she is able to perform Pilates. Instead, the person should focus on performing each exercise exactly as it should be done, with precision to gain the most benefit of the movement.

6. Fluidity, which describes the transitions between movements. During Pilates, the movements are fluid and the person flows easily from one movement to the next, rather than stopping one exercise and then starting the next.

In addition to the main principles of Pilates, the method also includes a number of other concepts, such as proper posture and body alignment, and strengthening of the muscles of the arms and the legs. Posture is considered to affect the entire body. When the core is strong, individuals are able to maintain appropriate posture and carry themselves well with the other parts of the body, such as the arms and legs, remaining in their normal and relaxed positions. The body should also remain in alignment, particularly when exercises are being performed. Alignment is also only appropriately demonstrated when individuals have a strong core. The body should be kept in a neutral position in order to be able to precisely perform the exercises, to protect the back from injury and strain, and to derive the most benefit out of the work.

Pilates further uses equipment to facilitate the exercises. The original Pilates method consists of 12 pieces of equipment and these include large and small items that are used in various methods. As stated, the precursors to many of these apparatuses came from Pilates’ time working with soldiers and developing pieces from available materials at the time. They have obviously...
been modified somewhat to their current forms, but they are meant to provide results similar to their original purposes. Some examples of the types of equipment that may be used as part of the Pilates method include: the magic circle, which is a large ring that is often used for toning the muscles in the arms and shoulders; the reformer, which is a type of mat that has springs that can be used for various exercises and improving range of motion; and, the spine corrector, which has a flat bottom and a rounded top and is set at an angle, designed to stretch and align the back and to strengthen the core.

Pilates has been shown to improve health and to keep people healthy overall when it is practiced on a routine basis. People who regularly practice Pilates demonstrate greater lung capacity, easier breathing, greater flexibility and muscle tone, and improved coordination. People who have sought Pilates for health reasons have found relief of some types of muscle and joint pain and improved bone density.²⁷

Pilates is also useful in controlling and preventing some types of health conditions, particularly those that cause pain. A systematic review by Wells, et al., in the journal PLOS One looked at patients with chronic low back pain who underwent Pilates’ exercises and compared them with those who performed routine rehabilitation care for back pain. The patients who performed Pilates showed significant improvements in pain control and in functional ability for up to 15 weeks when compared to those who had usual care and physical activity.²⁹ Because of the physical movements of Pilates, many of the benefits are also similar to those that a person would derive from focused and regular exercise, which has been confirmed to improve cognitive function in addition to physical fitness and improved metabolism. Weight loss that occurs as a result of Pilates can lead to much better health
and reduced potential for complications associated with obesity. Pilates, similar to exercise, can also help with stress management and can reduce the negative physical and emotional effects of chronically elevated stress levels. Pilates is also an endorphin trigger, which may enhance feelings of wellbeing and could improve some symptoms associated with depression and anxiety.

Pilates classes are located throughout the United States and are typically held in studios, in which students gather for class times to work at the same time. The type of work done during a class varies as to whether the group is doing mat work or if they are using the apparatuses. An instructor, who guides the class through the exercises, leads the class; types of classes also vary in difficulty, with some classes being devoted to beginning learners and others focused on more advanced moves. Some classes start out with very basic moves, and progress is made toward advanced exercises by the end of the class.

Although there are many methods that are similar to Pilates or groups who claim to offer the same benefits with similar exercises, participants who want to perform the Pilates method of exercise should look for trained instructors who offer the actual method. Most instructors must train for years to become qualified to teach Pilates, which helps them to be able to facilitate the work with their clients and to focus on areas that may need more work, such as when someone is recovering from an injury or with another client who wants to strengthen leg muscles. Pilates is also beneficial because unlike some forms of exercise, it is low impact and does not necessarily put strain on the joints. It is much safer to perform the exercises, particularly the floor exercises, because there is little physical contact with others and less risk of injury. It is a body movement that
provides some of the same benefits as exercise while simultaneously contributing to overall healing.

**Rolfing**

Rolfing was developed by Dr. Ida P. Rolf, a former Associate Professor at the Rockefeller Institute for Medical Research in the early 20th century. Although her academic background was in biochemistry, Dr. Rolf went on to study physics, mathematics, and homeopathic medicine during the 1930s. She developed the process of structural integration after implementing various aspects of homeopathy, as well as other disciplines of complementary medicine, such as yoga and chiropractic medicine, into treatments for friends and family who were suffering from various types of medical illnesses.24 Throughout the rest of her life, she taught the principles of structural integration in order for people to learn how to treat others through this healing technique.

Rolfing is a type of movement therapy that focuses on the fascia: the tissue overlying a muscle or organ. Rolfing, also called structural integration, manipulates the fascia to loosen them and reposition the muscles, which can impact a person’s physical abilities. Dr. Rolf developed the technique after recognizing that instead of the body being a collection of different organs and systems, it was interconnected throughout by connective tissues. By manipulating the fascia that covers and connects the various organs, muscles, and bones, the structural integration is said to align all of the tissues, which results in restoration of balance, flexibility, and a greater sense of wellbeing.

The Rolfing practitioner uses manual pressure to manipulate the patient’s tissues. Because the technique is focused on the deeper fascia, Rolfing is
thought to improve body alignment, lengthen the fascia, and ultimately allow the muscles to work efficiently.\(^\text{23}\) Although the appearance of Rolfing may be similar to that of massage, the techniques differ in that massage is focused on manipulation of muscle tissue to support physical movement and control pain, while Rolfing concentrates on the fascia to support overall body alignment.

During a Rolfing session, the practitioner manipulates the fascia during each session to shorten the tissue and draw the body into alignment. The theory associated with structural integration is that when the body is out of alignment, it is not as efficient in function and the person will more likely have difficulties with balance, experience decreased energy and fatigue, and may have more pain or discomfort overall. Alternatively, if the body is in alignment, the person is able to function more efficiently, and the person can breathe easier, and have a greater sense of balance and coordination.

Rolfing may be used with both adults and children. A study in the *Journal of Evidence-Based Complementary and Alternative Medicine* showed that integrating Rolfing into management of gait disturbances among children with cerebral palsy resulted in improved physical ability and better patterns of gait. The children in the study had difficulties with step length, cadence, and velocity while walking but after undergoing three months of therapy using Rolfing, the children showed temporary improvements in all of these areas.\(^\text{22}\)

When the entire body is treated, a person may undergo a series of 10 sessions for treatments, with each session focusing on a different area of the body. Each session is approximately an hour long and they are most effective when completed in a relatively short amount of time, such as once
a week over the course of 2 to 3 months. The 10 sessions are designed as a framework for implementing the technique over time and they are progressive as the practitioner works through the body. For instance, a patient may attend a session of structural integration during the first week and the practitioner would focus on one area of the body; at the next session, the practitioner continues the work started by focusing on the next area of the body. By progressively moving through this sequence over 10 sessions, the body becomes aligned in sequential order, in which the body is evaluated to be fully integrated.

Before starting the sessions of structural integration, the patient would meet with the practitioner to discuss his or her medical history and individual goals for treatment. The treatment usually takes place with the patient lying on a table while the practitioner performs the maneuvers. The practitioner may ask the patient to move in certain ways or to take breaths at specific times during the process in order to better facilitate the movements. The Rolfing technique is typically not painful for the patient, although there may be occasional periods of discomfort. Overall, many patients who undergo Rolfing as a form of therapy say that they feel comfortable and relaxed during the procedure and the area being worked has a warm sensation. The patient should tell the practitioner if the pressure is too intense during the therapy or if pain is experienced. Part of the process of Rolfing includes communication from the patient for feedback about the effects of the procedure.

If the patient has gone through the 10 protocol sessions, a break should be taken from receiving this type of therapy again, at least for a few weeks. The period of time may vary, depending on the patient’s response to the
initial sessions. The patient may have follow-up sessions for continued work on integration at a later time.

Proponents of structural integration through Rolfing say that it can increase a person’s height and help a person to feel taller and lighter. The patient may have greater flexibility, improved self-confidence, and increased energy. These effects are attributed to the importance of body alignment created through the sessions. Other reported positive effects of Rolfing have included improved posture, release of tension, reduced anxiety, better stress management, and relief of chronic pain.

Although Rolfing may be used solely as alternative medicine to maintain stable health and to promote wellbeing, it may also be added as a complementary therapy to other traditional forms of medicine with positive results; particularly, in areas where a patient has a more significant medical diagnosis that he or she is trying to treat. A research article also found in the journal Evidence-Based Complementary and Alternative Medicine looked at research participants who suffered from chronic low back, a leading cause of disability and lost productivity. The study found that when combined with outpatient rehabilitation, structural integration was likely to improve the level of disability related to low back pain and it resulted in increased feelings of patient satisfaction. The many benefits of Rolfing make this type of therapy a valid option for incorporating into complementary therapy. The outcomes of improved posture and more efficient use of the muscles leave the person using this technique more physically comfortable.

**Feldenkrais Method**

Another movement therapy that has been shown to benefit health is the Feldenkrais Method. Moshe Feldenkrais, who was a martial artist and
physicist, first developed it. During the mid-20th century, Feldenkrais developed and promoted a system of movement designed to enhance physical health and improvement. The start of this method was largely based on his experience of being injured in 1929, in which he needed surgical treatment but opted to investigate whether movement therapy could treat his condition instead. Feldenkrais was originally born in Russia and moved to Israel, where he worked to develop his method before bringing it to Europe and the United States in the 1950s.

Feldenkrais developed his method based on body movements that can enhance coordination; the method has been used in a number of settings and for management of various medical conditions, including relief of chronic pain, promoting self-awareness, increasing flexibility and coordination, or improving athletic ability. Feldenkrais himself studied a number of different methods and schools of thought when developing and modifying his method. Over time, he studied the subjects of neurophysiology, motor learning theory, childhood development, psychology, and even robotics to educate himself about how movement can affect health and wellbeing and how best to create his method. He has published a number of books about the importance of body movement and its connection to awareness and expression.

The Feldenkrais Method is designed as a learning process, rather than a complete technique in which participants receive treatment in a set number of sessions. The person learns how to improve his or her ability to move the body, which in turn improves overall wellbeing. The purpose of the Feldenkrais Method is to help the person become self-aware in relation to the surrounding environment and, by becoming aware, be able to better function
in the surrounding environment more efficiently and comfortably, and thereby reaching a person’s fullest potential.\textsuperscript{18}

The Feldenkrais Method contains two main parts: Awareness Through Movement (ATM) and Functional Integration (FI). These two parts are considered parallel forms of the Feldenkrais Method and are performed separately. The basic understanding of the Feldenkrais Method is that if a person is experiencing pain, disability, or some other form of discomfort or illness, it is because of lack of awareness. Therefore, increasing awareness, such as through the Feldenkrais Method, is the key to managing health, overcoming some types of medical conditions, and improving overall comfort.\textsuperscript{19}

Feldenkrais promotes awareness of how a person moves the body, as its theory explains that awareness of body movements can significantly impact health and healing. For example, if a person experiences abdominal pain, he or she may move in a guarded manner to protect the abdomen. The person may walk slightly hunched over or may involuntarily clutch at the abdomen when pain is at its worst. Although the pain is concentrated in the abdomen, the person’s entire body is affected by it; how the person sits or walks, and the posture, facial expression, how the head and neck are held, and where the person’s hands are placed. The person may unconsciously respond in these methods and be completely unaware of how the body is held.

Alternatively, when the pain is treated and is no longer experienced, the person may resume normal walking and posture and revert back to a routine method of carrying him- or herself without an awareness of so doing. The Feldenkrais Method explains that this awareness, or lack of awareness, impacts how a person manages physical discomfort; it also teaches that
awareness of the body’s movements, functions, and interconnections between organ and body systems all support self-image and how individuals think about themselves. A complete self-image would be described as someone who is aware of his or her own body movements and the purposes of body movement, while an incomplete self-image is someone who remains unaware of the many different movements and functions of the parts of the body. Feldenkrais asserts that a person’s self-image involves movement, in that a person can learn to move certain parts of the body in a specific manner and, if done with awareness and conscious purpose, the person will have enhanced self-image.

As individuals move through the movements of the Feldenkrais Method, they learn and sense differences in how their body feels during the movements. While guided through the movements, individuals must discern which movement feels more comfortable and which feels uncomfortable or painful. The process of discernment and then making a decision to perform or continue with a certain movement is a part of the Feldenkrais Method because it fosters greater awareness of the body’s needs and involves a continuous cycle of making a decision and receiving feedback in the brain.

The Feldenkrais Method goes on to teach that subtle movements of the body, repeated over time, can lead to long-term health problems. It is through awareness of the body that a person can prevent some types of illness or injury from developing and can improve other body functions by enhancing physical flexibility and coordination through focused and planned movements. Consider a person who has chronically poor posture; while it may not be apparent when the person is younger, as aging occurs he or she may take on more of a stooped pose and can develop kyphosis. Additionally, the person may also have increasing amounts of back or neck strain, and a
greater risk of pinched nerves or bulging vertebral disks in the spine. The person who develops self-awareness of posture and stance, how the body is held and positioned, can reduce the potential for developing these complications because the person develops recognition of the impact of posture and can detect changes, if they occur, and then modify those changes. The increased awareness allows the person to get rid of habits and abnormal patterns of movement that may be harmful and replace these with healthy alternative movements that enhance individual wellbeing.

The movements of ATM are typically slow and gentle, as are most of the movements through the entire Feldenkrais Method, but the main difference between ATM and FI is that one involves active movement on the part of the participant and the other involves passive movement. The movements are based on developmental patterns that babies and young children go through as they grow, such as reaching, standing, turning, or transitioning from lying down to sitting, and the participant directs his or her attention to body movement and placement in the environment. During an ATM session, the student usually attends a class that is led by a facilitator of the group. The leader demonstrates and leads the group through the various movements throughout the class. Each class typically has a specific focus that directs participants toward certain functions. A normal class length is between 30 and 60 minutes.

The movements in the class may vary, depending on the focus of the class, the particular function that is being taught, and the goal of the class. The participants may perform very basic movements that are comfortable and easy to maneuver, with slow and easy movements. Alternatively, some of the movements may require greater flexibility and are considered much more advanced in their technique. Some classes may start with easy and
gentle movements and then evolve into positions that require greater strength and coordination. The class leader, who instructs the class about the positions as they move through each exchange, directs each movement. During FI, the facilitator works with a single student and moves the student through the motions that are part of the Feldenkrais Method movements. Functional integration technically is designed to achieve the same goals as ATM, but with a hands-on technique. The movements performed during FI are tailored to the participant’s needs and the specific reasons for using the Feldenkrais Method. In essence, the Feldenkrais practitioner develops a lesson for the patient and the method is a teaching session that is tailored to the patient’s specific needs.

Functional integration is taught in a one-to-one method with one teacher working with a single student. It is considered a form of hands-on teaching and communication between the teacher and the student. During FI, the teacher communicates with the student to teach about how to expand self-awareness through movement by gently touching the person and moving him or her through the different positions. The student often lies on a table during the process and the time that it takes to complete the teaching varies between practitioners. Most Feldenkrais practitioners have many hours of training that sometimes takes several years to complete. To become a practitioner of the Feldenkrais Method, the person must be able to communicate effectively, teach, and work closely with others.

Persons who utilize the Feldenkrais Method have stated that after the sessions, they often feel lighter, taller, or more coordinated or graceful. The sessions promote relaxation and are calming for participants. Those who are athletes or who regularly play sports have used the Feldenkrais Method to
enhance their physical agility and to improve their abilities to play. Additionally, artists, musicians, and others involved in the arts have also benefitted from the Feldenkrais Method and stated that it enhanced a greater sense of creativity. Feldenkrais can be used by anyone, whether he or she has an illness, is in pain, or is otherwise healthy. The method has been shown to be beneficial in helping people with chronic pain, particularly pain in the neck and shoulders, as well as joint problems, neuromuscular disorders, and those recovering from some types of traumatic illness, such as a stroke. It is not relegated to those of a certain age or health status; Feldenkrais has been used as part of child development programs, with young- and middle-aged adults, and with seniors.

**Alexander Technique**

The Alexander technique recognizes that individuals develop a set of habits related to how individuals carry themselves, holds their body, and moves. Young children may develop certain body habits and may carry themselves differently than adults; for example, a very young child who is first sitting up may sit up in much more of an erect position when compared to an adult who has been sitting up for many years and who may have developed poor posture or a slouched position. Over time, individuals interact with others around them and often imitate others’ behavior and patterns of carrying themselves, so they may make changes in their posture over time because of not consciously thinking about how he or she stands or positions their body.

The muscles and bones of the body eventually become accustomed to the way a person walks, stands, or carries himself. Without consciously thinking about it, the body adapts into patterns or habits that may be unhealthy and that can affect bone or muscle growth. Another example of this occurs when
a person is injured and it affects how he or she treats the injured area. A person with a leg injury may favor the leg and may walk with a limp for a time until the leg heals. However, if the person unconsciously continues to favor the injured leg, the body eventually adapts to the new patterns of walking, potentially distorting muscle and tissue growth and affecting how the person carries his or her own body.

Unhealthy habits can also cause stress and tension in the body, particularly if unhealthy body movements are putting strain on the joints and muscles. The person may or may not be aware of how body posture and position can increase stress levels but may feel the effects of stress by feeling depressed, tired, or getting sick more often. The Alexander technique seeks to change both the physical and psychological outcomes by promoting mindfulness of body movements. However, it is much more than relaxation therapy or correcting body posture. Those who practice the Alexander technique and have studied it often say that it defies definition and it is difficult to put into words; instead, it must be experienced and transported into the person’s life in order to fully understand it.

The Alexander technique involves both the mind and the body and leads to changes in physical, psychological, and emotional health. It has been defined by Michael Veilleux, a board-certified teacher of the Alexander technique, as “an educational method that teaches how to recognize and then strip away harmful tension habits in movement and posture.” The technique recognizes how negative habits can cause stress, tension, and exhaustion and seeks to relieve chronic stress, relieve pain, and prevent illness.
Frederick Matthias Alexander of Australia developed the Alexander technique during the late 19th century. Alexander had interest in music, theatre, and drama and took several years of training in these areas as a young man. He often gave speeches and performed in dramatic recitations, but he would frequently suffer from a hoarse voice that rendered his speech ineffective. He started watching how he moved and held himself while speaking in a voice used for addressing a crowd and noticed several habits of how he carried his body that seemed to affect his voice. He made changes in how he held his body while speaking and consciously focused on maintaining good habits and, in so doing, was able to improve his speaking voice and limit the times that he suffered from vocal hoarseness.

After Alexander was able to improve the quality of his speaking voice, he determined that the conscious use of the body and the choices that a person makes in how to use his or her body can significantly affect quality of life. Alexander termed this choice of conscious body movement as ‘use’ and this runs contrary to the habits that develop when a person is learning to hold his or her body. Following this discovery, his speaking voice and persona improved so much that he became a well-known speaker of his time and many people came to hear him speak or to seek his advice about how to improve their own performances. He became more famous as an actor but he also then spent much of the rest of his life promoting his discoveries about body use and the techniques of consciously carrying the body to promote wellbeing.54

People seek to practice the Alexander technique to change their way of life, whether they want to be relieved of pain, from uncomfortable symptoms of illness, or to support good health and continuous fitness. The Alexander technique is said to have infinite ability to change a person, because there is
no end to the potential that a person can make for improvement in life. People normally live as a collection of parts that are put together to make a whole. In other words, when a part of the body is broken or dysfunctional, such as with illness or injury, there is focus on that one particular part without often seeing its effect on the whole of the body. Treatment may focus on that one part that is damaged and once treatment is complete and functioning is restored, if possible, the person moves on to focus on differing systems within the body, yet all still within parts.

Even with normal use, a person may use or consider only one portion of the body at a time. For instance, while eating, the person may focus solely on use of the hands and arms to bring food to the mouth, but swallowing and digesting food tends to occur unconsciously. At best, the person may feel the physical satisfaction of a full stomach after eating and notice the effect of intake on the gastrointestinal system. However, there is usually little connection between the various parts of the body involved in the task of eating and even less connection of how eating affects all parts of the body.

The Alexander technique focuses on the body as a whole. When one portion of the body is injured or dysfunctional, it affects the entire body, whether it is obvious or not. It seeks to bring even normal activities of movement into connection with all parts of the body, so that a person does not use only one body system — for example, using only the hands to type — without considering its effect on the rest of the body. Although an activity may be considered purely physical or mental, it is often a mix of both. Consider the example of eating once again. A person may sit down to eat a meal for many reasons; for example, because of hunger, of a situation involving dining with friends, expectation by someone who prepared food to eat, or because the person feels bored. The person uses his or her hands to hold
utensils and to bring food to the mouth; and, uses the tongue and teeth to chew the food and swallow, and then the person’s intestinal tract begins the process of digestion. Eating, therefore, would technically be considered a physical activity. However, most people who eat are also thinking and using the mind at the same time, which may or may not be related to the process of eating.

The person involved in eating a meal may be simultaneously using his or her mind to think about being hungry or how delicious the food tastes, or may be thinking of something entirely unrelated to eating, such as something that happened at work that day or the current temperature of the room. The fact that a person uses his or her mind while performing an activity — and this connection is present with almost any physical activity — means that what is thought of as physical activity is actually more; it is physical and mental because the two are combined and take place at the same time.

Therefore, by considering how the body acts as a whole, a person can use the Alexander technique to relieve tension, reduce stress, improve balance and coordination, and enhance mental functioning. The beginning of its practice involves consciously looking at the movements of the body and considering how or why they are performed, and what end goal is in mind. By considering how and why each activity is performed, the person begins to develop an initial awareness of how the body moves, rather than unconsciously moving or “going through the motions.” For example, a person sitting in a chair may get up, walk across the room, and step into the kitchen for a glass of water. The person may do this without thinking much at all about anything, except for what is going on in front of them. The person may be distracted at the moment or may consider how thirsty they may be. Before rising from the chair, if the person considered how the body moves...
is used to rise, walk, pour water, and drink, there would be consideration of how and why those actions are performed with the end goal being to get a glass of water. That is the beginning of awareness of the use of the body.

Other practices involve awareness of how one holds the head, the alignment of the head and neck, and the length of the spine. This near-constant awareness of the head, neck, and back while performing other activities is central to the technique and supports other activities that are added. This often involves undoing the habits that may be completely ingrained in a person’s posture and how the head and neck are held; it may go against years of poor posture, slouching, or general inattention to how the body is held. Initially, this act of controlling the head and neck can help greatly with some physical complaints, such as neck or back pain.

Some of those who have started using the Alexander technique to relieve neck or back pain have often found relief in a relatively short amount of time by keeping an erect posture and maintaining the head and neck in alignment with the spine. In addition to pain relief, people who have practiced this beginning technique of head and neck alignment have typically found that, while it initially was difficult to maintain and required almost constant thought to remember the proper posture, eventually it became much easier to maintain. Furthermore, proponents have expressed that they feel light, can move easily, have relief of muscle tension in the back, and that they have increased flexibility after practicing this technique.56

Other parts of the technique usually take place during a class with a qualified teacher of the Alexander technique. Some other parts of the technique may involve sitting in a relaxed but aligned posture that provides a balanced state for the body, and learning how to rise from a sitting
position while keeping the body in proper control; and, part of instruction may involve learning how to stand upright in a balanced, straight, and poised manner. Another part of the method is to take time each day to lie down in the proper position. In this way, the person lies on the back on a firm surface with the legs bent and the knees pointed toward the ceiling. The person may need a support under the neck during this time. While in this pose, the person rests and feels relief of movement and holding of the body, and allows the force of gravity to pull the body down toward the floor. The person may then move the leg or the arm by first consciously thinking about it and then focusing on the muscle groups and parts of the body involved in doing that one task.

Basically, when implementing the Alexander technique, the person is focusing on body mechanisms for nearly every activity, including sitting, standing, lying down, walking, turning the head, and any other activities the person would engage in, such as brushing the teeth, eating, or working on a computer. By implementing the proper basics of the technique into every movement and scenario, the person is said to achieve muscular release and relaxation, as well as the other benefits that have been shown as described.

The Alexander technique has been included in various instruction methods, such as through private therapy, but also into other settings as well, including physical or occupational therapy. Practitioners who work with patients to support their physical functioning and rehabilitation are finding positive effects of implementing the Alexander technique into working with patients. Some research studies have been demonstrating that this technique does help, not only with posture, muscle tone, and mental health, however, research demonstrating that the Alexander technique specifically treats certain medical problems, such as asthma or diabetes, is still lacking.
The technique can help with some of the negative effects of chronic diseases and can help some patients who struggle with pain or immobility due to these conditions. Research by Deborah Bayardino George of Portland State University demonstrated that the Alexander technique is particularly effective in the aging population in that older adults who implemented the method developed improved movement, decreased disability, better functional reach, improvements in some effects of Parkinson’s disease, and control of chronic pain.57

It is important to remember that the Alexander technique is not so much considered a type of therapy, although it can and does help people with physical or mental health complaints, illnesses, and pain relief. Instead, it is considered a lesson or a teaching situation in which the practitioner teaches the student the proper methods of holding his or her body and using the technique appropriately. Although a person can incorporate the techniques of the Alexander technique into daily life on his or her own with some practice and self-study, proponents of the technique recommend working with a qualified practitioner who can correctly teach the method, foster self-awareness, and provide motivation. Through the help of a trained teacher a person would be able to achieve the methods of the Alexander technique much more effectively and practice them appropriately. The use of a teacher may also help the patient using the method to learn more than would have occurred on his or her own.

During a session, the teacher will not only instruct the student about the day-to-day practices of incorporating the technique, but will also manually manipulate the body into the appropriate postures and alignment that the student should be keeping. By allowing the teacher to move the parts of the body into the correct position, the student can better maintain appropriate
alignment independently during everyday practice. Eventually, if the student is able to incorporate the techniques into daily life and is consciously aware of how the body is used, the techniques can continue to be used independently without end and the need of a teacher. The student may eventually reach the point that the techniques are second nature and he or she no longer needs to expend energy and concentration on them because the method has become a way of life.

Relaxation Techniques

Relaxation techniques are used to treat the effects of stress on the body. Chronic stress and muscle tension can lead to psychological and physical illness over time. Elevated stress levels contribute to health problems and can affect the immune system, potentially putting a person at greater risk of developing illness. The body responds to stress by engaging the fight-or-flight mechanism, in which the heart rate increases, blood pressure jumps up, and the respiratory rate quickens. There is an increase in the total amount of blood reaching the muscles in preparation for quick response to danger in the environment. These are short term and rapid effects to fear or the thought of harm, but not intended to be continued over a long period of time.

Chronic stress eventually causes damage because the body remains in a type of hyper-alert state. The affected person may eventually develop complications of inflammatory reactions within the body, causing damage to the blood vessels and leading to circulatory problems, heart disease, and high blood cholesterol. There are other negative effects of chronic stress as well, and some have complained of such issues as muscle or joint pain, gastrointestinal issues, increased susceptibility to illness, and feelings of depression, lethargy, and exhaustion when stress levels are not managed.
Relaxation techniques can combat some of the negative effects of stress by working to calm the autonomic nervous system that runs in high gear when stress levels are elevated. Relaxation techniques are designed to treat the body’s response to stress through the work of the nervous system, causing the heart rate and respiratory rate to slow down and leading to a decrease in blood pressure. Stimulating the relaxation response through relaxation techniques causes the person to slow down, relax, and feel a greater sense of peace and control. With continued and regular use, relaxation techniques can combat some of the negative effects of long-term stress and may prevent stress levels from becoming elevated in the first place. All people need some amount of stress in their lives, but chronic stress is what can be damaging; relaxation techniques can help the person to manage the harmful effects of chronic stress and to feel more in control.

Relaxation techniques are designed to help the body to cope with stress and to thereby reduce the negative consequences associated with elevated stress levels. There are a number of relaxation techniques that can be employed by someone who is seeking stress management and to improve health and functioning. These techniques can be taught by a competent trainer or professional who can teach students to master the techniques for stress management; they may be incorporated into other complementary or alternative therapies, such as with massage or chiropractic, or they can be learned and implemented by the patient and used at any time.

**Progressive Muscle Relaxation**

Progressive muscle relaxation is a type of stress management technique that involves focusing on the different groups of muscles. This system recognizes that when a person feels stress, he or she may be more likely to tense the muscles, which can lead to pain, stiffness, anxiety, and fatigue. Chronic
muscle tension from unrelieved stress is exhausting because the body is using so much energy to keep the muscles in a tensed state, as if they were prepared for quick movement or activity. The state of having tensed muscles is inappropriate in daily life when performing routine activities of daily living, however, a person who lives with this type of muscle tension may feel the strain and stress all the time.

Progressive muscle relaxation seeks to relieve some of the muscle tension that develops with stress and anxiety. The process involves voluntarily focusing on certain muscle groups and tensing the muscles within those groups and then focusing on relaxing them. As the person moves through the exercises of progressive muscle relaxation, he or she alternately tenses and then relaxes each set of muscles, starting with one area of the body and progressing throughout all areas one by one. The process is most beneficial when practiced on a regular basis, such as by taking time for a session every day.

Progressive muscle relaxation is best performed in a quiet environment that does not have any distractions. The person may choose a darkened room or calm environment and get into a comfortable position. Starting at the feet, the person may tighten the muscles of the toes and feet, hold the contraction, and then slowly release the muscle tension. The person would then move to the muscles of the lower legs, followed by the knees, the thighs, and so on. The process does not require work with a professional and can be done independently. However, for some people with significant stress or health issues or those who have physical injuries, it may be helpful to be guided through the process of progressive muscle relaxation. For instance, progressive muscle relaxation can be incorporated into other forms of therapy; a person who is recovering from an injury and who undergoes
physical therapy may include progressive muscle relaxation as part of recovery when aided by a physical therapist.

**Breathing Exercises**

Breath focus through breathing exercises is another form of relaxation technique. Breath focus describes the process of concentrating on the mechanisms of breathing and the process of moving air in and out of the body. It may be called by different names, including diaphragmatic breathing or paced respiration, but the results are often the same. By focusing on breathing, a person can essentially stop the focus on other thoughts or distractions, some of which can be very stressful. Practicing breathing exercises helps the patient to find a relaxed and calm state because he or she has stopped other activities and is engaging only in breathing techniques. The person’s focus moves away from any outward events, nagging thoughts in the mind, or from other stimuli in the environment that are distracting.

To perform breathing exercises, the patient may first start in a comfortable position of sitting or lying down; however, these exercises could be performed at almost any time when the individual needs to stop and regain focus. The person takes a slow, deep breath and places one hand on the abdomen, just below the xiphoid process, and the other hand on the chest. While taking a breath, the person slowly tries to pull in as much air as can be done to fill the lungs, but not so much as to gasp, overexpand the chest, or suck in air too quickly. It is a slow, deep drawing in of breath. During this time, the focus is solely on the air coming into the body and the pressure of the air against the hands placed on the chest and abdomen. The person then holds the breath for a few seconds and waits, and finally releases the air slowly and begins again.
Breath focus and deep breathing is beneficial because it requires the person to expand the lungs and take in as much air as possible, utilizing all of the lung tissue for oxygen and gas exchange, including the bases of the lungs. The process of deep breathing also sends a message of calm to the brain, which in turn is sent to the body to foster relaxation and calm. This calming feeling then can slow the heart rate and can reduce feelings of panic or hyperarousal, as well as decrease blood pressure, hyperventilation, and anxiety. Breathing exercises can be incorporated into other relaxation techniques or with other methods of complementary or alternative therapy, such as with massage, acupuncture, qi gong, or meditation.

**Autogenic Training**

Autogenic training is a form of relaxation technique that is used to control stress levels. The purpose of this type of technique is to help control anxiety and high stress levels by relaxing muscle groups in the body and clearing the mind. During this technique, the patient lies down comfortably in a quiet and calm place without any distractions; the body is in a position that is loose with relaxed muscles and support for the head and neck. The patient first focuses on breathing and the movements of air in and out of the body. The eyes may be closed to do this.

Starting at the legs and feet, the patient thinks about whether tension is felt in this part of the body, visualizing whether tension is there and discerning if there is any particular felt stress in that area. If the person does feel stress, he or she then visualizes being free of the tension in that particular area by letting it go. The muscles in these areas would then become more relaxed and comfortable. After letting go of tension in the feet and lower legs, the person focuses their mind further up the body, focusing on one muscle area at a time, discerning whether there is tension in that area, and then letting
the tension go. The person moves their focus up to the knees, then the thighs, hips, back, chest, and so on. As the person moves the focus through each body area, he or she becomes more relaxed and comfortable overall and feels the stress and tension drain away.

Autogenic training involves a script that can be read by another person as the patient moves through the process of relaxing the different muscle groups. The script reads as instructions for the patient to visualize the muscle group and then visualize letting it go. It can be calming for the patient to lie on his or her back with eyes closed while listening to someone read the script, and instructing on what to do to relax the muscles.

After the patient has moved through all of the major muscle areas, the entire body should feel relaxed, comfortable, and calm. The training is recommended on a daily basis and takes approximately 10 to 20 minutes per session. A person can learn to perform the exercises without any advanced training and can complete them on his or her own time without requiring help from a trained practitioner. Although it is most commonly used to manage stress levels or to treat symptoms of anxiety or anger, autogenic training has also been successful in managing other conditions, including asthma, gastrointestinal complaints such as diarrhea or constipation, tachycardia and some dysrhythmias, headaches, hyperthyroidism, hypertension, and stomach ulcers. It is thought to be successful because of the process of visualization and using the mind to think about the effects on the muscle groups. The process is similar to that of biofeedback, which is also useful in controlling some physical or emotional conditions by using the mind.
Relaxation techniques have been shown to help a number of medical and psychological conditions. They are implicated in correction and management of various conditions, including sleep disturbances, chronic pain, hypertension, elevated cholesterol levels, tension headaches, fibromyalgia, and infertility. They have also been beneficial for some people struggling with mental illness, including depression, anxiety, panic disorders, and post-traumatic stress disorder.60

One study in the *Journal of Clinical Sleep Medicine* looked at the use of relaxation techniques in complementary and alternative medicine to manage insomnia among adult patients who suffered from the sleep disorder.63 Insomnia is classified as the inability to fall asleep at a reasonable time when trying to sleep or the inability to stay asleep after falling asleep. People who suffer from insomnia may experience fatigue, exhaustion, depression, and chronic pain as a result of their inability to fall asleep or to achieve normal amounts of sleep. Relaxation techniques, including breathing exercises and progressive muscle relaxation, have been shown to improve sleep of those suffering from insomnia.

When a person utilizes relaxation techniques prior to going to sleep, the techniques counteract some of the pathophysiological mechanisms that make sleep difficult to come by, such as hyperarousal of the central and autonomic nervous systems. The American Academy of Sleep Medicine recommends relaxation techniques as a form of treatment or management of insomnia.62 Still, the study in the *Journal of Clinical Sleep Medicine* demonstrated that although relaxation techniques have been shown to be helpful, the participants with insomnia either did not recognize the benefit of relaxation techniques or did not utilize the techniques on a regular basis to combat their insomnia. This indicates a greater need for education and
teaching to instruct patients who suffer from sleep disorders and sleep deprivation about the benefits of using relaxation techniques before trying to sleep.

**Spinal Manipulation**

Spinal manipulation is a process that involves a combination of chiropractic medicine, osteopathic medicine, and physical therapy. It is also referred to as osteopathic manipulative treatment. Spinal manipulation is known as a manual therapy, in that it provides hands-on techniques used by a trained practitioner. It uses force applied to various points on the spine through a thrusting technique on the joint that moves it beyond its normal range of motion. Spinal manipulation is said to work to improve pain, particularly back and neck pain, as well as improve flexibility, function, and movement of the affected patient on whom it is performed.

For most people in the United States, spinal manipulation is provided by a chiropractor, although many physical therapists, rehabilitation nurses, osteopathic practitioners, and exercise physiologists have been trained in its methods. It may be used to help a practitioner to diagnose a patient’s condition when there is presentation of symptoms or it could be implemented as part of treatment for symptoms or a previously diagnosed condition. Spinal manipulation has also been used successfully as a complementary or adjunctive therapy to surgical treatment or medication for certain diseases, however, some people have benefitted from only using spinal manipulation in lieu of mainstream medicine.

Spinal manipulation is most beneficial in treating conditions associated with the musculoskeletal system, including such conditions as chronic or acute pain, arthritis, sciatica, muscle weakness, and soft tissue injury. It can also
be used to manage symptoms associated with some forms of chronic illness, such as substance use disorders, asthma, diabetes, and premenstrual syndrome.\textsuperscript{58} It is, however, most commonly used for treatment of neck and back pain.

Back pain is a common complaint and is actually one of the most often cited reasons for seeking care from a health practitioner. Back pain, whether due to injury or illness and whether considered acute or chronic, can impact function of most other systems in the body. The pain felt in the back can alter almost everything an affected person does, including walking, performing activities of daily living, or even sleeping or resting. Back pain accounts for many hours of lost work and over 100 billion dollars per year in lost productivity.\textsuperscript{59} While some people who suffer from back pain may be able to account for a certain injury or period when it all started, others have no idea why they suffer from back pain. Regardless of the cause, many forms of back pain can be treated through spinal manipulation if it is performed correctly, and it has been shown to be as successful in treating back and neck pain as much as medication or applying heat to the affected area.

A study in the \textit{Annals of Internal Medicine} demonstrated that spinal manipulation therapy was more effective in managing acute and subacute neck pain when compared to only using medication. Participants complained of neck pain for differing periods lasting between 2 and 12 weeks’ duration; they underwent various measures to manage the pain, including taking pain medication, increasing amounts of exercise with advice from a healthcare provider, and spinal manipulation therapy. The spinal manipulation had a positive effect on the patients and reduced their overall pain levels. Furthermore, the spinal manipulation therapy had other positive effects;
patients also reported greater overall function and decreased disability with movement.\textsuperscript{53}

During a session of spinal manipulation, the patient will meet with the practitioner first to talk about the patient’s history and goals for treatment with spinal manipulation. This often includes a discussion about any medical conditions and any symptoms the patient is currently experiencing. The practitioner may also examine the patient first before starting the therapy to determine if there are areas of weakness or structural differences in the bones or joints that would be affected by spinal manipulation. During this exam, the patient may also point out areas of pain or tenderness, if present.

Spinal manipulation involves a number of techniques in which the practitioner moves the patient’s body and makes adjustments in different areas using manual pressure. The practitioner may use his or her hands directly on the patient’s joints, or may use a device to press in certain areas and to apply the pressure. Spinal manipulation has few side effects. Most people who use it say that it causes temporary discomfort and some lasting soreness after the session. There are also some rare potential complications of causing damage to the vertebrae or causing worsening of nerve pain in the back after a session. However, a patient who uses a licensed practitioner, such as a chiropractor or osteopathic physician, specifically trained in spinal manipulation will be less likely to have any complications.

**Chinese Practices**

A healing system that started in China over 2,000 years ago, Traditional Chinese Medicine (TCM) considers the effects of qi (“chee”), or energy that supports a person’s physical and psychological functioning. According to theory of TCM, qi is a source that can heal physical illness and can support
an individual’s wellbeing and overall state of health. When a person has a balance of qi, he or she is said to have good health and a strong body system with rejuvenated organs and cells.

Chinese medicine may incorporate such practices as body movements, including tai chi or qi gong, as well as other therapies, including acupuncture. The focus of TCM is to strengthen the body by improving its ability to heal as well as maintain good health. Although many people may not agree with or believe in all of the philosophies associated with TCM, they may still practice many of the techniques and learn more about TCM to derive great benefits.

Tai Chi

Tai chi originated as a type of martial art. It consists of movements that are slow and focused, in which the person performing it simultaneously practices a form of meditation. Many people practice tai chi as a form of exercise and to improve their health. Although it was originally developed as a type of self-defense in China, the purpose of tai chi evolved and it became known for its health benefits.

Tai chi chuan, typically shortened by name and called tai chi, uses the concepts of yin and yang in Chinese philosophy. The yin and the yang are two opposing forces in the body that also complement each other. The yin represents coldness, slow movement, or being passive, while the yang represents activity, warmth, and excitement. Many Eastern philosophers who consider the concept of yin and yang believe that the two forces must remain in balance in order for a person to have good health. As with Traditional Chinese Medicine, tai chi considers the flow of qi through the body and its practices are designed to improve and not block the flow of
this energy. Performing a series of slow, relaxed, and flowing movements accomplish improved energy flow. Tai chi follows certain forms, which stimulate energy and the direction of its flow. Its movements are said to be healing and healthy because they promote circulation, good posture, controlled breathing, and muscle exertion.

When performing tai chi, a person learns the movements and forms. The person assumes body positions in one of the forms and then transitions directly to the next form with a slow and smooth movement. Each form follows the next without stopping, so that it appears that the person is slowly and consistently moving in a fluid manner. This continuous movement from one form to the next forms a path for the qi to flow. The forms can be basic or advanced, but learning them and perfecting the smooth transition and correctness of form takes time and study. The classic forms of tai chi come from a document known as the *Tai Chi Classics*, which is an old document found in China that outlines 13 different forms that are the basis of tai chi. Five of the forms are related to the martial art of tai chi, while eight of the forms are principles of energy manifestation in the body.\textsuperscript{94}

At a higher level, tai chi is said to be similar to that of qi gong, in which the individual moves beyond the physical exercise and flow of energy and incorporates internal discipline. The movements of tai chi are more than just flowing forms, however, and its practice requires what are known as internal principles that follow Taoist philosophy. The internal principles focus on the spirit, the mind, and the heart, and involve awareness of the body in relation to these elements. Performing the movements, meditating and concentrating on the inner self while doing the movements, and maintaining controlled and deep breathing foster awareness of the body in relation to the elements.
Tai chi has been shown to be beneficial for health; its effects can be similar to performing low-impact exercise. However, it should not be thought of only as exercise because it has some different elements. For instance, while exercising, a person may tense the muscles and may stretch some parts of the body beyond normal capability in order to increase flexibility. With tai chi, the muscles are relaxed, the movements are slow, and the body is not stretched beyond its capabilities. This may be why many people are able to perform tai chi, because it is gentle on the body while providing many health benefits. Some of the health benefits of tai chi that have been demonstrated through research studies include improved muscle strength, flexibility, and improved balance, as well as reduced pain associated with arthritis, improved quality of life for those suffering from cancer or heart failure, decreased risk of heart disease and management of hypertension, improved symptoms of Parkinson’s disease, and enhanced sleep patterns.\textsuperscript{95}

One study in \textit{The New England Journal of Medicine} showed that tai chi improved functional capacity and balance among patients with Parkinson’s disease. The study tailored a tai chi program for Parkinson’s patients to assess its effects on their postural stability. The participants practiced eight different movements that involved shifting of balance, stretching, and resistance training and found that patients improved in functional ability, thereby reducing their risk of falls and injuries associated with the effects of Parkinson’s disease.\textsuperscript{96} The benefits of this gentle yet powerful compilation of movements seems to be ongoing, with research still being conducted about the health benefits of other conditions with tai chi as specific treatment.

Tai chi can be practiced by anyone and in China it is performed by young people and by older adults equally. It does not necessarily need to be performed as part of a class or group; a person could practice the principles
of tai chi independently. However, it is beneficial to study with someone who is trained in the art of tai chi to best learn the forms and for practice. Once having gone through the forms and training with an expert in tai chi, a person could continue to practice without the aid of an instructor.

There are many classes available in which people gather to perform tai chi. These are typically led by an instructor. Anyone who wants to get involved with tai chi could observe a class and try to learn some of the lingo associated with the practice. Instructors do not require specific certification, but many who facilitate classes are trained to the point that they are able to teach others.

**Qi Gong**

While it may seem similar to tai chi in practice, qi gong is actually an older form of meditative movement that first developed in China about 7,000 years ago. It is comparable to tai chi in that it incorporates slow and meditative movements of the body in a flowing and graceful manner. Qi gong also involves combining concentration on breathing with body movements and thoughts to meditate and to focus. The combination of the three functions of breathing, thinking, and body movement are designed to enhance the state of qi.

The words that make up qi gong each have different meanings. As described, qi means energy and describes the life force found within a person. Gong (“gung”) describes a type of skill that a person can accomplish through repeated practice. Together, qi gong then means the practice of nurturing a person’s energy or life force to promote wellness and optimal health.²
This incorporation of body and mind, with the final outcome being the nurturing of qi, is to enhance wellness and potential recovery from illness. It is thought that these practices promote self-regulation of the body’s abilities to heal itself by stimulating certain hormones and mechanisms of self-recovery and healing. Practice of the postures, breathing exercises, and thought control are said to bring qi into balance by cultivating forces from within when the person reaches a very relaxed state.

Early forms of qi gong are considered to be basic facets of Traditional Chinese Medicine. Qi gong has long been focused on health and wellness, with incorporation of its movements and principles into the treatment and management of certain illnesses or disease states throughout history. It was originally developed as a type of health care system in ancient China. For example, many years ago, a person may have suffered from symptoms of an unknown illness and would not necessarily be diagnosed or receive treatment through medicine or herbal remedies of the time. Instead, the person may have sought to balance a state of qi by practicing qi gong, as this method has always been focused on health and healing. The person, in essence, used the methods of qi gong to focus energy on personal wellness and overcoming symptoms, rather than utilizing other forms of medication or supplements. Qi gong may be considered as a first-line course of disease management among many cultures today.

Qi gong seeks to foster higher levels of qi so that the person may obtain a greater force of energy to support physical and psychological health. It is practiced as one of three different forms: medical, martial, or spiritual. There are over 2,000 different exercises that may be practiced as part of the three forms; they may include various postures that involve sitting, standing, lying down, or otherwise moving in some sort. Because there are
so many different movements associated with qi gong, it may take some
time to learn how to perform them correctly. However, a person need not
perform every exercise perfectly to be able to derive the health benefits of qi
gong.

Medical qi gong is practiced through slow and methodical movements that
are connected to the person’s breathing. It may be considered a very gentle
form of exercise that is designed to stimulate qi to support healing.
Meditation qi gong supports a person’s psychological or emotional wellbeing;
it is more often performed while the person is sitting, standing, or lying
down. Meditation qi gong focuses on breathing and focusing the mind and
the thoughts. It may include visualization or focusing on specific thoughts or
ideas. Through meditation qi gong, the individual can relax both the body
and the mind. It is done to cultivate qi for support of the emotions, for
spiritual connection, or to heal psychological disturbances.

Martial qi gong may be performed as part of martial arts. It focuses the mind
and the character of breathing while the person performs body movements
of the martial arts. It may be performed by a person through flexing and
releasing various muscles, or standing in various postures while
simultaneously focusing on breathing. Martial qi gong has been shown to
increase muscle strength and improve flexibility in those who regularly
practice it. A person who is learning and developing in the martial arts may
practice martial qi gong to supplement strength and to gather even more
power and energy by appropriately channeling qi with this type of work.

Qi gong may be practiced internally or externally; both of which can still
support and nurture the balance of qi. Internal qi gong is practiced by the
individual by using the described postures, breathing techniques, and body
movements to find balance. The person performs each exercise and then repeats it several times. The number of times each movement or exercise is repeated may vary. A practitioner who is trained to diagnose another person with a condition that could be managed with qi gong is performing *external* qi gong. It may be used during parts of medical qi gong as a healer transmits qi through the palms by placing them on various parts of the body of another person, as is sometimes practiced with medical qi gong.

Another type of external qi gong involves projecting qi from the palms of the hands and directing it toward another person when the healer stands close to the other individual or places the hands very close to an affected part of the individual’s body.³ Regardless of the type of qi gong, students of this method typically learn the techniques to produce calm and peace in their lives and often state they feel a renewed source of energy that comes from utilizing this method.

**Yoga**

Yoga is a form of mind-body therapy that combines physical postures, meditation, and breathing exercises. Originating in India, “yoga” means “unite” or “integrate” and refers to the connection between the mind, the body, and the universe.¹¹ Early writings that describe yoga talk about its ability to help the practicing person to achieve wisdom by turning inward and focusing on the nature of the self. By releasing external sources of happiness and turning inward, yoga is said to bring meaning, knowledge, and true happiness.

Traditionally, yoga is described as consisting of eight different segments, similar to a tree with eight limbs. The sections include:
1. **Asana**: The postures included as part of yoga and that support flexibility and physical strength
2. **Pranayama**: Regulation of breathing that seeks to expand the prana, which is the life energy
3. **Yama**: The practice of restraint and ethical behavior
4. **Pratyahara**: Shutting off the senses of the surrounding environment and focusing inward to the self
5. **Niyama**: Purity of mind and behavior; this includes observing pure thought, commitment, being responsible, remaining truthful, and following through with responsibilities
6. **Dharana**: Concentration, or focusing on a specific thought, object, idea, or action
7. **Dhyana**: Meditation and a focused state of awareness and peace
8. **Samadhi**: A higher form of consciousness in which the person transcends to a state of greater wisdom and understanding

In addition to these eight sections, there are different types of yoga that each has a certain focus.

- **Hatha yoga** is the most popular type of yoga practiced in the United States. This practices uses some of the postures and breathing techniques that many people associate with yoga. Meditation is also typically involved in some respect. Hatha yoga often focuses on opposites and finding balance in one’s life. There are also subclassifications within this form of yoga, including Himalayan, Tibetan, Viniyoga, and Kundalini.

- **Bhakti yoga** involves love and devotion to a higher being or the universe. Bhakti yoga is designed to take the love within a person and direct it toward the divine. The person practicing this type of yoga may
focus solely on a divine being and look for its presence in the surrounding environment.

- Karma yoga considers the past actions and behaviors of the person and relates them to present circumstances. This type of yoga focuses on positive behaviors and interactions so that good deeds today will make a difference in the outcomes of tomorrow.

- Tantra yoga focuses on finding balance in one’s life and breaking free of negative attributes in life, such as vanity, anger, greed, or fear. The process uses relatively strict discipline and follows various rituals to achieve this higher state.

There are a multitude of other forms of yoga that may be done through various practice centers and to achieve different types of outcomes. Examples include Raja yoga, which focuses control on the mind and upholding the eight segments; Jnana yoga, which involves deep contemplation and meditation; Bikram yoga, which is also referred to as hot yoga and seeks purification of the body through sweating by performing yoga in a room that has an elevated temperature; and, Ashtanga yoga, which is a type of Hatha yoga that involves a great number of postures and is more associated with exercise.11,12

One of the benefits of yoga is that some or most of the postures and practices can be performed by virtually anyone. With careful instruction and demonstration, a person with almost any type of health background can perform some elements of yoga. There are also many people who have been seen performing extreme postures of yoga, but this is not necessary to achieve most of the health benefits of this practice. It is typically considered
to be a safe and effective form of exercise that, when used as a complementary therapy, can treat some symptoms of disease and prevent recurrence or exacerbation of symptoms of chronic or acute illness.

Yoga has similar benefits to that of exercise, and for many people, it is a regular form of exercise to maintain health and wellness, and to avoid gaining weight or developing conditions associated with weight gain and obesity. People perform yoga for other reasons, beyond the benefits that are similar to exercise. Yoga has proven health benefits for some people, and it may be incorporated as a form of complementary or integrative care of a person’s health. According to the National Center for Complementary and Integrative Health, 58 percent of people who perform yoga do so to maintain good health and as a form of exercise; 16 percent of people perform yoga to manage a specific type of medical condition, and 10.5 percent of people who perform yoga do so to manage some type of musculoskeletal condition. Some people start utilizing yoga because they have heard of its positive benefits from others who have seen health results, while others may start because it was recommended by peers or a healthcare provider.

Yoga has been shown to improve pain in people who are suffering. Most often, it has been demonstrated to improve chronic pain, such as that with chronic low back pain. A person who performs the positions of yoga carefully can improve strength and overall body function to offset some of the pain. Back pain is the most common reason why people use complementary health practices, including yoga, although the meditation and postures associated with yoga can help a number of other medical conditions as well. Other studies have shown yoga to be beneficial in the management of symptoms associated with cancer, arthritis, heart disease, irritable bowel syndrome, migraine headaches, and the discomforts of pregnancy.
Part of the reason for success of yoga is that its regular practice promotes good posture and body alignment, regular breathing, and routine use and flexibility of the muscles. Yoga practice promotes flexibility, strength, and balance, and it reduces fatigue and promotes an overall healthy outlook and lifestyle. When a person suffers from an illness or chronic disease, he or she may feel not only the physical symptoms associated with the condition, but may also suffer from depression or anxiety due to effects of the illness. For example, chronic pain has been associated with an increase in feelings of depression; the person affected with chronic pain may be more likely to feel depressed as a result of trying manage pain unsuccessfully or may feel anxious and worried that pain will never go away.

Practicing yoga can help to diminish some of the feelings of depression and anxiety associated with disease and thereby potentially reduce the negative effects of psychological illness on the course of disease. Yoga is also appropriate for stress control and can not only reduce feelings of stress but can prevent excess stress from developing, in addition to the many physical complications associated with chronic stress.\textsuperscript{12}

Further research on the benefits of yoga has shown that it can stabilize the autonomic nervous system and affect hormone secretion in the body. Yoga is not only considered as a complementary therapy, but some individuals have successfully used yoga as an alternative form of treatment instead of mainstream medicine for conditions such as depression, anxiety, schizophrenia, hypertension, elevated cholesterol levels, and weight loss.\textsuperscript{12} Despite its use as an alternative or complementary form of health management, yoga does not specifically cure any diseases.
The exact nature of why yoga is so successful in supporting health and managing disease is still being researched. Many of the benefits of yoga are similar to those of regular exercise, which also promotes health and wellness through improving strength and flexibility, the release of endorphins, and increased oxygen consumption through rapid and regular breathing. Additionally, yoga can provide a form of stress relief so that the affected person may not suffer quite so intensely from negative health symptoms if stress levels are controlled.

The regular practice of yoga has also been demonstrated to improve sleep function and reduce periods of insomnia. An inability to achieve adequate sleep because of a sleep disorder such as insomnia can significantly reduce a person’s quality of life and can lead to other health problems, such as depression or anxiety. Many people treat chronic sleep disturbances with conventional medicine, which often includes medication that helps to induce sleep or modifies sleep patterns so that a person is able to stay asleep. Studies suggest, however, that sleep disturbances such as insomnia can be improved with the addition of complementary medicine, including the practice of yoga. A clinical review in the journal *Sleep Medicine Reviews* found that analysis of research studies confirmed that the frequent practice of yoga has been shown to improve sleep habits among people suffering from insomnia, particularly among older adults.10

Yoga can be done individually or as a part of a group. Most people learn yoga by attending classes that are offered by trained instructors who help to facilitate appropriate movements and who guide the class in breathing techniques. Yoga classes are typically offered as part of exercise programs, gym or health club memberships, health spas, and individual centers that operate solely to provide classes. Attendees are encouraged to learn the
appropriate poses and then perform some of the postures at home in between classes. For those who want to learn yoga on their own, there are a number of publications, videos, and websites dedicated to teaching pertinent information about yoga and how to correctly perform it.

The exact postures and exercises vary between yoga types and the focus of the class, but an example of a type of exercise might be to sit with the legs crossed and the arms at the sides, with erect posture and the body in good alignment. While assuming this pose, the person may then regulate breathing according to a pattern directed by the yoga teaching, such as breathing in through the nose and out through the mouth or by taking short, quick breaths. The various postures, breathing techniques, and meditation exercises are different for the numerous types of yoga practiced and will be different between sites.

**Hypnotherapy**

Early reports state that a man named Franz Mesmer of Germany during the late 18th century developed initial episodes of hypnosis. The work of Mesmer became known as *mesmerism*, portions of which were later used during some types of medical practices. Mesmerism was initially described as a type of hypnosis that was induced through animal magnetism, an invisible force that is emanated from the body that supposedly has healing properties. Mesmer was never able to scientifically prove his theories about mesmerism or animal magnetism, however, the practice of hypnosis was later validated through its use, such as during surgical procedures when there was little to give a patient for anesthesia.

Although hypnosis was used successfully for many people during the early 19th century, it took a long time to gain acceptance as a valid practice.
People were suspicious of its purpose and often worried that the person performing the hypnosis could somehow manipulate the patient into vulnerable circumstances. Later proponents of hypnosis dropped the idea of animal magnetism as being necessary to the process and focused more on placing subjects into a trance state by focusing on an object for a certain period of time. Dr. James Braid of Scotland started teaching people more about hypnosis, not only the placement of a person into a trance state guided by a practitioner, but also self-hypnosis, in which a person could learn to hypnotize him- or herself. In fact, Braid was the person who actually named this process hypnosis, which comes from hypnos in Greek, meaning ‘sleep’.  

Over time, hypnosis continued to be used by some practitioners, but its status never gained very wide acceptance. In fact, the usefulness of hypnosis often garnered more critics than support, but it remained in use in some circles, such as for treatment of some soldiers who were suffering psychological distress after fighting in World War I. During the 20th century, Dr. Milton Erickson brought hypnotherapy into a better-known position by teaching that there are a number of ways to reach a trance state of hypnosis beyond eye focus and that all people are capable of being hypnotized if the facilitator is able to recognize the best method of inducing hypnosis. Dr. Erickson is considered a pioneer of hypnotherapy and often used the process to treat some of his own pain that he experienced after suffering from polio.  

Today, hypnotherapy is considered to be a form of hypnosis that is used for medical intervention and to treat health conditions. Hypnotherapy is still not necessarily accepted as a legitimate medical intervention, and its use remains somewhat controversial, but it has been shown to help some people
with their health conditions. It has been recognized by the National Institutes of Health as a valid form of therapy for treatment of chronic pain since 1995.

Hypnotherapy utilizes the process of hypnosis, which is an alternate state of consciousness in which a person becomes hyper-alert to surrounding circumstances and is open to the power of suggestion.\(^\text{14}\) During hypnosis, a person may be led into a state in which they focus their attention on a specific item or thought; this process is typically facilitated by one trained in using hypnosis. Because the person is open to suggestion, it is thought that the person’s state of consciousness utilizes this type of unconscious processing, in which he or she is more receptive and will accept certain suggestions when made during hypnosis. There are many myths surrounding hypnosis, such that it is only done as a form of entertainment and to get a person to participate in silly or humiliating activities; and, that the hypnotized person cannot fully return to a former state, or that hypnosis puts a person to sleep. These and many other ideas about hypnosis have probably contributed to its controversial nature as a valid form of therapy and treatment for some medical conditions.

Hypnotherapy is performed by putting a person into a hypnotized state of altered consciousness in which the person is open to suggestion. The hypnotherapist does not have control over the person and cannot force an action against the person’s own will; this is one myth that has perpetuated the lack of acceptance of hypnosis as a valid form of therapy. Some people fear hypnosis because they do not feel in control and they fear that the hypnotherapist can somehow force them to perform acts or otherwise take advantage of them while they are in a hypnotic trance, but this is not part of the process of hypnotherapy. A person in a trance state of hypnosis can
accept what the hypnotherapist suggests, but can also reject it. This is an important part of hypnotherapy, though, as the person who is seeking treatment should be willing to accept the suggestions of the therapist to make health changes if the person is indeed willing to undergo the process for management of an illness or a certain health condition. If the patient is unwilling to follow and accept the suggestions of the hypnotherapist, he or she may reject it and subsequently not receive the benefits of change. The patient is still in control, even while in the trance state.

Hypnosis uses triggers of memories about items or events and helps the person to focus on those memories. For example, a woman may seek hypnotherapy for help with managing back pain that she has been having during pregnancy. The hypnotherapist may talk about certain memories that the patient has filed away in her mind about pregnancy, discomfort, or expectations for pain control. When something happens that causes a memory, whether it is good or bad, the mind attaches certain emotions to it. The person connects a certain type of behavior to the memory and the emotion as well. Hypnosis determines what memories are causing certain behaviors and emotions and helps the person to separate them.

In the example of the pregnant patient who seeks relief from back pain, the therapist may discover that the patient has a history of severe back pain after being in a car crash three years ago. Furthermore, it may be learned that she has always remembered the crash in a very negative way because of subsequent financial difficulties during a time of limited financial resources. There may also be existing worries in the patient’s mind about the financial effects of having a baby upon her life, even though she may be excited about her pregnancy. The patient may be unconsciously acting in a manner that is connected to her memories about the car crash. The
hypnotherapist can help the patient to focus on those memories but also separate the memory from the behavior or the reaction associated with it. Hypnotherapy then further helps the patient to replace negative behaviors with healthy ones. So, in this case, the therapist could suggest that the patient imagine a sweet, happy baby every time she finds herself thinking about financial worries, thereby replacing some of the negative associations.

The process of hypnosis involves understanding the reason for why the person is seeking care. The person is then hypnotized and placed into a relaxed state while focusing on a specific item or thought. A hypnotherapist usually guides this process. During the session, the therapist guides the person to consider the negative thoughts and behaviors and to learn how to replace them with positive ones. The person then reaches a state of comfortable relaxation but is still able to attain mental focus to participate in the process.

Some critics of hypnosis say that it produces effects because of other factors associated with the state in which the patient is placed during the process, and not the hypnosis itself. For example, a person may seek hypnotherapy as a form of treatment for chronic back pain and during the process of hypnosis, also utilizes other forms of complementary therapies, such as relaxation and stress management techniques. The affected person may eventually suffer relief from chronic pain that was exacerbated by elevated stress levels, but it can be difficult to determine if the pain relief occurred as a result of the hypnosis itself or the other techniques that were implemented as part of the process.

Hypnotherapy has been used in a number of ways to treat certain medical conditions; it may be advertised or promoted as being helpful for specific
situations, such as for help with smoking cessation. It can also be implemented in other situations, including for weight loss, insomnia, chronic pain, phobias, eating disorders, certain types of addictions, and irritable bowel syndrome. It has also been shown to successfully help some patients manage anxiety, such as before undergoing a procedure; and, it can also decrease stress and improve immune function.\textsuperscript{15}

Specific types of hypnotherapy may be beneficial in treating certain types of illness. Gut-directed hypnotherapy is one form of therapy that has been successfully used to manage symptoms of functional abdominal pain and irritable bowel syndrome. Gut-directed hypnotherapy is designed specifically for the management of digestive disorders. It involves a combination of hypnosis and suggestions directed specifically at the intestinal disorder or the symptoms experienced. A systematic review found in the \textit{Archives of Disease in Childhood} showed that gut-directed hypnotherapy is not only effective in the management of irritable bowel syndrome and functional abdominal pain among adults, but it can effectively be implemented for use among children as well. Pediatric patients who underwent hypnotherapy reported decreased abdominal pain and significant improvement in quality of life when compared to those who did not receive hypnotherapy.\textsuperscript{16} This type of hypnotherapy has been shown to be successful when delivered by a trained therapist or when performed as self-hypnosis through the use of electronic media.

Most people who perform hypnotherapy are licensed professionals that have specific training in the procedure. They may be of professional disciplines with different backgrounds, such as nursing or physical therapy, but also have certification to perform hypnotherapy. There are also many individual practitioners in private practice that perform hypnotherapy. A patient who
undergoes hypnotherapy may visit a practitioner in a set location, typically an office setting for the therapy session, and discuss their history and reasons for seeking care. The hypnotherapist will then teach the patient about the methods of relaxation used for the therapy and will start with discussions of memories or specific situations that seem to be affecting the patient’s current state of health.

The patient usually undergoes more than one session, and most adults see changes in their health status after at least four sessions.\textsuperscript{15} The number of sessions and the time commitment for hypnotherapy varies between patients because of their medical backgrounds and their responses to the therapy. During the hypnosis, the person may close the eyes, which appears to be a state of sleep, but is actually more related to focusing. However, the patient does not necessarily need to close the eyes to experience hypnosis and may be induced to a trance state without closing them.

Following the hypnotic intervention, the individual typically remembers what occurred during the hypnotic state. Contrary to popular belief, hypnosis does not cause a person to tell secrets or bring up subconscious matter that would otherwise be hidden from others. The person also does not ‘awaken’ from hypnosis without remembering what happened during the session, although there may be some points of spontaneous amnesia, in which there is some memory loss of the event, although it should be noted that this is rare.\textsuperscript{13} Most people complete the session with full memory of what occurred and are able to recall what was discussed and can start to implement changes that will result in better health.
Stress Management

It is well known that the effects of stress on the body can be damaging to the immune system and can lead to mental and physical health concerns. Stress is defined as “the experience of a perceived threat, real or imagined, to one’s mental, spiritual, or physical well-being, resulting from a series of psychological responses and adaptations.” Stress is associated with any number of medical or psychological conditions and plays a role in development of such conditions as heart disease, cancer, liver disease, depression, suicide, accidents, and gastrointestinal illnesses.

It is thought that up to 80 percent of visits to primary care providers are related to illness or injury as a result of significant stress. Globally, stress levels are at an all-time high, with most people aware of the lack of boundaries available in daily living, the rise of the internet and access to personal information, financial crises, and violence and terrorism being just some of the issues facing people today. Elevated stress levels seem to be everywhere, contributing to a decline in health and wellbeing, despite the high standards of living enjoyed by many people in the United States.

Many people today suffer from increased amounts of stress because of the alterations in lifestyles that have evolved over the past several decades. Technology is faster than ever, which could technically give people more leisure time instead of forcing them to engage in labor for hours out of every day. However, this increase in technology has led to lapses in activity, increased sedentary lifestyles, and increased numbers of people with obesity and poor health habits. Many chronic diseases of today are preventable but have developed because of the evolution of lifestyle habits that contribute to chronic disease.
As noted, stress induces the fight-or-flight response, a term first coined by Harvard physiologist Walter Cannon in 1914. When the body senses danger, it either decides to stay and fight or to flee and run from the conflict. The fight response charge up the body and prepares it for battle. The body physiologically prepares itself by tensing the muscles and increasing the heart rate. Alternatively, the flight response is associated with fear and the body responds by preparing itself for a fast getaway, such as by increasing blood flow to support the muscles. The two responses have actually evolved into one in which the body prepares itself to do both at the same time.

When a stress response occurs, the brain senses a stressful event or stimulus in the environment that is threatening in some way. The brain then activates the nervous system in preparation for defense against the threat. The body changes physically and becomes aroused, as demonstrated by tachycardia, flushing, sweating, increased blood flow, and increased respiratory rate. After the threat has disappeared, the body then returns to a state of homeostasis and the symptoms that developed in response to the threat have resolved.

Most people are not faced with life-threatening events on a daily basis; and, society has evolved to the point that instead of developing a stress response to a threat to life, the body reacts in the same way to non-life-threatening but stressful events, such as interpersonal conflict at work, time spent waiting for service when out in public, or as a reaction to noise in a restaurant or cafeteria. The stress response has become so natural and part of everyday life that most people who experience stress live in a perpetual state of high-alert, in which their bodies are almost always aroused to the possibility of threat and they are working overtime to keep up.
Some amount of stress is normal and necessary for optimal functioning of certain organ systems, including the cardiovascular and musculoskeletal systems. Eustress describes the “good stress” that occurs when the body responds to a positive event, such as the excitement over getting a new job. The negative stress that most people think of is known as distress, which can cause harmful effects on the body and can be considered acute or chronic. It is chronic stress that is most likely to cause disease because the body stays in the chronic state of arousal, as described.

Because chronic stress can affect the physical, emotional, psychological, and spiritual domains of a person, it should also be managed and handled in a situation that addresses each of these affected areas. Brian Seaward, author of the book Managing Stress describes a holistic approach to stress management as being:

- able to identify how the body responds to stress.
- the knowledge of mental, physical, emotional, and spiritual factors related to stress.
- the use of coping mechanisms to resolve the causes of stress.
- the practice of relaxation techniques to maintain homeostasis in the body.
- evaluation of the effectiveness of coping mechanisms of stress levels.

There are many forms of complementary and alternative approaches to stress management. Some of these have been described in this course, while others may be devoted specifically to stress reduction. When utilizing techniques of mind-body therapy, Traditional Chinese Medicine, or energy therapy to manage health or illness, an individual could also be simultaneously addressing the amount of life stress experienced and working at stress management.
Energy therapy describes techniques that stimulate or control the flow of energy through the body, which may be used as part of stress management. Energy management techniques may include such applications as tai chi, qi gong, or acupuncture, as well as Emotional Freedom Technique (EFT) and therapeutic touch. The theory behind EFT is that negative thoughts and feelings block the flow of energy through the body; this energy flow can be restored when parts of the body that contain meridians are stimulated while the person simultaneously focuses on the current problem. The stimulation is performed using tapping or acupressure on meridian points, often on the face or upper body.

Therapeutic touch teaches that each person is surrounded by a universal energy that is connected with the person’s own life energy within. The therapeutic touch is made with the person’s energy field when the practitioner moves their hands several inches above the patient’s body. Therapeutic touch has been shown to reduce stress and anxiety in some people who use it and it is considered safe as a form of complementary therapy used for stress management.

Manipulative therapies such as massage are also important components of stress relief. Massage utilizes the power of touch to reduce muscle tension and to provide pain relief. Because chronic stress can cause muscle tension, inflammation, pain, or mental health problems, massage is a form of stress management. Massage loosens tight muscles that may have developed because of stress. It improves blood flow to all parts of the body, increasing oxygenation to the distal tissues. Massage also brings a person into a relaxed state of mental alertness, it provides emotional support through touch that conveys a sense of caring, and it stimulates release of endorphins, all of which can reduce the effects of stress.
Mind-body interventions have been shown to control stress levels and to support health and wellbeing when applied toward an individual suffering the effects of chronic stress. Biofeedback is one type of mind-body intervention that helps a person to sense and control some of physiologic responses to stress by using electronic devices. Through biofeedback, a person may be able to sense a change in heart rate, breathing rate, body temperature, and blood pressure and then regulate them by consciously using the mind. The electronic stimulation of the process provides the feedback needed for the individual to determine if his or her conscious application is changing physiological responses. Biofeedback can be used successfully to manage stress, as responses such as an increased heart rate or blood pressure are associated with increased stress. Biofeedback has been shown to alleviate migraine headaches, manage high blood pressure, control asthma attacks, and reduce pain among those who have used it.

Ayurvedic medicine applies stress management techniques through use of yoga and meditation. Because these practices spend time with focus on the mind and its connection to the body, eliciting calming responses could reduce a person’s level of stress. For instance, within yoga, an individual may spend time concentrating on breathing, focusing the mind, and maintaining a pose. All of these actions encourage the person to focus on something other than a stressful event or situation, and by focusing the mind, the person may think about a calm or peaceful situation, which is the opposite of stress.

Anyone who recognizes the need for stress management can incorporate a number of techniques into his or her life to improve negative symptoms and to promote quality of life. Stress management techniques do not require extensive training or study, nor do they need to be done with the services of
a certified professional, although patients will often derive more benefits when working with a trained practitioner in some areas of stress reduction, such as with Traditional Chinese Medicine. However, many elements of stress reduction, from meditation to relaxation techniques, can be implemented at home without any special aids. The outcome of using stress reduction techniques depends on the time the person has to devote to improving health in this manner. In other words, a person experiencing significant stress needs to take some time, only if it is a little, to relax and implement these techniques in order to best manage his or her health and overall stress levels.

**Nutritional Therapy**

Nutrients are the chemical substances found in foods that are necessary to life. Nutrients can be broadly divided into macronutrients, which consist of carbohydrates, fats, and proteins, and micronutrients, which include vitamins and minerals. Most people get at least some of their nutrients from foods, with essential nutrients being those that can only be taken in through food and that are not made by any part of the body. Nutrients are essential for providing energy, building and repairing body tissues, and regulating body processes, so it is important to recognize the value of nutrients when considering the effects of health and disease on the body.

Some people suffer from poor health because of certain conditions that are directly affected by nutrition, while others may have health conditions that could still be impacted by good nutrition choices. Nutritional deficiencies, such as malabsorption syndromes, alcoholism, eating disorders, or iron deficiency anemia are all examples of conditions that occur as a direct result of poor nutrition. The signs and symptoms of many of these conditions could
be managed with proper nutrition and intake of appropriate nutrients for healing.

Alternatively, some conditions are not directly caused by poor nutrition, but could still benefit from the addition of certain vitamins and nutrients to improve symptoms and quality of life. Nutritional counseling, when provided by a trained practitioner who is familiar with the effects of nutrition on the body, can guide the patient toward making healthy food choices that could restore health and potentially minimize some effects of illness or poor health, whether caused directly by nutrition deficiencies or by other types of disease.

**Nutritional Counseling**

Nutritional counseling involves applying what is known about the nutrients found in food toward management of certain health conditions. It typically means that a patient will meet with a nutrition therapist, such as a dietitian or nutritionist for counseling about diet and its effects on health. The therapist can then make recommendations about what foods to include and what to avoid based on the patient’s health. Each session is individual and unique to the client’s needs.

It should be noted that most situations that involve nutrition counseling are done in the context of complementary therapy and are included as part of treatment or management along with other measures. While some people have adopted whole foods approaches or have had specific success with eliminating or including certain items from the diet to treat specific conditions, the majority of nutrition therapists consider nutritional counseling as a form of integrative, rather than alternative medicine.99
The beginning session with a nutrition practitioner will often focus on the patient’s medical history, and, current illness, if any, as well as ideas or goals of treatment through nutrition therapy. This portion of the assessment may include a review of body systems, a physical exam, anthropometric measurements, such as height, weight, and waist circumference, a check of vital signs, a dietary history, and possible laboratory tests to check for nutrient deficiencies.

The nutritional counselor may then talk with the patient about the effects of certain nutrients on the patient’s body or current condition. The types of foods to include and those to avoid will depend on the patient’s condition and the goals for treatment. Some foods are nearly universal as being included as part of a healthy diet, and include items such as leafy green vegetables, which contain many nutrients and few calories. Their inclusion is often recommended for health problems and situations that range from a desire for weight loss to management of high blood pressure. Other specific nutrients should be included for certain conditions as well. For example, a woman who has suffered several fractures due to osteoporosis may be counseled to increase her intake of calcium-rich foods and of foods containing vitamin D.

**Holistic Nutrition**

The concept of holistic nutrition as part of integrative medicine focuses on the whole person, though, rather than simply adding foods that will affect a specific condition. The idea behind nutritional counseling is that patients are entirely affected by their food and nutrition, rather than simply being seen as having a disease that affects one part of the body. Nutritional counseling therefore works with the patient as a whole person and uses food in conjunction with other forms of therapy or treatment to support healing.
Melinda Lund in Today’s Dietitian states that there are additional components to nutritional counseling as a form of integrative medicine. This includes the food-mood connection, which considers how food intake affects moods and mental health conditions, such as depression and emotional eating. Analysis of food addictions considers a patient’s cravings for certain foods, whether healthy or unhealthy, and why he or she continues to follow certain eating patterns that can be harmful to health. Nutritional counseling also considers the effects of other dietary components on physical health, including phytonutrients and antioxidants.¹⁰⁰

Nutritional counseling has been shown to be beneficial in multiple situations, whether it is by supporting good health and promoting weight loss, or by managing specific situations, such as with treating pain or improving muscle function. Applying the principles of nutritional counseling has been beneficial in treating such conditions as migraine headaches, gastrointestinal illnesses, atherosclerosis, rheumatoid arthritis, depression, fibromyalgia, and eczema.

Research is ongoing about the effects of nutrition and food intake on health. More information about connection between food and nutrition with physical and emotional health continues to evolve and to be discovered. Anyone who has interest in learning more about controlling health and disease can take time to learn more about nutrition and the effects of certain nutrients in the body or meet with a nutritional therapist to discover how they can benefit from sound nutritional practices.

Safety Considerations In Complementary And Integrative Therapy

A discussion of the various types of complementary and integrative therapies to use as treatment for various health conditions would be incomplete if it did not discuss safety considerations, including some potentially negative
considerations. The consumer of complementary medicine must take into account certain factors that can affect how a treatment or therapy is delivered, the training and knowledge of the practitioner involved, and the potential results that could happen. Each person who desires to pursue complementary and integrative medicine should consider additional factors related to the practice, including its safety, the cost of the therapy, and its effectiveness.

**Safety Considerations**

As with any type of treatment or therapy, safety should be considered in alternative or complementary therapy. Some therapies may not be beneficial, while others can be downright dangerous, particularly when a patient chooses to use only one type of therapy as an alternative to any mainstream medicine for a significant health problem.

Depending on the type of therapy involved, whether or not it is deemed safe depends on how it is being used and who is involved in the therapy. Some practices that a person could perform independently, such as meditation or relaxation techniques, can be quite safe and have almost no contraindications. Because they can be performed individually when a person has time or sees fit to use them, and when used in conjunction with other types of therapeutic interventions, these types of therapies are generally considered to be safe.

Some therapeutic interventions should require consult with a trained practitioner or medical professional before starting. There are certain therapeutic practices that should not be performed within specific populations of people because they are not considered to be safe. For example, a person who recently had surgery or who is suffering from a
systemic infection would most likely not be healthy enough to undergo deep tissue massage and the process could actually cause more harm than good. When considering certain types of treatments or therapies, a patient should consult with a trained practitioner who can recognize what instances are contraindications and counsel the patient about avoiding these practices to best uphold their safety.

There are also some complementary therapies in which safety is questioned because they are not well regulated. Although this does not mean that they are ineffective or completely dangerous, it does mean that consumers should be very cautious when implementing them for health conditions. An example is the use of botanicals or herbal preparations, which are not regulated by the FDA. A manufacturer of a botanical product could claim that the product contains a certain amount of an herb that is useful for some health conditions, but there is not always a way to know the exact amount of the herb that is present. The amount may vary between containers or even between doses within a container and the consumer has little to no control. This means that a person who takes an herbal supplement for treatment of a medical condition could be taking tablets that contain almost nothing and that are simply excreted out of the body, or could be taking supplements that could lead to toxicity and that could be dangerous to one’s health. Furthermore, some supplements may negatively interact with other supplements or medications to cause harmful effects. When products and therapies are not well regulated, there is a greater risk of harm to the consumer.

Because of safety reasons, it is important for any patient who wants to utilize complementary or alternative therapies to consult with a healthcare provider. At one time, complementary medicine was enough of a foreign
concept that most mainstream physicians had little to no knowledge on the subject and could not help patients even when they wanted to use other therapies. Today, more physicians, nurses, and other healthcare providers are becoming knowledgeable about complementary therapies so that they can counsel their patients and sometimes even sometimes provide these services.

Unfortunately, there is a widespread belief that because a therapy or treatment is not part of mainstream medicine, it is deemed to be more dangerous. Actually, the reverse is true in this case. Complementary therapies have fewer adverse effects when compared to mainstream medicine.\textsuperscript{101} Nonetheless, it is important for any patient who considers complementary medicine to work with a knowledgeable practitioner who can identify those safety risks that may be harmful to the patient’s health. Consumers of complementary therapies should also take the time to learn as much as they can about what practices they want to incorporate and what they hope the outcomes will be, so that by remaining informed, they can stay safe.

**Cost of Treatment**

Complementary and alternative therapies and treatments have grown in popularity in recent decades, and many people have come to recognize their value and benefits. Unfortunately, many practitioners have also come to see the benefits of promoting their therapy or treatment as a way of making money. When a particular therapy is popular, people are more likely to spend money and pay to participate, even if the cost is high. According to the National Center for Complementary and Integrative Health, the costs of complementary medicine add up to over 11 percent of total out-of-pocket expenditures on healthcare.\textsuperscript{102}
The market for complementary and alternative therapies is very big, with many options for treatments available. A 2007 study by the U.S. Department of Health and Human Services showed that Americans paid an average of approximately $120 per person for each visit to a complementary or alternative provider; the services that cost the most were naturopathic physician treatments while the lowest-cost services were for spinal manipulation and chiropractic care.103

Self-care therapies are also very expensive, with botanicals, vitamin and mineral supplements, and herbal remedies available at almost every drugstore, grocery, and health market. Americans spend approximately $30 billion on health supplements every year, even though these products may or may not cure, manage, or prevent their health conditions.

Some products or treatments are treated under insurance programs and so consumers may pay less out of pocket when seeking these types of treatments. Therapeutic interventions such as chiropractic care or acupuncture are often covered by insurance but because policies vary, patients must discern what is considered a covered practice and what they are willing to pay for themselves. Because many people end up paying some or all of their costs of complementary medicine out of pocket, it is a good idea to research what costs will be incurred before starting any type of treatment. A consumer can look up information about cost or when seeking services of a trained practitioner, call the therapist and ask some questions about cost, what services are covered, and the inclusion of extra fees. After researching costs of complementary therapies, the consumer will have to decide if the price of what is expected is worth receiving the potential benefits of the service or item.
When someone wants to seek complementary or integrative services he or she is often willing to pay for those services. This is in part because people who seek complementary medicine are looking for something beyond conventional medicine to manage their health or to treat specific symptoms. They may even be desperate for help and turn to unconventional therapies as another alternative to mainstream medicine. When this happens, they may end up paying more for services if they believe they do not have other alternatives.

Further, some products or therapies are touted as being so beneficial that they are almost too good to be true. This unfortunately puts false hope in the hearts of some people who are looking for help and who think they have found an answer when other treatments have failed. While complementary or integrative treatments may actually work for them, they may also end up paying more because they believe they have found the answer to their problem and it is worth almost any price.

**Effectiveness of Treatment**

Although there are many options for complementary and integrative treatments, the efficacy of individual treatments can vary between practitioners, types of treatments, and the conditions they are designed to manage. Often, the question of whether or not something actually works is difficult to answer.

The Program on Integrative Medicine at the University of North Carolina at Chapel Hill defines the effectiveness of care as a positive outcome that occurs as a result of treatment and includes the treatment’s efficacy, the approach and response of the patient, and the setting in which the treatment is delivered.¹⁰⁴ When a new drug, treatment, or procedure is
developed within conventional medicine, it often undergoes tests of its effectiveness and it may receive approval from governing agencies, such as the U.S. FDA. Within complementary and integrative medicine, though, the standards are not always as high. Truthfully, there are some practices that are upheld to high standards of demonstrating effectiveness within the complementary medicine realm. However, there are also many others that remain unregulated or that claim to be quite effective but because there are no tests of effectiveness administered in these cases, they may or may not work well.

When a conventional treatment or medication undergoes tests and is deemed to be effective, it is because of the testing required and it is typically then recommended for certain populations. For example, when testing a new medication in the treatment of chronic obstructive pulmonary disease, if research has shown it to be effective and the drug is approved by the FDA, then it is often recommended for a certain population, in this case, for people who are suffering from chronic obstructive pulmonary disease. This is not the same with many complementary therapies, and treatments may be recommended based on anecdotal evidence or for individual purposes, rather than for groups of people with similar symptoms.

Additionally, many conventional medicines and treatments have the capability of being measured for their effectiveness, but there are many forms of complementary therapy that do not. While researchers may use some types of complementary therapies to assess whether their use produces a desired result within a certain population, there are also other times when there is little to no basis for measuring effectiveness. Again, reports may be anecdotal in nature and based on the success that others have had in the past with the therapy, but that may not be applicable to
everyone. When considering these factors, it is easy to see why complementary medicine methods may appear to be ineffective for some groups or that they cannot be adequately measured for their effectiveness. But this explanation comes from comparing effectiveness rates of complementary medicine with conventional medicine, when the two systems are actually not the same. Instead of comparing the ability to measure efficacy of complementary medicine with conventional treatments, it must be considered on its own.

The process of measuring whether complementary and integrative medicine treatment is effective should instead be based on whether it is effective for the consumer using it, according to the type of method it is, such as a mind-body technique or an energy-based therapy. For instance, what one person derives from a session of acupuncture may differ when compared to another person, even if both attend the session with the same expectations. Second, the effectiveness of a complementary approach can be measured based on the success of the interaction between the practitioner and the client. Does the client seek a certain type of treatment and leave the session feeling relaxed and calm or does he walk away from a meeting feeling misunderstood and judged by the practitioner? If the experience was positive, then the effectiveness of the therapy could be considered positive, even if the client did not derive any obvious physical effects from the session.

In essence, the effectiveness of a nonconventional treatment or therapy depends on what the consumer wants to get out of it. While there are some methods that are completely ineffective under any circumstances, there are many more that are very effective, but this effectiveness is not necessarily measured by comparing testing and treatment outcomes to conventional
medicine. When it comes to complementary therapy, the consumer is often the one to make the decision as to whether a particular treatment or therapy has been effective.

**Summary**

Increasingly, consumers have access to information, products, and therapies that can greatly benefit their health. When considering complementary and integrative medicine therapies, patients should thoroughly research their options. Although there may be questions about effectiveness, safety, or cost of many of these activities, studies have shown that there are also many health benefits that can make use of these therapies worthwhile.

Many options for complementary and integrative treatments exist today with ever increasing choices for consumers and health professionals involved in prevention and treatment of a disease-state. Nursing professionals have options to integrate into everyday practice as well, which has been covered in this course. Nurses are encouraged to check with their professional bodies and licensing jurisdictions for specific guidelines related to complementary and integrative practices in their area of care. The topic of nursing guidelines related to the integration of a holistic approach to patient care is worthy of further research and study.

Please take time to help NurseCe4Less.com course planners evaluate the nursing knowledge needs met by completing the self-assessment of Knowledge Questions after reading the article, and providing feedback in the online course evaluation.

Completing the study questions is optional and is NOT a course requirement.
1. Complementary or alternative medicine is sometimes referred to as an unconventional form of medicine because:
   a. it separates the body and the mind into two separate entities so that body or mind may be treated separately.
   b. it was developed in the eastern part of the world.
   c. its benefits cannot be scientifically proven.
   d. its practitioners are trained for specific purposes, with specialties ranging from psychiatry to orthopedics to neurology.

2. The concept of complementary medicine refers to a technique, therapy, or treatment that is:
   a. effective for treating various types of symptoms and conditions when mainstream medicine fails.
   b. covered by insurance just like mainstream medicine.
   c. used as an alternative to mainstream medicine.
   d. used in conjunction with mainstream medicine.

3. An approach that seeks to combine mainstream medicine with an understanding of how health and wellness affect a person’s physical, psychological, emotional, and spiritual well-being is known as:
   a. conventional medicine
   b. integrated medicine
   c. complementary medicine
   d. alternative medicine
4. **Probiotics refers to:**
   a. the addition of beneficial bacteria to the intestinal tract.
   b. the use of dietary elements that, when ingested, can stimulate the growth of beneficial bacteria in the intestinal tract.
   c. vitamin and mineral supplements.
   d. a regimen whereby a person gets his or her recommended, daily vitamins and minerals.

5. **TRUE or FALSE: Vitamins that may protect body cells against damage are known as antioxidants.**
   a. True
   b. False

6. **Phytomedicine is a term that refers to:**
   a. a supplement that is available without a prescription.
   b. botanical medicines.
   c. any mainstream or conventional prescription.
   d. supplements that are effective but the exact element of their composition that makes them effective has still not been isolated.

7. **The FDA has issued warnings about interactions of ___________ with medications; for instance, it should not be taken with other antidepressants.**
   a. gingko biloba
   b. probiotics
   c. St. John’s wort
   d. milk thistle
8. **Tai chi is a movement therapy that:**
   a. originated as a type of martial art.
   b. consists of movements that are slow and focused.
   c. is a form of meditation.
   d. All of the above.

9. **TRUE or FALSE: A person with almost any type of health background can perform some elements of yoga so long as he or she has received careful instruction and demonstration.**
   a. True
   b. False

10. The ___________________ recognizes that each person has developed a set of habits related to how he carries himself, holds his body, and moves.
    a. Emotional Freedom Technique
    b. Alexander technique
    c. Feldenkrais method
    d. Rolf movement therapy

11. Approximately ________ percent of American adults use some form of complementary medicine as part of treatment or prevention of disease.
    a. 12
    b. 20
    c. *30
    d. 45
12. True or False. Integrated medicine seeks to combine the high quality, well-researched practices associated with conventional or mainstream medicine with an understanding of the concepts of health and wellness.
   a. *True
   b. False

13. Medical acupuncture is a combination of
   a. French energy acupuncture and Chinese medicine.
   b. Chinese acupuncture and Western medicine.
   c.*French energy acupuncture and Western medicine.
   d. Acupressure and Western medicine.

14. Aromatherapy is said to support healing because of the connection between olfactory nerve stimulation and the
   a. central nervous system.
   b. *limbic system of the brain.
   c. hypothalamus.
   d. patient’s environment.

15. Echinacea is another botanical that is used
   a. in the management of sexual dysfunction.
   b. for upper respiratory infections.
   c. for the common cold or influenza.
   d. *Both b and c above.
16. Transcendental Meditation began in Africa and was brought to the United States during the 1980s.
   a. True
   b. *False

17. Mindfulness meditation shown to help with chronic stress and some psychological conditions are:
   a. Mindfulness-Based Stress Reduction.
   b. Mindfulness-Based Cognitive Therapy.
   c. Eye Movement Desensitization and Reprocessing.
   d. *Both a and b above.

18. During a Rolfing session, the practitioner
   a. guides deep breathing
   b. *manipulates the fascia
   c. leads meditation and chanting
   d. None of the above.

19. Sandalwood is an oil with a rich, woodsy smell that has been used for
   a. *the treatment of skin conditions.
   b. respiratory inflammation.
   c. herpes infection.
   d. headaches.

20. Qi gong focuses on health and wellness
   a. *through movements and principles used to treat disease states.
   b. that was originally developed in ancient India.
   c. through Tibetan meditation techniques.
   d. that is only practiced by Buddhist priests.
21. Chamomile is known for its action to treat  
   a. *anxiety.  
   b. migraine headache.  
   c. insomnia.  
   d. respiratory infection.

22. The Pilates method is a form of exercise that  
   a. considers the balance between the body and the mind.  
   b. emphasizes fluid movements, proper breathing, and development of the body’s core.  
   c. uphold posture and balance as well as overall body alignment.  
   d. *All of the above.

23. Pilates focuses on the core of the body, which includes  
   a. *the abdomen.  
   b. the mind.  
   c. energy point or chakra in Indian religions.  
   d. both a and c above.

24. Holistic nutrition focuses on  
   a. simply adding foods that will affect a specific condition.  
   b. *the patient as a whole person.  
   c. only how food and not other forms of therapy that supports healing.  
   d. the digestive system.

25. True or False. The most common form of massage performed is Swedish massage.  
   a. *True  
   b. False
26. **Spinal manipulation works to improve**
   a. *pain and flexibility.*
   b. genetic malformations of the spine.
   c. quality of sleep.
   d. Both b and c above.

27. **Emotional Freedom Technique (EFT) focuses on**
   a. negative thoughts and feelings that block the flow of energy in the body.
   b. restoring the energy flow through meridians.
   c. acupressure on meridian points, often on the face or upper body.
   d. *All of the above.

28. **Kava kava is said to**
   a. improve mood and enhance relaxation.
   b. helps alleviate insomnia or anxiety.
   c. cause liver damage in certain groups.
   d. *All of the above.

29. **Potassium is a mineral and electrolyte in the body that**
   a. *supports cell growth and function.*
   b. regulates kidney function.
   c. at high levels can cause a drop in blood pressure.
   d. Both b and c above.

30. **The following vitamin can be toxic in doses higher than the recommended daily allowance.**
   a. *Vitamin A*
   b. Vitamin D
   c. Vitamin B
   d. Vitamin E
31. True or False. Cupping is an ancient Chinese practice to treat boils and infections to draw out impurities from under the skin by inserting needles into the affected area.
   a. True
   b. *False

32. Biofeedback can be used to manage stress and alleviate symptoms of conditions such as
   a. migraine headaches
   b. high blood pressure
   c. asthma
   d. *All of the above.

33. Ayurvedic medicine applies stress management techniques through
   a. acupuncture.
   b. *yoga/meditation.
   c. heat.
   d. Both a and c above.

34. Autogenic training is
   a. *a form of relaxation
   b. a form of muscle strengthening exercise
   c. spiritual meditation
   d. None of the above.
35. **Tantra yoga**
   a. considers a person’s past actions and behaviors.
   b. focuses on positive behaviors and interactions to influence the future.
   c. *focuses on finding balance in one’s life and breaking free of negative attributes in life, such as vanity, anger, greed, or fear.
   d. Both a and b above.

36. **True or False. Lee, et al., showed that massage therapy can significantly reduce cancer pain, in particular, pain associated with cancer surgery, as compared to not using massage therapy or to using conventional pain treatments alone.**
   b. False.

37. **Chronic stress eventually causes damage to the body due to the affected person**
   a. remaining in a type of hyper-alert state.
   b. eventually developing complications of inflammatory reactions, causing damage to the blood vessels, circulatory problems, and heart disease.
   c. developing increased susceptibility to illness, pain, and depression.
   d. *All of the above.

38. **The Alexander technique helps a person to have more awareness of the use of the body and to**
   a. *consider the body as whole.
   b. consider the parts of the body.
   c. focus on an individual part of the body during illness.
   d. be aware of how environmental triggers affect parts of the body.
39. A type of stress management technique that involves focusing on the different groups of muscles, and to help a person reduce pain, stiffness, anxiety, and fatigue caused by stiff muscles, is:
a. Yoga  
b. Alexander Technique  
c. *Progressive muscle relaxation  
d. Tai Chi

40. _________________ pain is the most common reason why people use complementary health practices, including yoga.
a. *Back  
b. Gastrointestinal  
c. General muscle pain  
d. Fibromyalgia

Correct Answers:

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The reference section of in-text citations include published works intended as helpful material for further reading. Unpublished works and personal communications are not included in this section, although may appear within the study text.


http://medischehypnose.nl/userfiles/file/%20review%20hypnotherapy%20for%20abdominal%20pain%20or%20IBS%20in%20children.pdf


47. Amor, L. (2013, Feb.). *Probiotics.* Ann Arbor, MI: University of Michigan Health System


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