This concise book is written by a native Finnish physical therapist and it teaches you highly effective skills on how to overcome and prevent many orthopedic problems. The topics are: an ideal posture and body alignment, a comprehensive approach for treating painful back disorders, total knee and total hip replacement surgeries, correct body mechanics, ergonomics, and much more. The text is in large print for easy reading and information is supported by many illustrations.

How to Prevent and Manage Common Orthopedic Problems

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How to Prevent and Manage Common Orthopedic Problems

Janne Mauri Linna
Second Edition

How to Prevent and Manage Common Orthopedic Problems

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6.1 Improve Your Posture and Restore Muscle Balance

Your first goal should be to improve your posture. It will take away a lot of strain from your back when you are able to improve your posture, and restore the 3 normal curves of your spine.

When you first try to correct your posture you may find it uncomfortable. This is because muscles, ligaments, tendons, and joints of the spine have adapted to the faulty posture, and you are now pushing them to a different position what they are used to. Therefore, it will take some time and gradual progression with the exercises to improve your posture.

In a faulty posture you see a combination of weak and strong muscles. Often the strong muscles are in a shortened position, and the weak muscles are in an elongated position, and they exist opposite side of each other. For example, short and strong posterior neck muscles are present with elongated and weak anterior neck muscles. In this case, restoring the muscle balance would mean stretching the tight posterior neck muscles, and strengthening the weak anterior neck muscles.

It is common to see the following combinations:

- Tight low back muscles – Weak abdominal muscles.
- Tight and shortened chest muscles – Weak elongated muscles between your shoulder blades (interscapular muscles).
- Tight and shortened posterior neck muscles – Weak and elongated anterior neck muscles.

You may be saying that you have already done strengthening and stretching exercises but they did not help. Quite likely your previous exercise regimen was too general and did not target the right areas. You need to be more selective with the exercises. Put emphasis on strengthening the weak muscles and stretching the tight muscles. A physical therapists can first analyze your posture and then give you a custom made home-exercise program based on the assessment. They also understand how to modify the exercises, and what precautions to take, if you have specific health concerns.
5 Types of Postural Alignment

Find out what type of posture you have. You can use a family member to help you with this, and have them view your posture from the side. Use form fitting clothing, and remove baggy clothing, so they can clearly see how your posture looks like. Do not try to change your standing posture for this test, and remember to stand like you normally do. Then look at the figure 6-1, and see if you can pick the type of posture you have.

“Image Credit: www.medical-illustrations.ca”

Figure 6-1. Five types of postural alignment.
6.2 Improve Your General Health

1. Exercise
   • Strong abdominal and back muscles give your back support, and act like a “back brace.”
   • Exercising will help you to lose weight, and carrying less weight means less strain to your back.
   • If your work involves heavy manual labor you are less likely to get injured when you are stronger.
   • Low intensity cardiovascular exercises will help you to remove metabolic waste byproducts from the muscles.

2. Rest
   • Our body needs rest to recover from the daily activities. Recommended amount of sleep is listed in many sources 7-8 hours a night for adults, and even more for adolescents.

3. Drink Plenty of Water
   • On average 60 percent of our bodyweight is water, and it serves many functions. These include but are not limited to: regulating body temperature, carrying nutrients and oxygen to cells, helping to dissolve minerals, flushing out waste products, lubricating joints (15).
   • Need for water intake varies depending on climate, activity etc. General rule is to drink eight 8-ounce glasses of water/fluid a day. In some medical conditions doctor may limit your fluid intake.

4. Eat Healthy
   • Eat plenty of high fiber foods (fruits, vegetables, whole grains).
   • Decrease the use of saturated fats and trans fatty acids. They both increase your cholesterol. Foods that contain higher amounts of saturated fats include high fat dairy products: cheese, ice cream, cream, butter.
Foods that are high in trans fatty acids include those high in partially hydrogenated vegetable oils: margarine, shortenings, commercially fried foods, some baked goods, processed foods.

One reason why the partially hydrogenated vegetable oils are used in the food industry is because they increase the shelf life of a product. However, this type of fat is in a form which our body cannot use effectively, and studies show that it even interferes with the absorption of the essential fatty acids. In December 2006 New York City became the first city in the nation to ban artificial trans fats at all restaurants. Restaurants in the city were required to eliminate the artificial trans fats from all of their foods by July 2008, according to an article (16) by the University of Maryland Medical Center

- Prefer a white meat (fish, chicken) to a red meat.
- Limit intake of sugary foods.
- Maintain an adequate calcium intake.

Know Your Daily Calorie Need

Many diet plans will ask you to count your daily total calorie need. Following calculations will help you to find out your daily BMR (basal metabolic rate). This is the number of calories your body uses each day if you do nothing else than rest.

By taking into account your activity level with another calculation we can find out what is your total daily calorie need. In order to lose weight you can either eat fewer calories than your daily total calorie need is or eat the same amount than before but exercise more.

The Harris Benedict Equation for calculating your BMR (for adults) is (17), (18):

Women BMR = 655 + (4.35 x weight in pounds) + (4.7 x height in inches) – (4.7 x age in years).

Men BMR = 66 + (6.23 x weight in pounds) + (12.7 x height in inches) – (6.8 x age in years).

To get your daily total calorie need we need to take into account also the activity level:
• If you are sedentary and do little or no exercise you would multiply BMR with 1.2.
• Person who is lightly active, performs light exercise/activity 1-3 days a week, would multiply BMR with 1.375.
• Person who performs moderate exercise/activity 3-5 days a week would multiply BMR with 1.55.
• Very active person who performs hard exercise/activity 6-7 days a week would multiply BMR with 1.725.
• Extra active person who does very hard exercise/sports or physical job would multiply BMR with 1.9.

Here is an example how to count the daily total calorie need for a 40-year-old woman who weighs 150 LBS, is 5 feet tall (60 inches) and lightly active. First we need to get her BMR:

655 + (4.35 x 150) + (4.7 x 60) – (4.7 x 40). This will give us a BMR of 1401 calories. As she is lightly active we will multiply this number with 1.375 to get her total daily calorie need.

1401 x 1.375 = 1926.375 calories. Her total daily calorie need is 1926.375 calories to maintain her current weight.

One pound of body fat is 3500 calories (18). If her goal is to lose 1 LB she could accomplish this in a week by eliminating 500 calories each day from her diet. When we deduct 500 calories from her total daily calorie need (1926.375 calories) we get 1426.375 calories. This is how many calories she could eat each day and still lose 1 LB weight in a week.
Learn to Understand and Use the Nutrition Facts Label (19)

The serving size, and the number of servings per container. Keep in mind that if you eat two servings that doubles the calories and other nutrient numbers, including % Daily Values.

The amount of calories per serving is here 290. 40 of those 290 calories come from fat.

Eating too much fat, saturated fat, trans fat, cholesterol and sodium may increase your risk of certain chronic diseases (cardiovascular problems, certain cancers). Keep intake of these low.

Most people don’t get enough dietary fiber, vitamin A, vitamin C, calcium and iron on their diets. Eating enough of these nutrients can improve your health.

This section tells that %DVs are based on a 2,000 calorie diet. Information below is not listed on all of the labels. It shows the recommended dietary advice for all the Americans. For example, it is recommended that you eat less than 300mg cholesterol daily, and at least 25g dietary fiber daily, on a 2,000 calorie diet.

Figure 6-21. Nutrition Facts Label. Percent Daily Values are based on a 2,000 calorie diet.
6.6 Learn Good Body Mechanics

Body mechanics: “The field of physiology that studies muscular actions and the function of muscles in maintaining body posture. Knowledge gained from such studies is especially important in the prevention of injury during the performance of tasks that require the body to lift or move.” (22) (Mosby’s Medical Dictionary).

Figure 6-30. Man with back pain.

Low back pain is the fifth most common reason for all physician visits in the USA (41).

Back pain is the most frequent cause of activity limitation in people younger than 45-years-old (41).

We discussed earlier about the importance of maintaining the 3 physiological curves of the spine when we sit and stand (Chapter 4). This is even more important during our daily activities, for example, when we are lifting heavy objects and the spine experiences more loading.

The amount of force you place on your back during lifting may surprise you. Your waist acts like the fulcrum in a lever system, on a 10:1 ratio. If you lift a 10 pound object, and we add in also the weight of the upper torso (typically ~ 100 lbs), you are placing ~ 1,100 pounds of pressure on the lower back! You can significantly decrease the pressure on the lower back by keeping the load close to your body while lifting, and by lifting correctly.
How to Lift Correctly?

- Arch your low back and maintain the lumbar curve (lordosis) during the whole lift.
- Tighten up your abdominal and back muscles to give additional support for your back.
- Come close to the load, and maintain it close to your body while lifting.
- Keep feet about shoulders width apart to improve your base of support.
- Bend your hips and knees, and perform most of the lift by pushing up with your strong lower extremities.
- AVOID LIFTING AND TWISTING YOUR BACK AT THE SAME TIME.
- Consider using a lumbar support for frequent or heavy lifting.

Figure 6-31. The correct way to lift.
Chapter 7
Special Considerations About the Spine

As we age our spine does go through degenerative changes. Some of the changes and potential problems are listed in this chapter.

Osteopenia and Osteoporosis

*Bone mineral density (BMD) is a measurement of the level of minerals in the bones, which indicates how dense and strong they are* (23). *Osteopenia refers to a bone mineral density (BMD) that is lower than the normal peak BMD, but not low enough to be classified as osteoporosis* (24).

**WHO defines osteopenia as a bone density between one standard deviation (SD) and 2.5 SD below the bone density of a normal young adult. Osteoporosis is defined as 2.5 SD or more below that reference point** (25).

People can have osteoporosis without any symptoms. It is a condition which can be treated and prevented, so early detection is important. The bone mineral density tests are useful for diagnosing osteopenia and osteoporosis. The most widely recognized bone mineral density test is called the DEXA test. The DEXA stands for dual energy X-ray absorptiometry.

1 of 2 women will have an osteoporosis related fracture in their lifetime, and the bones of the spine are usually the first to show the signs of osteoporosis according to Sara Meeks PT (26). It is important that you avoid excessive forward bending of your spine and sitting in a “slouched” posture if you have osteoporosis, as this will increase your risk of getting a compression fracture.

I recommend that you visit the National Osteoporosis Foundation web page: http://www.nof.org/ to get more information about osteoporosis and read other related literature. Ask your doctor if you have risk factors for the osteoporosis and when you should start getting tested for it.
Figure 7-1. A spine which is showing loss of bone density.

The top vertebra is showing a normal bone density. The middle vertebra is showing a moderate loss of bone density (osteopenia). The bottom vertebra is showing a severe loss of bone density (osteoporosis). See how the bone mass and the shape of the vertebra changes.
Chapter 8
Total Knee Replacement

Total knee replacement, also called a total knee arthroplasty, is a surgical procedure in which the orthopedic surgeon replaces the damaged parts of the knee with artificial parts. According to the Centers for Disease Control and Prevention web page (2006 National Hospital Discharge Survey) the total number of total knee replacement surgeries performed in the USA in 2006 was 542,000 (7).

The knee joint is made up of the lower end of the thigh bone (femur), the upper end of the shin bone (tibia), and the knee cap (patella). The joint surfaces of these bones are covered within the joint (where these bones touch) with an articular cartilage. This cartilage allows bones to smoothly glide against each other. See pages 15-16 about the “Knee Anatomy and Function,” which explains the knee joint in details including its supporting structures.

Common Reasons for Knee Pain and Loss of Knee Function:

- Among the over 150 different types of arthritis conditions osteoarthritis is the most common – and the single biggest reason why a total knee replacement surgery is performed. It usually occurs in people who are older than 50 years of age, and have a family history of arthritis. In osteoarthritis, also known as degenerative arthritis, the articular cartilage wears away resulting in knee pain and stiffness.

- Rheumatoid arthritis is an autoimmune, chronic inflammatory disorder, which unlike the “wear-and-tear damage” of the osteoarthritis affects the lining (synovial membrane) of the joints. The synovial membrane lines the non-cartilaginous surfaces of the synovial joints. In the rheumatoid arthritis the synovial membrane thickens, becomes inflamed, and produces an excess amount of synovial fluid. This chronic inflammation can eventually damage the articular cartilage, and lead to knee pain and stiffness.
• **Post-traumatic arthritis** may develop after knee injuries. The injuries leading to a post-traumatic arthritis can be such as: serious fractures, a tear in the meniscus or the knee ligament, damage to the articular cartilage (joint surfaces are no longer smooth and start wearing out). Injuries to the supporting structures of the knee can change the normal movement of the knee joint (biomechanics), placing an increased stress on the joint cartilage. As the post-traumatic arthritis progresses knee pain and stiffness may result.

**Non-surgical and Conservative Measures to Improve Knee Pain and Function**

Your doctor will likely try to help your knee problem first with conservative measures, in order to avoid having to operate the knee. Some of these measures may include:

• Nonsteroidal anti-inflammatory pain medications.
• Steroid injections.
• Physical Therapy.
• Weight loss.
• Cryotherapy (use of cold).
• The use of a knee brace, such as a hinged knee brace or an off-loading knee brace (see pages 19-20), which will provide support for the knee and help to align the faulty posture of the knee.
• Joint fluid therapy, which involves the injection of gel-like substances (hyaluronates) into a joint. They supplement the viscous properties of the synovial fluid.
• Use of ambulatory aids, and activity modifications.
• Glucosamine and Chondroitin Sulfate use.

None of these measures can correct the problem, because the articular cartilage cannot regenerate. However, they may help you significantly with the pain, swelling, and stiffness of the knee. You may be able to perform the activities of daily living easier after the conservative treatments, and also delay the need for a knee surgery. If these conservative measures fail in decreasing the knee pain, and in improving the function of the knee, your doctor may recommend a total knee replacement surgery.
Total Hip Replacement Surgery

In a total hip replacement surgery two things are done:

1. The arthritic bone and the articular cartilage are reamed (removed) from the hip socket (acetabulum), and a metal cup with a plastic (polyethylene), ceramic, or metal inner liner is attached.
2. The head and neck of the femur are removed. The shaft of the femur is then reamed to accept the metal component. The metal component has a round head, a neck, and a stem. The stem is secured (placed) inside the shaft of the femur. The femoral head can be either metal or ceramic.

Figure 9-2. X-ray picture taken after a total hip replacement.
**Cemented procedure.** In the cemented procedure a metal stem is cemented in place (inside the femur). In time the cement can crack and loosen, and the bond between the metal stem and the femur can be lost – and doctor may have to revise the hip replacement. The cemented procedure is often used with older patients (over the age of 60), and with younger patients when their bones are osteoporotic. The cemented procedure is more common than the noncemented procedure.

**Noncemented procedure.** Many studies show that young and active patients tend to loosen their artificial components prematurely. Therefore, orthopedic doctors often prefer to do a noncemented procedure with them. In the noncemented procedure a metal stem with a porous coating is used, which allows the bone tissue to grow into the metal.
Chapter 11
Treatments at the Pain Clinics

Back pain is one of the most common reasons for visiting a physician in the U.S (41). The pain clinics can effectively treat a variety of painful back conditions with minimally invasive outpatient procedures. Your doctor may refer you to a pain clinic if conservative treatments have failed in decreasing your back pain or if you want a less invasive surgery than a traditional back surgery. Here are some common procedures which are done at the pain clinics.

**Vertebroplasty**

The vertebral column (spine) consists of 24 articulating vertebrae. When a vertebra fractures, the usual rectangular shape of the bone can become compressed and distorted. Back pain can be felt from a fractured and compressed vertebra, but also from the nearby spinal nerves. The spinal nerves can get pinched when the height of a fractured vertebra decreases. People who are affected by the osteoporosis are prone to vertebral compression fractures. The vertebral compression fractures can also be caused by a cancer when it has spread to the bones.

The vertebroplasty procedure is used to relieve pain from spinal compression fractures. The procedure is done by a doctor and involves inserting bone cement into the fractured area of the vertebra with a needle. The mixture hardens, binds the bone fragments of the fractured vertebra together, and stabilizes the vertebra.

**Kyphoplasty**

This is another procedure which is used for treating spinal compression fractures. The doctor makes a small incision in the patient’s back, and then inserts a balloon device into the fractured vertebra. The balloon device is inflated to improve the height of the compressed vertebra, and to push it back to a more normal shape. The balloon is then deflated, which leaves a cavity inside the vertebra. The doctor injects this cavity with a bone cement, creating an “internal cast” for the vertebra. This procedure stabilizes the vertebral body.
Radiofrequency Block

This is an outpatient procedure in which a radiofrequency current is used to heat a portion of the nerve tissue in order to cause an interruption in the pain signals from that specific area (42). Since the nerve endings have a tendency to grow back the pain relief from this procedure is often temporary. However, this procedure can be repeated.

Laser Assisted Spinal Endoscopy (LASE)

This is a minimally invasive outpatient procedure, and it can be used for treatment of back pain which is caused by a bulging disc pressing on a spinal nerve.

The disc consists of two different parts. The center part of the disc is called the nucleus pulposus, and the outside portion of the disc is called the annulus fibrosis. The strong annular fibers surround and contain the softer nucleus pulposus. The nucleus pulposus acts as a “shock absorber.”

The Clarus Medical company states that, “The LASE technique is designed to reduce the bulging nucleus enough to eliminate the pressure it is placing on the nerve. The LASE endoscope allows your doctor to see the bulging disc tissue and remove it with the laser fiber. By removing some of the nucleus from the disc, the pressure on the nerve is reduced or eliminated along with the pain” (43).

Many articles indicate that patients who may benefit from this surgery typically have low back pain which is radiating into one or both legs. Another important criterion is that the bulging disc would need to be contained in order to get a better outcome from this surgery (43). In a contained disc the center part of the disc (the nucleus pulposus) pushes against the outer part of the disc (the annulus fibrosis) – but not through it – causing the disc to bulge and press against the nerve. When the disc herniation is not contained the nucleus pulposus pushes its way through the annulus fibrosis pressing directly against the nerve.
12.4 Diet and Detoxification

Your body needs essential nutrients to function well. “An essential nutrient either cannot be synthetized by the body at all, or cannot be synthetized in amounts adequate for good health, and must be obtained from a dietary source” (60) (Wikipedia). Categories of essential nutrients include vitamins, dietary minerals, essential fatty acids and essential amino acids.

There are several reasons why achieving a healthy diet and getting enough essential nutrients is difficult:

- The use of large quantities of synthetic fertilizers and over farming has decreased the mineral content of the American soils, and as a result of this the plants are less nutritious.
- We get exposed to many chemicals which the food industry uses to grow and process its food, such as herbicides, pesticides, preservatives, artificial colors and flavors, drugs given to animals, sweeteners, stabilizing agents, texturizers and antimicrobials. It is no secret that some of these chemicals can affect our health in a harmful way and accumulate in our body.
- Food irradiation uses ionizing radiation for the purpose of destroying bacteria, insects and other contaminants which could be present in the food. It is also used for sprout inhibition and delay of ripening. Concerns have been expressed in many literature that irradiation can cause chemical changes in the food which are harmful to the consumer.
- Lack of information about a healthy diet and the fast-food culture.

Interesting Facts:

- According to the USDA, “U.S consumption of all caloric sweeteners has risen from 127 pounds per capita in 1986 to 153 pounds in 1996.” (61) This means that we Americans consume almost one-half pound of sugar per day.
- Over 400 pesticides are routinely used in conventional farming.
- The Food and Drug Administration (FDA) has approved more than 3,000 food additives for use in the United States (62).
- The U-17 soccer World Cup was held year 2011 in Mexico, and majority of the soccer players who participated in the tournament tested positive for the use of a banned anabolic agent called clenbuterol. However, the teenage soccer players
were not cheating as they had received the clenbuterol unintentionally from eating contaminated meat. The meat they ate was contaminated because some of the farmers in Mexico had been feeding banned steroids to the livestock.

- “More than 60% of the packaged food items in the United States contain genetically altered ingredients,” according to Jonathan Campbell (63). These genetically altered organisms are nearly unavoidable as they are not listed in the food labels.
- Mercury is highly toxic to us, and according to the FDA nearly all fish and shellfish contain traces of mercury.

Our body has various natural processes for removing or neutralizing toxins. However, often the toxins are accumulating in our body faster than they can be eliminated, and this accumulation of toxins can be a major contributing factor for many chronic health problems.

**Detoxification therapy** helps your body to remove these toxic substances or qualities. There are a large number of methods of detoxification available:

- **Fasting** is an easy, inexpensive and effective method of detoxification. **Water fasting** forces the body to use fat for energy, and this releases many fat-stored chemicals into the blood stream and makes it easier for the body to eliminate them. **Juice fasting** has many benefits. The juice from fruits and vegetables is full of live enzymes, vitamins and minerals, and it stimulates the immune system. Fasting is often combined with enemas and colon therapy. An enema cleanses primarily the rectum and the lower area of the colon, whereas with colonic hydrotherapy the entire length of the colon can be reached.

- **Eat organic foods and follow a healthy diet.** Organic foods are grown without the use of synthetic fertilizers or pesticides, and without using genetically modified organisms.

- The FDA has approved **chelation therapy** only for the treatment of lead poisoning. Chelation means “to bind.” In chelation therapy a chelating agent (usually EDTA) is administered intravenously and it binds to various toxic metals, which are then eliminated from the body through the kidneys. Alternative medicine has used chelation therapy also as a non-standard treatment for many other conditions, such as cardiovascular disorders and treatment of autism. However, many research results have found chelation therapy not to be an effective treatment for cardiovascular disorders and autism.
Liver flush is used for removing harmful toxins which are stored in the liver. The liver flush diet can consist of liver cleansing foods, herbs, spices, and various drinks.

The hyperthermia treatments, for example the use of saunas, increase the body temperature and have therefore many of the same benefits than fever has. The increase in our body temperature (from fever or hyperthermia treatments) over the normal body temperature helps our body to defend against invading organisms as many of them cannot survive once the body exceeds its normal temperature. The hyperthermia also stimulates our immune system, and mobilizes toxins from the fat cells where they are stored.

Filter your water.

Seek advice from your doctor before trying detoxification treatments. The doctor can recommend the appropriate degree of intensity for the detoxification treatments and tell if these treatments are safe for you.

12.5 Herbal Medicine

Herbal medicine, also called botanical medicine or phytotherapy, refers to using various plant parts for medicinal purposes. The herbaceous plants (herbs) do not form woody stems – the stems are soft and green. They are annuals and complete their life cycle in a single growing season. A plant part which is used can be a seed, fruit, root, bark, leaf, flower, stem, berry, or any other part of the plant which has medicinal properties. Herbs are available in many forms, such as capsules, tablets, teas, whole herbs, powders, extracts, tinctures, topical creams, ointments, and essential oils.

The origins of Chinese herbal medicine date back to the Han dynasty in China (206 BC – 220 AD), when the Shennong Emperor’s Classic of Materia Medica was compiled. It is considered as the oldest book on Chinese herbal medicine. Many medicines which are recorded in it are still in use. Native American and African cultures have used herbal medicine in their healing rituals, and herbal medicine is also an essential part of the Indian Ayurvedic medicine.

The scientists have studied the use of plants by native cultures, and then used this information for developing drugs. Daniel S. Fabricant and Norman S. Farnsworth identified 122 compounds of defined structure, obtained from only 94 species of plants, that are used globally as drugs (64). They stated that, “Because these compounds are
derived from only 94 species of plants, and a conservative estimate of the number of flowering plants occurring in the planet is 250,000, there should be an abundance of drugs remaining to be discovered in these plants.” (64)

Here are some examples of drugs which are derived from plants:

- **Codeine** is an analgesic (reduces pain), and antitussive (effective against cough). Its plant source is *Papaver somniferum* (opium poppy).
- **Digoxin** is cardiotonic (increases the strength of the heart contraction). Its plant source is *Digitalis purpurea* (foxglove).
- **Morphine** is an analgesic. Its plant source is *Papaver somniferum* (opium poppy).
- **Quinine** is antimalarial. Its plant source is *Cinchona ledgeriana* (quinine tree).
- **Taxol** (anti-cancer drug). Its plant source is the Pacific yew tree (*Taxus brevifolia*).

The benefits of the herbs include, but are not limited to following actions:

- **Analgesic**: Herbs that decrease pain.
- **Anti-inflammatory**: Herbs that reduce inflammation.
- **Antimicrobial**: Herbs that assist the body to destroy or resist harmful microorganisms.
- **Antispasmodic**: Herbs that decrease muscle tension.
- **Astringent**: Herbs that tighten and tone tissues.
- **Carminative**: Herbs that improve digestion, decrease bloating.
- **Demulcent**: Herbs that have a soothing effect on irritated or inflamed tissues.
- **Diuretic**: Herbs that increase urine output and help the body to remove excess fluid.
- **Expectorant**: Herbs that help to loosen and remove mucus from the lungs.
- **Hepatic**: Herbs that help the function of the liver.
- **Hypotensive**: Herbs that lower elevated blood pressure.
- **Laxative**: Herbs that promote bowel movements.
- **Nervine**: Herbs that have a “calming” effect on the nervous system.
- **Tonic**: Herbs which promote overall wellbeing.

What is the FDA saying about herbal supplements?

The herbal supplements are classified as dietary supplements by the Dietary Supplement Health and Education Act of 1994 (DSHEA). The DSHEA allows herbal supplements to claim limited benefits, but the claims cannot be to treat, cure or prevent a disease (65).
This concise book is written by a native Finnish physical therapist and it teaches you highly effective skills on how to overcome and prevent many orthopedic problems. The topics are: an ideal posture and body alignment, a comprehensive approach for treating painful back disorders, total knee and total hip replacement surgeries, correct body mechanics, ergonomics, and much more. The text is in large print for easy reading and information is supported by many illustrations.

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