

## CERTIFIED ADVANCED HERBALISM COURSE - SESSION 21: The Structural System

The structural system consists of the skeleton (bones), muscles, skin, membranes and connective tissues. The bones provide a strong, stable, yet mobile, framework on which the muscles can act. The skeleton also supports and protects body organs, notably the brain and spinal cord (which are encased in the skull and spine) and the heart and lungs (which are protected by the ribs).



Structural system problems and disorders can include infections and inflammations (arthritis, gangrene, tetanus, warts, dermatitis, cold sores, ringworm, psoriasis, acne, ulcers), muscular dystrophy, tumors and fibroids, cramps, fibromyalgia syndrome, and autoimmune disorders (lupus, arthritis).

### Examining the Structural System

The skeleton plays an indispensable role in movement. In effect, it consists of a series of independently movable internal levers on which the muscles can pull to move different parts of the body. The skeleton also supports and protects body organs, as explained above. The ribs make breathing

possible by supporting the chest cavity so the lungs are not compressed, and by helping in breathing movements.

Another function of the skeleton is the production of blood cells, which are formed in bone marrow. The skeleton also acts as a reservoir for minerals, like calcium, which can be utilized when needed by other parts of the body.

Muscles are structures composed of bundles of specialized cells that contract and relax to create movement. Muscles move both the body and the organs within it. The brain controls the voluntary movements of the skeletal muscles. Muscle activity is affected by changes in chemical composition of the fluid surrounding the muscle cells. A decrease in potassium ions causes muscle weakness; a reduction in calcium ions causes muscle spasm.

Membranes are layers of tissue, often very thin, that cover a body surface, line a cavity, divide a space or organ, or form the boundaries of individual cells. We have several membranes, including the meninges, peritoneum and tympanic.

Body tissues are collections of cells specialized to perform a particular function. Connective tissues include blood, adipose tissue (fat) and various fibrous and elastic tissues (tendons, ligaments, cartilage, etc.) that hold the body together.

Skin is the body's largest organ. It protects the internal organs from the environment. Its cells are continually being replaced, as they are lost to wear and tear. The skin consists of a thin outer layer (the epidermis) and a thicker inner layer (the dermis). Beneath the dermis is the subcutaneous tissue, which contains fat. The hair and nails are extensions of the skin and are composed mainly of keratin – the main constituent of the outermost part of the epidermis. The skin acts as a barrier, shielding internal organs from injury, bacteria and harmful sunlight rays. It also regulates body temperature through perspiration.

You can help maintain structural health by getting adequate minerals in your diet, especially calcium, magnesium and phosphorus. These minerals, along with vitamin D, have been shown to help treat and prevent osteoporosis and osteomalacia (the softening and demineralizing of bones). Vitamin D is essential to the metabolism of calcium and phosphorus in the body.

### Did You Know?

- The Institute of Medicine recently increased the Recommended Dietary Allowance (RDA) for calcium. The new daily levels recommended are 1,300 mg for children 9-18 years, 1,000 mg for people 19-50 and 1,200 mg for those over 50. Old levels were 400-600 mg/day for infants up to 1 year, 800 mg/day for children 1-10, 1,200 mg/day for ages 11-24 years and 800 mg/day for adults over 24.
- Back problems are the most common physical complaints among American adults.
- It is estimated that between 30-50 million Americans have arthritis, and most adults over 50 show some signs of it.
- The National Research Council reports that silicon deficiency leads to structural abnormalities of the long bones and skull in chickens, leading researchers to conclude that silicon is also important to the human structural system.

## Structural System Analysis

If you have four or more of the following indications, you may consider nutritional aid to the structural system.

- Skin/complexion problems
- Menopausal concerns
- Hair loss
- Sore or painful joints
- Difficulty in maintaining ideal weight
- Low endurance/stamina
- More than 2 cups of caffeinated beverages per day
- Brittle or easily broken fingernails
- Muscle cramps
- Feeling out of control
- Weak bones, teeth or cartilage
- Don't get enough exercise

## Structural System Suggestions

- Eat regular, balanced meals
- Get adequate sources of calcium
- Perform weight-bearing exercises, including walking
- Chew fibrous fruits and vegetables for strong teeth
- Practice oral hygiene

## Structural System Products

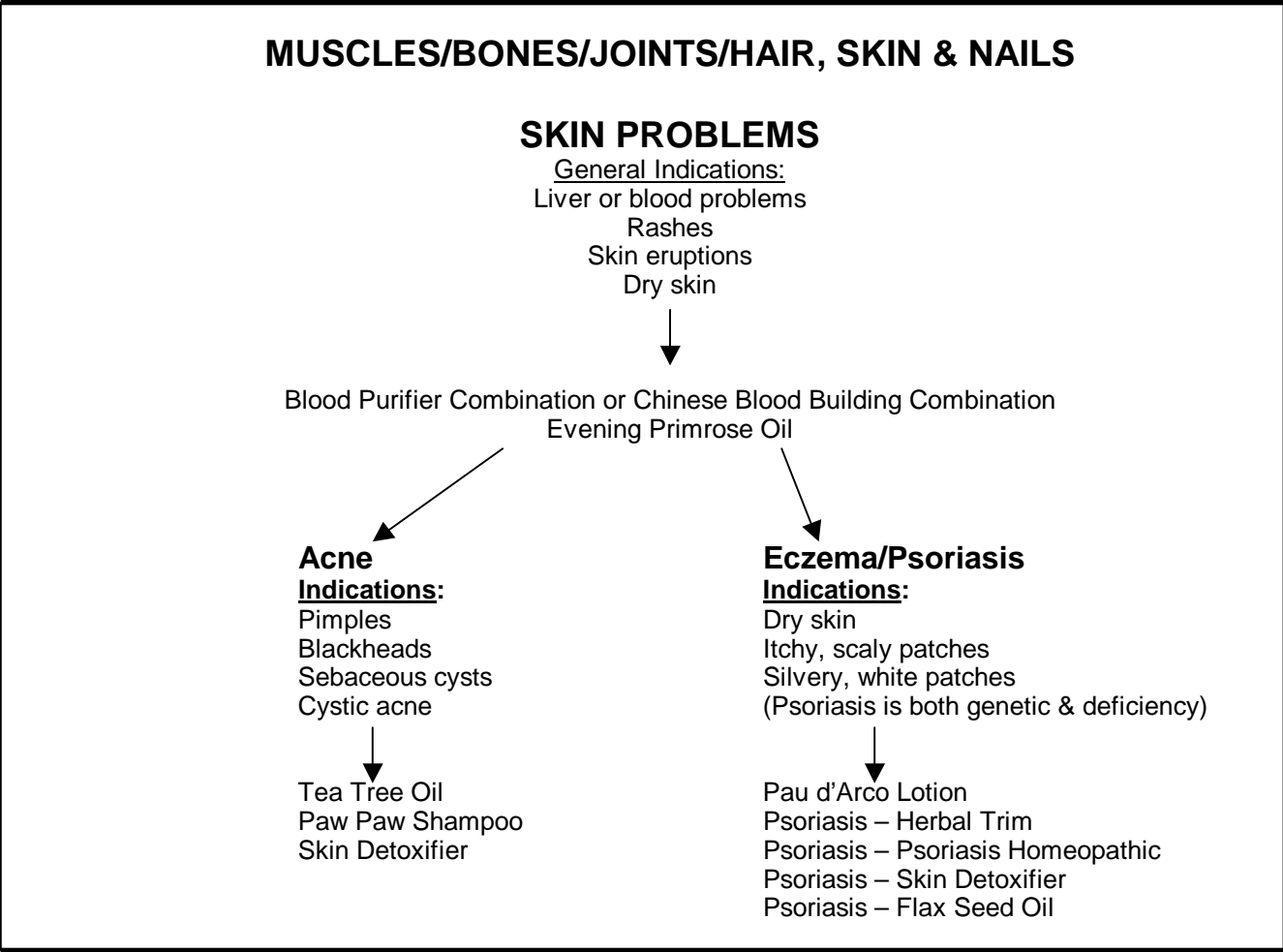
The following products are listed with ingredients only as not to sell any particular product line. These ingredients can be purchased at any store you wish. If you are interested in the actual combinations listed below, please contact JLS directly.

### Muscular/Skeletal

- **Skeletal Combination** – This combination provides minerals and nutrients the body needs for strong, healthy bones and connective tissues. It contains vitamins A, C, D, B6 and B12, plus calcium, iron, phosphorus, magnesium, zinc, copper, manganese, potassium and boron contained in an herbal base to ensure maximum bioavailability of these important minerals and nutrients.
- **Hair/Skin/Nail Combination** – Along with calcium, magnesium, zinc and other trace minerals, silicon helps build stronger, healthier bones, teeth and nails. The two herbs richest in silicon are dulse and horsetail. These two herbs plus sage and rosemary make up this combination, a product that encourages strong, flexible fingernails; shiny, healthy hair; and healthy skin. Silicon also strengthens bones and joints.
- **Joint Support Combination** – This combination of herbs and nutrients was designed to reduce joint inflammation and ease pain. It contains bromelain (a protein digestive aid), hydrangea, yucca, horsetail, celery seed, alfalfa and nine other herbs that support healthy joints.
- **Glucosamine** – Glucosamine is a building block of cartilage. As such, it helps relieve arthritis symptoms and restore cartilage health. By supplementing with glucosamine, we can strengthen and rebuild cartilage throughout the body.
- **Chondroitin** – Chondroitin attracts fluid into the joints, where it acts as a shock absorber during impact. This fluid also brings vital nutrients to the cartilage. Chondroitin protects the cartilage from premature disintegration.
- **Fibromyalgia Combination** – If the body is deficient in energy-producing fuel, it breaks down muscle protein to create energy. This process causes pain, fatigue and other problems. Doctors have found that many people in this condition respond to supplements containing malic acid and magnesium, the two ingredients in this combination. These two nutrients provide fuel that generates energy to operate the body.
- **MSM/Glucosamine Cream Combination** – MSM/Glucosamine Cream contains the nutrients of MSM with the cartilage-strengthening properties of glucosamine to offer a nutritional cream for weary joints. It also enhances the appearance of skin, promoting softness and smoothness.

**Skin**

- **Blood Purifying Combination** – This combination contains a dozen herbs that help purify and cleanse the blood, thereby supporting proper liver function and healthy skin. Ingredients include burdock, pau d’arco, red clover, sarsaparilla, yellow dock, dandelion, buckthorn, cascara sagrada, peach bark, yarrow, Oregon grape and prickly ash bark.
- **Evening Primrose Oil** – Evening Primrose Oil assists the body in producing prostaglandins. Each capsule provides gamma linolenic acid (GLA). Evening Primrose provides essential fatty acids that help with eczema and brittle nails. Also contains vitamin E plus linolenic and oleic acids and palmitic oil.
- **Tea Tree Oil** – Tea Tree Oil is known as oil of Melaleuca. Kind to the skin and virtually irritant-free, Tea Tree Oil is highly prized for its antiseptic and antibacterial benefits.
- **Pau d’Arco Lotion** – Herbalists have long used pau d’arco to enhance and fortify the human immune system. Pau d’Arco Lotion is specially formulated for topical use on rashes on hands, arms and face. The emollient properties of Pau d’Arco leave skin feeling sooth and supple.
- **Herbal Calcium Combination** – This combination of calcium-rich alfalfa, oat straw, marshmallow, wheat grass, plantain, hops and horsetail provides nourishment to the structural system. These herbs are primarily vulnerary mucilants; that is, they soothe tissues and help them heal. This product may be taken internally or used as a poultice.



## MUSCLES/BONES/JOINTS/HAIR, SKIN & NAILS

### HAIR, SKIN & NAILS

Indications:

Split ends; hair lacks luster  
Brittle fingernails



Hair, Skin & Nail Combination  
Super GLA  
Protein Digestive Aid - HCL

## MUSCLES/BONES/JOINTS/HAIR, SKIN & NAILS

### WEAK BONES

General Indications:

Brittle or easily broken bones  
Bone or joint injuries  
Lack of exercise  
Menopause  
Insufficient calcium  
Vitamin D deficiency  
Diet high in phosphate-containing foods such as animal products, alcohol and caffeine; smoking  
Hydrochloric acid deficiency



Skeletal Combination  
Herbal Calcium  
Boron – Bone Hardener

## MUSCLES/BONES/JOINTS/HAIR, SKIN & NAILS

### INFLAMMATION

#### Joints

Indications:

Heat and/or swelling  
Sensitivity to damp weather  
Diagnosis of arthritis, gout or other  
Inflammatory joint disease  
High-protein diet



Joint Support Combination  
Glucosamine – replaces cartilage  
Chondroitin – moisturizes bones  
(Use if walking and hearing cracking)  
Noni  
MSM  
Coral Calcium – alkalinizing – arthritis  
Green drink – alkalinizing – arthritis

#### Muscles

Indications:

Heat and/or swelling  
Muscle pain  
Sleep disorders  
Depression  
Fatigue



Fibromyalgia Combination  
MSM/Glucosamine Cream (put on "it is")  
IGF Spray

## CERTIFIED ADVANCED HERBALISM COURSE – SESSION 21 – QUESTION & ANSWERS

NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

PHONE: \_\_\_\_\_

FAX: \_\_\_\_\_

E-MAIL: \_\_\_\_\_

Please be sure to fill out the information above, complete the test and e-mail or fax it back to us at 425-955-4639 (US) or at +353 1 647 5705 (EU) or e-mail it to us at [joyful@best.com](mailto:joyful@best.com) (US) or at [answers@med-herbs.com](mailto:answers@med-herbs.com) (EU). We will grade your question & answer session and will let you know if we have any questions or concerns.

1. Tissues are collections of \_\_\_\_\_ specialized to perform a particular function.
2. \_\_\_\_\_ is the largest organ of the body. It protects organs from the environment and regulates body temperature via perspiration.
3. What acts as a reservoir for minerals like calcium and is responsible for producing red blood cells?
4. What are some indications that this system is weak and may need nutritional aid?
5. Who can I help? List five people who exhibit the above indications and who may benefit from nutritional aid to the structural system.