**Bone Complex: Flavonoids for Structural Support**

Bone Complex is a unique combination of Epimedium aerial parts, Kudzu root, Red Clover flowering tops and Black Cohosh root. Three of these herbs contain flavonoids which may support healthy bones. Flavonoids are a large group of naturally occurring compounds (many are found in foods), and are classified by structure into several groups including flavonols and isoflavones.*

**Bone: structure & function**

Connective tissue protects and supports the body and its organs. Bone is one type of connective tissue. The functions of bones include support (e.g., posture), protection (e.g., of the brain, spinal cord), motion, mineral storage (mostly calcium and phosphate), energy storage (e.g., fat-rich yellow marrow) and production of blood cells (occurs in the red marrow). Bone is a tissue that is constantly changing. Like other connective tissue, bone is made up of collagen, but unlike other connective tissue, it also contains a lot of calcium salts, mainly calcium phosphate. The combination of collagen and calcium phosphate makes bones strong yet flexible. Some bones grow for your entire life, others stop growing (in length) in your twenties. Bones are not uniformly solid and they are made up of many parts. Several of these parts, including the periosteum, a thin membrane covering the outside of the bone, contain the cells necessary for the growth and repair of bone.1,2,3

**Healthy bones: breaking down & building up**

Bones cannot grow continually. As the width of a bone increases, the marrow cavity needs to remain the same size relative to the length of the bone, so some of the cells in the walls of the cavity are destroyed. In addition to this, the body’s tissues need a certain amount of calcium (e.g., for muscle contraction, nerve conduction), so the matrix part of the bone is broken down (to release calcium). The matrix can also be rebuilt to deposit calcium. This breaking down and rebuilding is called remodeling. As well as allowing the body to store calcium, remodeling allows worn or stressed bone to be removed and replaced with new bone tissue.4,5

The cells responsible for bone growth are called osteoblasts (oste = bone, blast = bud). Osteoclasts are the cells responsible for the breakdown (oste = bone, clast = break) and removal (called resorption) of bone tissue.1,2,6

Normal bone growth in children and adolescents, and replacement of bone tissue in adults depend on several factors including sufficient quantities of calcium and phosphorus in the diet, sufficient vitamins A, C and D and the manufacture of the proper amounts of the certain hormones in the body. Bones respond to stress by increasing osteoblast activity, leading to an increase in bone formation and/or bone density. Physical activity is an example of one such stress: a physically active person doing weight-bearing exercise can build stronger bones.1,2,6

---

* These statements have not been evaluated by the Food & Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.
Battle of the bone cells?
After childhood, remodeling usually occurs at a balanced rate: for every bone unit that is broken down, another is rebuilt. The rate of remodeling varies according to the part of the bone and the location of the bone. However, at midlife, particularly for women, the osteoblasts become less active leading to a decrease in bone mass. Other factors that can contribute to a decrease in bone mass in later years include cigarette smoking, excessive intake of alcohol and use of certain prescription drugs.1-3

How Bone Complex Keeps You Healthy
Supports bone health
Randomized, double-blind, placebo-controlled clinical trials have found that Black Cohosh and the flavonoids in Epimedium, Kudzu and Red Clover help keep bones strong and healthy.4-8 This is particularly the case in mature women, and often in conjunction with weight-bearing exercise and a healthy diet containing food sources of calcium and vitamin D.9

These flavonoids may do this by supporting normal bone remodeling process and optimal repair of bone tissue that has been damaged as a consequence of normal wear and tear and aging. Specifically, this support may be achieved by rebalancing bone remodeling to have a net positive effect on bone formation compared to bone resorption.4,5,7,9

What Makes Bone Complex Unique
Bone Complex is unique in the professional herbal products industry because:

- The label states exactly how much each tablet contains of the important plant constituents (icariin, isoflavones of Red Clover and Kudzu)
- MediHerb tests raw materials for the quantity of:
  - icariin in Epimedium
  - isoflavones in Red Clover
  - isoflavones in Kudzu (as daidzein, daidzin, puerarin)
- MediHerb’s testing also ensures the icariin and isoflavones are retained in the product throughout manufacture

Unique Manufacture & Analytical Testing
Quality and safety ensured

- Manufactured in Australia to the high standards of international pharmaceutical Good Manufacturing Practice
- Raw materials and finished product are subjected to tough quality standards
- Use of the latest and most relevant test methods for the analysis of raw materials and finished products

References
4 Zhang Q, Qin L, Shi Y J Bone Miner Res 2007; 22(7): 1072-1079

These statements have not been evaluated by the Food & Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.

TM1145 09/09 © MediHerb® 2009. All rights reserved.