



Quality is our Passion  
Passion Flower (*Passiflora incarnata*)

# Bone Complex

M1145

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## 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 (eg posture), protection (eg of the brain, spinal cord), motion, mineral storage (mostly calcium and phosphate), energy storage (eg 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.<sup>1-3\*</sup>

### 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 (eg 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.<sup>1,2\*</sup>

The cells responsible for bone growth are called osteoblasts (*osteo* = bone, *blast* = bud). Osteoclasts are the cells responsible for the breakdown (*osteo* = bone, *clast* = break) and removal (called resorption) of bone tissue.<sup>1,2\*</sup>

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.<sup>1,2\*</sup>

Supplement Facts		
Serving size:	1 tablet	
Servings per container:	40	
Amount per Serving		%DV
Calories	3	
Calcium	40 mg	4%
Epimedium herb top 12:1 extract from <i>Epimedium sagittatum</i> herb top 2.4 g Containing icariin 20 mg	200 mg	†
Red Clover herb flowering top 5:1 extract from <i>Trifolium pratense</i> herb flowering top 500 mg Containing isoflavones 8 mg	100 mg	†
Kudzu root 10:1 extract from <i>Pueraria lobata</i> root 700 mg Containing puerariae isoflavones calculated as daidzin, puerarin, daidzein 28 mg	70 mg	†
Black Cohosh root 4:1 extract from <i>Cimicifuga racemosa</i> root 80 mg	20 mg	†

† Daily Value (DV) not established.

Other ingredients: Cellulose, calcium acid phosphate, sodium starch glycolate, maltodextrin, hypromellose and magnesium stearate.

**Caution:** Contraindicated in pregnancy, lactation and in women with estrogen-dependent tumors such as breast cancer. Caution in patients with liver problems, who frequently use alcohol or take medications.

Product No	Content
M1145	40 Tablets



Associate Professor Kerry Bone  
MediHerb Co-Founder and  
Director of Research and Development

### A Phytotherapist's Passion

"Philosopher and teacher Rudolf Steiner once said that, for every human illness, somewhere in the world there exists a plant which is the cure. I believe that there is a healing potential locked inside plants which is integral with their evolution, just as it is part of human evolution to learn to tap this wonderful gift of Nature."

\* 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.<sup>1-3\*</sup>

## 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.<sup>4-8</sup> 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.\*

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.<sup>4,5,7,9\*</sup>

## 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

- <sup>1</sup> Lazaroff M. *The Complete Idiot's Guide to Anatomy & Physiology*. Alpha, Indianapolis, 2004.
- <sup>2</sup> Tortora GJ, Anagnostakos NP. *Principles of Anatomy and Physiology*, 4th Edn. Harper & Row, New York, 1984.
- <sup>3</sup> U.S. Department of Health and Human Services. Handout on Health: Osteoporosis. NIH Publication No. 07-5158, April 2007. Available online: [http://www.niams.nih.gov/Health\\_Info/Bone/Osteoporosis/osteoporosis\\_hoh.pdf](http://www.niams.nih.gov/Health_Info/Bone/Osteoporosis/osteoporosis_hoh.pdf). Accessed 8 May 2009.
- <sup>4</sup> Zhang G, Qin L, Shi Y. *J Bone Miner Res* 2007; **22**(7): 1072-1079
- <sup>5</sup> Marini H, Minutoli L, Polito F et al. *Ann Intern Med* 2007; **146**(12): 839-847
- <sup>6</sup> Wu J, Oka J, Tabata I et al. *J Bone Miner Res* 2006; **21**(5): 780-789
- <sup>7</sup> Atkinson C, Compston JE, Day NE et al. *Am J Clin Nutr* 2004; **79**(2): 326-333
- <sup>8</sup> Wuttke W, Seidlova-Wuttke D, Gorkow C. *Maturitas* 2003; **44**(Suppl 1): S67-S77
- <sup>9</sup> Morabito N, Crisafulli A, Vergara C et al. *J Bone Miner Res* 2002; **17**(10): 1904-1912



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## Quality is our Passion

MediHerb products are developed by experts and leaders in the field of herbal therapy, using scientific evidence and hundreds of years of traditional knowledge.

Kerry Bone and over 20 health care professionals work within MediHerb while still managing their own clinical practices, plus we consult with an advisory board of health care professionals from around the world.

Our products are made using only the highest quality ingredients which are extensively tested for purity and potency. The MediHerb manufacturing plant operates to a strictly regulated pharmaceutical standard and is regularly audited by the Therapeutic Goods Administration (similar to the FDA), the same body that audits conventional pharmaceutical manufacturing facilities. The comprehensive regulations in Australia mean that you receive a safe and effective product that has been manufactured to pharmaceutical standards.

We know from our experience as health care professionals that the quality of a product you take makes a huge difference to the health outcome you experience. We dedicate ourselves to researching and making the best possible products to deliver health solutions that work.



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