



Keep your bones strong and healthy

Your joints and spine will degenerate as you grow older. However, maintaining a healthy lifestyle can slow down the process.

Providing quality protein and nutrients for the whole family

BESIDES water, protein is the second most abundant organic molecule in the body, as an average human body comprises 15% to 18% of protein. It is found throughout the body – in muscle, skin, hair, antibodies, hormones, enzymes and virtually every other part of body tissues. Protein is made up of amino acids which are the initial materials for protein synthesis and constituent of tissue. As protein cannot be stored in the body, it is crucial to replenish the protein supply daily for keeping the body functions normal and maintaining good health.

Why protein is important for all ages

- **Children** – Promotes growth and development of muscles, height and brain cells.
- **Adults** – Builds body strength as well as physical and mental health.
- **Elderly** – Maintains muscle mass for optimal body strength and mobility.

Combining nutrients works better

According to several studies, people who

Do you know?

Arterial calcification is a gradual and progressive process of hardening of arteries due to calcium deposits over time. This will result in reduction of arterial elasticity and increased risk of developing cardiovascular disease.



Biogrow HPF-5 PLUS is an improved formula with a unique blend of plant protein and digestive fibre as well as various nutrients needed for your bones.

meet daily protein requirements maintain better bone health than people who do not achieve recommended daily protein intake because proteins not only stimulate muscle protein synthesis but also enhance calcium metabolism. A combination of protein with calcium and other bone nutrients, such as magnesium and vitamins D3 and K2, helps provide higher integrity and density of your muscles and bones, if compared with taking protein or calcium supplementation alone. Magnesium and vitamins D3 and K2 can

significantly improve bone health as magnesium and vitamin D3 enhance the absorption and utilisation of calcium while vitamin K2 helps to improve bone density, prevent heart disease and arterial calcification by directing calcium to the bones and teeth and keeping the calcium away from the arteries.

Biogrow HPF-5 PLUS is an improved formula with a unique blend of plant protein and digestive fibre, fortified with bone health nutrients such as calcium, magnesium

“Proteins not only stimulate muscle protein synthesis but also enhance calcium metabolism.”

and vitamins D3 and K2. It contains no added sugar and is low in fat, cholesterol-free and lactose-free. It is suitable for all ages as well as vegans as the ingredients in Biogrow HPF-5 PLUS are not derived from animal sources. Take one scoop of Biogrow HPF-5 PLUS (~16g) daily can provide:

- ≥61% of plant protein (non-genetically modified organism (non-GMO) soy and pea proteins) complete with all nine essential amino acids for protein synthesis.
- Synergistic effect with magnesium and vitamins D3 and K2 for better absorption, retention, utilisation and deposition of calcium.
- ≥18% of digestive fibre (wheat resistant dextrin) to regulate bowel movement, especially of people with a tendency to constipation.

This article is provided by Legosan (Malaysia) Sdn Bhd.

■ For more information, call 03-7956 2220 (Mondays to Fridays, 9am to 5pm) or email your enquiry to info@biogrow.com.my



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MSUMC facilities include 6 operation theatres, 6 ICUs, 6 labour rooms, 24 specialist clinics, and 900 parking bays. Complementing the services are expert consultants and professional staff ensuring the best healthcare experience for all our patients.

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Maintaining structure

BONES are an important organ in our body with many functions. Their role includes providing structure, protecting internal organs, anchoring muscles and storing calcium. They also facilitate movement and are important for blood cell formation. Therefore, maintaining bone health is important for everyone.

Normal bone metabolism is the complex sequence of bone turnover and bone formation. The bones are continuously changing where the old bones are broken down and replaced by new bones.

Dr Ruzaimi Md Yusoff, consultant orthopaedic surgeon at MSU Medical Centre, says "Most people reach their peak bone mass around the age of 30. After that, bone remodelling continues, but you lose slightly more bone mass than you gain because of a decrease in osteoblast (bone formation) activity."

"That is why it is important to have as much bone mass as possible by the age of 30. The higher the peak of bone mass, the less likely for us to develop osteoporosis at a younger age."

The following are the risk factors which can affect bone health. They can be divided into modifiable and non-modifiable.

Modifiable risk factors are:

- **Diet.** A low calcium intake will cause low bone density and will lead to early bone loss, causing higher risk of fractures.

- **Physical activity.** Not exercising and not being active for long periods of time can increase chances of getting osteoporosis.



Dr Ruzaimi Md Yusoff.

- **Body weight.** Maintaining ideal body weight is important for bone health as extremely thin and underweight individuals usually have lesser bone mass, making it easy to break.

- **Smoking.** Many research suggests that tobacco will increase risk of osteoporosis.

- **Alcohol.** People who consume a lot of alcohol are more likely to get osteoporosis.

- **Medicine.** Prolonged usage of corticosteroid medications such as cortisone, prednisolone and dexamethasone can be damaging to the bone.

Non-modifiable risk factors are:

- **Age.** Advanced age causes thinning and weakening of the bone.

- **Gender.** Women have greater risk of osteoporosis as they have

less bone tissue than men. Women also lose bone faster than men because of hormonal changes that occur after menopause.

- **Ethnicity.** Caucasian and Asian women are more prone to osteoporosis.

- **Family history.** A strong family history of osteoporosis predisposes an individual to develop osteoporosis at an earlier age.

Maintaining bone health is important to prevent or slow down the process of bone loss.

Dietary calcium intake is extremely important. The recommended dietary allowance (RDA) of calcium for females aged 19 to 50 and males aged 51 to 70 is 1,000 milligrams (mg) per day. The recommendation increases to 1,200mg a day for women aged 51 and older and for men aged 71 and older.

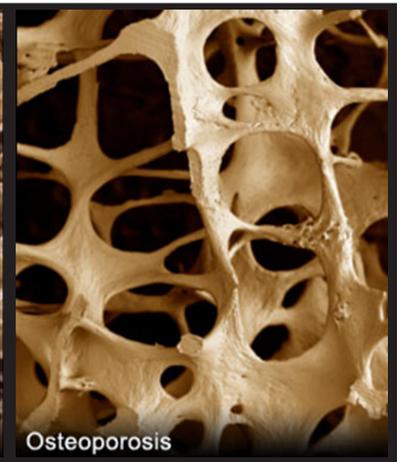
Good sources of calcium include dairy products, almonds, broccoli, kale, canned salmon with bones, sardines and soy products such as tofu. Calcium supplement may also be prescribed by a doctor if dietary calcium intake is less than the requirement.

Adequate vitamin D intake is important for calcium absorption. For adults aged 19 to 70, the RDA of vitamin D is 600 international units (IUs) a day. The recommendation increases to 800 IUs a day for adults aged 71 and older.

Good sources of vitamin D include oily fish such as salmon, trout, whitefish and tuna.



Normal



Osteoporosis

Differences between a normal bone and a bone with osteoporosis.

Additionally, mushrooms, eggs and fortified foods, such as milk and cereals, are good sources of vitamin D. Sunlight also contributes to the body's production of vitamin D. Vitamin D supplement may also be prescribed if indicated.

Physical activities, especially weight-bearing exercises, such as walking, jogging and climbing stairs, can help to build strong bones and slow the process of bone loss. Last but not least, avoidance of smoking and limiting alcohol intake will help to delay the occurrence of osteoporosis.

Despite not having many outward symptoms of having unhealthy bones, there are some signs of osteoporosis that we should look out for:

- Receding gums
- Chipped or brittle nails
- Weakened grip
- Fractured bones

It's important to seek medical attention for any type of bone pain, especially if the pain is severe, or persistent.

Since osteoporosis does not have any symptoms until a bone breaks, it is important to talk to your doctor

about your bone health. If your doctor feels that you are at risk for osteoporosis, he may order a bone density test. A bone density test measures the density of your bones and assesses whether you have osteoporosis. It can also tell you your risks of breaking a bone. Bone density tests are quick, safe and painless.

There are medicines to help prevent and treat osteoporosis. These include bisphosphonates, oestrogen agonists/antagonists, calcitonin, parathyroid hormone, oestrogen therapy and hormone therapy. Doctors may prescribe medicine if your bone density test shows that your bones are weak and that you have a higher risk of osteoporotic fracture in the future.

Strategies to optimise your bone health and strength:

- Consume diet rich in calcium
- Ensure proper vitamin D intake (a supplement may be required)
- Engage in 30 minutes of daily weight-bearing exercises (e.g., power walking, dancing or lifting weights)
- Avoid smoking
- Limit alcohol intake



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- Provides amino acids required for protein synthesis



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Wheat resistant dextrin

- Promote regular bowel movement especially for people with a tendency to constipation



BONE NUTRIENTS
Calcium (Ca), magnesium (Mg), vitamins D3 & K2

- Build strong & healthy bones*
- *Calcium aids in the development of strong bones¹
- Magnesium promotes calcium retention & absorption¹
- Vitamin D3 helps the body absorb calcium¹

References:
1. FSQD, MOH, Guide to Nutrition Labelling & Claims (as at Dec 2010).

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