

NUTRITIONAL ENRICHMENT



• PORK CALBON N



QBoost

Natural Ingredients. Smart Solutions.

sonac

THE BENEFITS OF QBOOST PORK CALBON N CALCIUM AND PHOSPHORUS SUPPLEMENT

QBoost Pork Calbon N is specially intended for use as a calcium enrichment for food and food supplements. Pork Calbon N, a natural ossein hydroxy-apatite, has excellent properties to prevent a deficiency of calcium in a diet. It contains all ingredients that are necessary for healthy bones. Pork Calbon N has a high calcium level (32%), a high phosphorus level (14%) and contains protein (10%).

WHY CALCIUM AND PHOSPHORUS

Calcium and phosphorus are essential to all life, animal and vegetable, single-celled and multi-celled organisms. Although the inorganic salts, commonly called minerals, comprise a small percentage of total body weight they are as important to the wellbeing as the proteins, carbohydrates and fats that provide energy. Children require calcium and phosphorus in their diet for normal growth, adults require it for maintenance and replacement. Pregnant and lactating women require larger quantities of calcium and phosphorus than other adults because a portion of their intake is utilised by the growing foetus or child. Calcium also plays an important role in the prevention of osteoporosis, in the coagulation of blood, and for the proper functioning of the nervous system.

HOW TO USE QBOOST PORK CALBON N

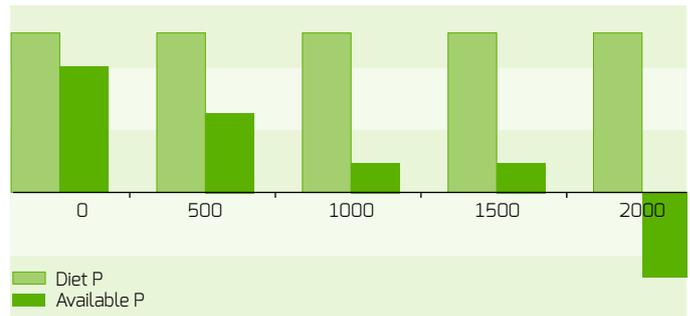
Pork Calbon N can be used as an ingredient for various food applications without disadvantageous effects on taste or structure. It is advised to add the Pork Calbon N mesh 200 to the basic food products. Pork Calbon N can be added to cereal products, like flour prepared mixes, baked goods, breakfast cereals and pasta's, and dairy products as for example yoghurt or ice cream. Furthermore, Pork Calbon N can be taken at meals as a calcium additive in various taylor-made shapes, such as tablets, hard gelatine capsules, chewable tablets or oral liquid (high suspension powder). Pork Calbon N mesh 50 for example is extremely suitable for producing tablets because of its direct compressibility. As an oral liquid it is accessible for people having difficulties swallowing tablets.

WHY DOES QBOOST PORK CALBON N SCORE SO WELL

Pork Calbon N is produced by a manufacturing process designed to ensure that the components retain their natural form and physiological properties. The active constituent is not a single chemical entity. It is a mixture of which the main component is a calcium hydroxy-apatite concentrate. This salt is present in microcrystalline form in combination with proteins. A positive fact of bone derived calcium supplements is that they contain phosphorus. Next to calcium, phosphorus is important for healthy bones. Studies indicate that ingestion of a combination of calcium and phosphorus results in better bone building than ingestion of calcium alone. Calcium on its own will bind phosphorus (from food) in the gut, and prevent that the phosphorus will be absorbed in the circulation where it comes available for bone building¹.

¹ Robbert P. Heaney, MD, FACN. Journal of the American College of Nutrition, vol. 21, no. 3, 239-244 (2002)

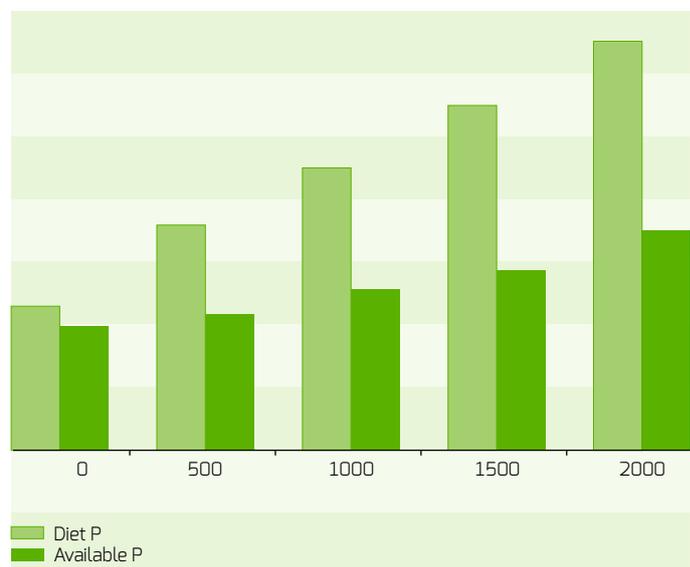
Figure 1: Effect of calcium intake on available phosphorus for calcium from calcium citrate or calcium carbonate



Calcium supplement dose (mg/day)

Source: Robbert P. Heaney, MD, FACN. Journal of the American College of Nutrition, vol. 21, no. 3, 239-244 (2002)

Figure 2: Effect of calcium intake on available phosphorus for calcium from calcium phosphorus



Calcium supplement dose (mg/day)

Source: Robbert P. Heaney, MD, FACN. Journal of the American College of Nutrition, vol. 21, no. 3, 239-244 (2002)

RESEARCH FINDINGS

Clinical studies show that whole bone calcium supplements have a better effect on bone density. A clinical study of the University of Hull proved that Pork Calbon N prevents the loss of Bone Mineral Density (BMD) in postmenopausal women. The University of Hull together with the Centre of Metabolic Bone Disease did a 6-months double blind placebo controlled study for Sonac Vuren. In this study it was proven that Pork Calbon N prevents the loss of Bone Mineral Density (BMD). With regard to its effect on certain bone markers Pork Calbon N demonstrated statistically significant superiority over placebo. This effect on bone markers is predictive for a positive effect on bone density. Pork Calbon N prevents the loss of Bone Mineral Density (BMD).

QBOOST PORK CALBON N IS SUPERIOR OVER CALBON AND PLACEBO

Bone markers

The Friedman X2 test for 3 related samples was used to test if there were statistically significant differences between randomisation 3 months and 6 months. The following bone markers were studied:

Serum

- Alkaline phosphatase (Bone specific isoenzyme)
- Osteocalcin
- Aminoterminal propeptide of type I procollagen

Urine

- Deoxypyridinoline free
- N-telopeptide

Bone density (% change from baseline)



QBOOST PORK CALBON N PREVENTS THE LOSS OF BONE MINERAL DENSITY (BMD)

Effects of treatment on BMD

In a 6-month study Pork Calbon N increased Spine Bone mineral density.

Effects on bone markers

Positive effects on bone markers are statistically significant within 6 months after starting the trial.

Adverse effects

Pork Calbon N is well tolerated and does not cause any gastrointestinal symptoms.

Study protocol

The equivalent of 500 mg of calcium was given on a daily bases. Pork Calbon N was given in a hard gelatine capsule, each capsule containing the equivalent of 125 mg calcium and 56 mg phosphorus.

Bone Mineral Density

Dual energy X-ray absorptiometry (DEXA) was used to assess bone density.

CLINICAL RESULTS QBOOST PORK CALBON N

Use of ossein-hydroxyapatite in postmenopausal osteopenic women.

Measurements

Bone assessments at baseline, and after 3 and 6 months:

- BMD
- Biochemical markers of bone turnover
- Patients on Pork Calbon N allowed to continue for 12 months (extension arm)

Conclusion

Results on bone density after one year of treatment show a trend towards superiority of Pork Calbon N over Calbon and placebo.

WHICH ADDITION DELIVERS OPTIMAL RESULT

The amount of Pork Calbon N depends on the requested amount of calcium to be added. The recommended daily intake of calcium is > 1000 mg per day according to the World Health Organisation. Pork Calbon N can be taken at meals as a calcium additive. The daily intake can be guaranteed by taking 3 tablets Pork Calbon N per day each with 400 mg calcium and 180 mg phosphorus.



BENEFITS OF QBOOST PORK CALBON N

- Clinical studies show that whole bone calcium supplements have a better effect on bone
- It is a natural calcium and phosphorus supplement
- Provides the minerals that bone needs, calcium and phosphorus
- Contains proteins, a high calcium and phosphorus level
- Increases bone density
- Excellent tolerability and safety profile

EFFECTS OF QBOOST PORK CALBON N ON THE CALCIUM LEVEL

It is recommendable to add Pork Calbon N powder mesh 200 to basic food products.

Products	Standard calcium/ 100 gram	Enriched calcium/ 100 gram	Added amount per kg
Breakfast			
Dutch-crisp toast	26 mg	37 mg	350 mg Pork Calbon N
Fruit juice, orange juice	14 mg	25 mg	350 mg Pork Calbon N
Lunch			
Bread, wholemeal	30 mg	41 mg	350 mg Pork Calbon N
Bread, white	22 mg	33 mg	350 mg Pork Calbon N
Fruit juice, grapefruit	11 mg	22 mg	350 mg Pork Calbon N
Dinner			
Pasta, wholemeal	40 mg	62 mg	700 mg Pork Calbon N
Pasta	15 mg	37 mg	700 mg Pork Calbon N
Desert			
Ice cream	100 mg	122 mg	700 mg Pork Calbon N
Yoghurt, low-fat	125 mg	147 mg	700 mg Pork Calbon N
Yoghurt, whole	120 mg	142 mg	700 mg Pork Calbon N
Yoghurt, skim	139 mg	161 mg	700 mg Pork Calbon N

PRODUCT INFORMATION ON QBOOST PORK CALBON N

	Pork Calbon N
Moisture (%)	1.5
Protein (%)	10
Calcium (%)	32
Phosphorus (%)	14

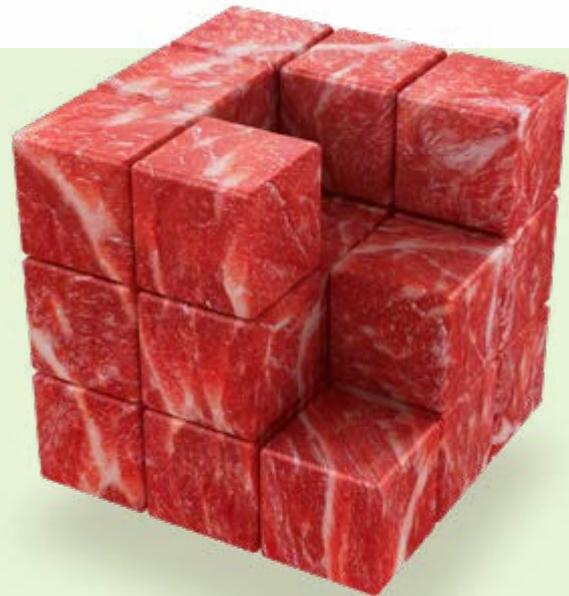
Pork Calbon N and its production is tested and inspected on different standards continuously, to ensure the highest levels of purity, stability and freshness. It meets the highest microbiological, physical and chemical demands, such as specified in European, British and US Pharmacopoeias. Calcium phosphates are listed as GRAS by the FDA.

YOUR QUEST FOR QUALITY RESOLVED

Our product portfolio is continuously expanding with a number of innovations. With products from several origins and different species, we offer a complete portfolio. Qualitative characteristics of our natural proteins fit seamless in the global trend of clean label products. They are rooted in a long history of usage of animal proteins for quality and yield improvement of processed meat products and provide multiple benefits for you.

Let's solve your meat puzzle.

Sonac is a leading manufacturer of reliable ingredients of animal origin. With an active R&D program, reliable processes and sustainable end products Sonac continuously adjusts to market needs. A good geographical spread of locations and a broad portfolio of fats, proteins, minerals and specialties make Sonac a trusted partner for many international producers in food, pet food, feed and fertilizers, worldwide. Sonac is part of Darling Ingredients.



For more information about this specialty product please contact us:

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