

強健骨骼，增加骨質密度，在三十歲前是尤其重要。隨著年齡增長，骨質會逐漸流失，骨質密度變得疏鬆，這個情況稱之為骨質疏鬆症。骨質疏鬆會令骨骼脆弱，增加骨折的風險。預防骨質疏鬆的最有效方法，就是從健康生活方式開始。

鈣質與維他命D

攝取足夠的鈣，是健康飲食的一個重要環節。鈣質可以強健骨骼和牙齒、參與肌肉和神經的正常運作，以及有助改善血壓。由於鈣質攝取的不足，要待年長後才會出現，所以從小便應該注意飲食，尤其是由青少年步入成年時期。研究亦指出，長者如能攝取足夠的鈣，可以減慢骨質流失及降低骨折的風險。

人體鈣質的攝取量會隨年齡轉變。以下為一九九七年美國醫學研究所建議之鈣質攝取量：

年齡	鈣 (毫克)	維他命 D (國際單位)
2 - 3 歲	500	800
4 - 8 歲	800	400
9 - 18 歲	1300	400
19 – 50 歲	1000	400
51 – 70 歲	1200	800
70+ 歲	1200	800

資料來源: Food and Nutrition Board. Institute of Medicine-National Academy of Sciences U. S. 1997

人體需要維他命D來幫助鈣質的吸收，強健骨骼。維他命D主要來自兩個來源，通過太陽的照射令皮膚吸收或從飲食中攝取。食物如植物牛油、雞蛋、三文魚、沙甸魚、鯖魚和魚油均含維他命D。

其他注意事項

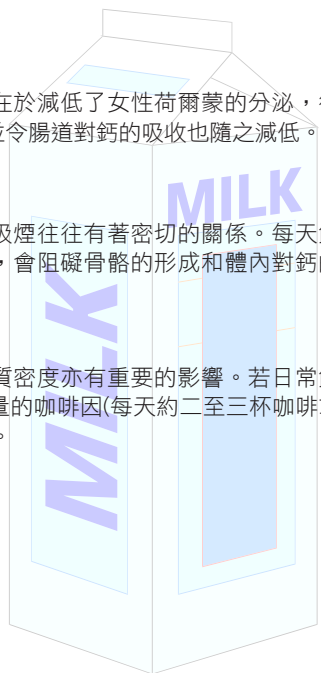
- 大豆內含有的植物化學物異黃酮，能發揮類似女性荷爾蒙和抗氧劑的作用，在骨骼細胞中可以預防鈣質流失。
- 蛋白質會增加鈣質在尿液的流失，尤其是過量的動物蛋白質。
- 若日常攝取鈣質不足，又同時作高鈉/高鹽飲食，一樣會令更多鈣質經由尿液流失，引致骨質疏鬆。
- 近年醫學研究指出，維他命K能調節骨骼中蛋白質骨鈣素與鈣質的結合，讓鈣質鎖於骨骼中。所以日常飲食應包括含維他命K之食物，例如深綠色葉類蔬菜。
- 蔬菜內含有纖維和植酸，過量攝取會減低對鈣的吸收。
- 避免節食。

運動

從食物中攝取足夠的鈣，固然重要；然而，運動也有助強健骨骼。多做運動的人士，其骨骼較少做運動人士更強健，密度更高。有效強健骨骼的運動包括「負重」類別如步行、緩步、跑步、跳舞、壁球和行樓梯。同時亦應進行鍛煉肌肉的運動，例如舉重。

生活方式的改變

- 戒煙
吸煙對骨骼的影響，在於減低了女性荷爾蒙的分泌，從而加快了鈣的流失，並令腸道對鈣的吸收也隨之減低。
- 避免過量酒精
酗酒，與飲食不良和吸煙往往有著密切的關係。每天飲用超過兩份酒精飲品，會阻礙骨骼的形成和體內對鈣的吸收。
- 過量咖啡因
過量的咖啡因，對骨質密度亦有重要的影響。若日常飲食中有足夠的鈣，適量的咖啡因(每天約二至三杯咖啡或可樂飲品)是可接受的。

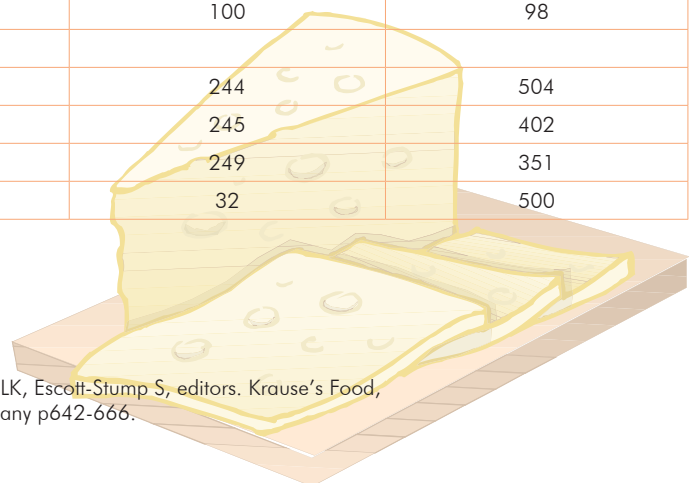


常見食物鈣量表

	份量	重量(克)	鈣量 (毫克)
奶製品			
全脂奶	1 杯	244	276
低脂奶	1 杯	244	285
脫脂奶	1 杯	244	299
乳酪	1 膠杯	175	159
芝士	1 片	28	143
雪糕	1 小杯	66	84
蔬菜水果			
白菜，熟		100	100
芥蘭，熟		100	93
菜心，熟		100	91
橙	1 中型	184	72
無花果乾		100	200
肉、魚、家禽、代替品			
雞蛋	1 大型	50	26
罐裝三文魚，連骨		100	221
罐裝沙甸魚，連骨		100	240
蝦米		100	555
毛豆		100	145
豆漿	1 杯	245	25
豆腐	½ 磚	100	164
罐裝茄汁焗豆		100	56
芝麻		30	300
核桃	25 粒	100	98
添加鈣質食物			
添加鈣質的奶	1 杯	244	504
添加鈣質的豆漿	1 杯	245	402
添加鈣質的橙汁	1 杯	249	351
添加鈣質的麥類 / 穀類飲品	1 包	32	500

資料來源：美國農業部國家營養參考資料庫，2007年第廿版
香港特別行政區政府食物安全中心營養查詢
包裝食品營養標籤

參考資料：
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Anderson JJB. 2004. Nutrition & Bone Health. In: Mahan LK, Escott-Stump S, editors. Krause's Food, Nutrition & Diet Therapy. 11th Edition, WB Saunders Company p642-666.



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Building strong bones, especially before the age of 30, is important. As we age, bone loss accelerates. Osteoporosis is a condition characterized by the loss of the normal density of bone, resulting in fragile bone. This disorder weakens the bone causing an increase in the risk of breaking bones (bone fracture). A healthy lifestyle is therefore critically important as the best defense for osteoporosis.

Calcium and Vitamin D

A healthy diet must include adequate calcium, one of the major building blocks of healthy bones and teeth. It also helps muscles and nerves to function properly and control blood pressure. While the adverse effects of calcium-poor diets tend to show up only in the later years, it is especially important to get adequate calcium in diets throughout adolescence into adulthood. Studies of older adults show that adequate calcium can slow bone loss and lower the risk of fracture.

The amount of calcium we need changes throughout a lifetime. The recommendations made in 1997 by the Institute of Medicine indicated the following requirements:

Age	Calcium (mg)	Vitamin D (IU)
2 - 3 years	500	800
4 - 8 years	800	400
9 - 18 years	1300	400
19 – 50 years	1000	400
51 – 70 years	1200	800
70+ years	1200	800

Source: Food and Nutrition Board. Institute of Medicine-National Academy of Sciences U. S. 1997

Your body needs vitamin D to help absorb calcium and build strong bones. Vitamin D comes from skin exposure to sunlight and diet. Foods such as margarine, eggs, salmon, sardines, mackerel and fish oil all contain some amounts of Vitamin D. It should not be taken in excess.

OTHER DIETARY SUGGESTIONS

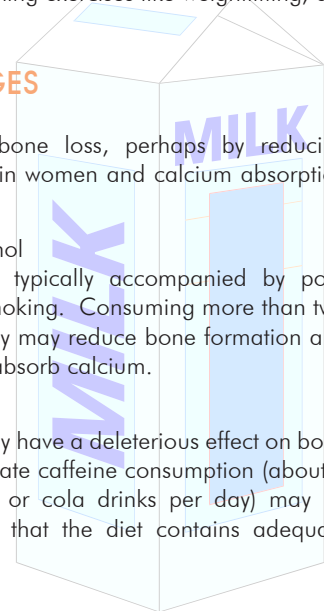
1. Isoflavones in soybeans, which function like estrogen and act as antioxidants in bone cells, can prevent calcium loss of the cells.
2. Protein increases the loss of calcium in urine, especially large intakes of animal protein.
3. High sodium intakes, particularly in association with a low calcium intake, can contribute to osteoporosis by increasing calcium excretion.
4. Recent studies showed Vitamin K might regulate the calcium-binding capacity of osteocalcin, a protein for binding calcium in the bone matrix. A diet containing foods with Vitamin K such as green leafy vegetables is therefore recommended.
5. Vegetables are good sources of fiber and phytic acid. However, excess intake can reduce calcium absorption.
6. Avoid dieting.

EXERCISES

In addition to calcium intake, exercise is also important to building strong and healthy bones. In general, people who lead an active lifestyle have stronger and denser bones than the sedentary. The best exercises for building strong bones are “weight-bearing” activities, such as walking, jogging, running, dancing, squash and climbing stairs. Other muscle -strengthening exercises like weightlifting, are also important.

LIFESTYLE CHANGES

1. Do not smoke
Smoking increases bone loss, perhaps by reducing estrogen production in women and calcium absorption in the intestines.
2. Avoid excessive alcohol
Excessive alcohol is typically accompanied by poor dietary intake and smoking. Consuming more than two alcoholic drinks a day may reduce bone formation and the body’s ability to absorb calcium.
3. Limit caffeine intake
Excessive caffeine may have a deleterious effect on bone mass density. Moderate caffeine consumption (about 2 to 3 cups of coffee or cola drinks per day) may be acceptable provided that the diet contains adequate calcium.



Calcium Content of Some Common Foods

	Portion	Weight (gm)	Calcium (mg)
Dairies			
Fresh milk	1 cup	244	276
Low fat milk	1 cup	244	285
Skim milk	1 cup	244	299
Yogurt	1 container	175	159
Cheese	1 slice	28	143
Ice-cream	1 small container	66	84
Vegetables & Fruits			
Chinese broccoli, cooked		100	100
Chinese cabbage, cooked		100	93
Chinese flowering cabbage		100	91
Orange	1 medium	184	72
Figs, fried		100	200
Meat, fish, Poultry & Alternates			
Egg	1 large	50	26
Canned salmon with bones		100	221
Canned sardines with bones		100	240
Shrimps, dried		100	555
Beans, green		100	145
Soya milk	1 cup	245	25
Tofu	½ block	100	164
Canned beans in tomato sauce		100	56
Sesame seeds		30	300
Walnuts	25 nos	100	98
Calcium-Fortified Products			
Fortified milk	1 cup	244	504
Fortified soy milk	1 cup	245	402
Fortified orange juice	1 cup	249	351
Fortified malt /cereal drink	1 pack	32	500

Sources: USDA National Nutrient Database for Standard Reference, Release 20(2007)
The Government of the Hong Kong Special Administration Region, Center for Food and Safety, Food Search Product labels

References: <http://www.capitalhealth.ca>.
<http://www.mayoclinic>
Anderson JJB. 2004. Nutrition & Bone Health. In: Mahan LK, Escott-Stump S, editors. Krause’s Food, Nutrition & Diet Therapy. 11th Edition, WB Saunders Company p642-666.

健康飲食強健骨骼

Healthy Eating for Bone Health

