What is Calcium?

Calcium is a bulk mineral (element) found in the earth’s crust. Plants and animals need calcium for growth and function. Calcium is the most abundant mineral in the body. It accounts for approximately 1.5 – 2% of the total body weight (approximately 980 grams). The majority of body calcium (99%) is found in bones and teeth with the other 1% playing a very important role in our body’s chemical reactions.

We consume calcium in our diet and it is made available to our body when our calcium-containing food is digested and absorbed through the gut. Calcium (like other bulk minerals such as potassium, phosphorus, magnesium, sodium and sulfur) is required for some of the body’s most vital functions.

Why is Calcium important and what does it do in the body?

Calcium like many other minerals and trace minerals is very important for the success of many body reactions. Its major role is to support the development of strong bones and teeth as well as good skin and nail health. Good bone formation requires a balance of 2.5 parts calcium to 1 part phosphorus and exercise is important to encourage calcium deposits in the bone.

Calcium also helps nerve signalling, muscle contraction and relaxation. It works in association with magnesium and is essential to blood clotting, the expansion and contraction of blood vessels and also helps regulate our heart rate. Calcium helps us to maintain what is known as the “acid/base” balance in our body so that we have a balanced pH level. It does this by reducing lactic acid (an acid commonly produced in the body when there is a lack of oxygen in the cells) in our blood system. It is also required by our immune system, and helps body cells control what comes in and out of them. Calcium also supports sleep.

What amount of Calcium do you need each day?

For calcium to be absorbed, it must be dissolved by stomach acids. Calcium also requires Vitamin D3 for absorption. We also need enough magnesium in our system to keep it soluble.

The DRI (Daily Recommended Intake) /RDA (Recommended Daily Allowance) of dietary Calcium are listed on the next page:

Please Note: By definition, the DRI/RDA recommendations apply only to 98% of healthy individuals and are not sufficient for those with higher nutrient requirements based upon their biochemical individuality, genetics, health status, medications, deficiencies, lifestyle, and toxic exposures.
**Recommended Daily Allowance**
800mg/Day

**Optimal Daily Allowance**
1,000mg/Day

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### Pediatric
- **Birth - 6 months:** 200 mg
- **7 months - 1 year:** 260 mg
- **1 - 3 years:** 700 mg
- **4 - 8 years:** 1,000 mg
- **9 - 18 years:** 1,300 mg

### Adult
- **19 - 50 years:** 1,000 mg
- **Women 51 years and older:** 1,200 mg
- **Men 51 - 70 years:** 1,000 mg
- **Men older than 70:** 1,200 mg
- **Pregnant and breastfeeding women under 19 years:** 1,300 mg
- **Pregnant and breastfeeding women 19 years and older:** 1,000 mg

*Talk to your pediatrician before giving a child any nutritional supplement, including calcium.*

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**For prevention of colon cancer, 1,800 mg per day may be required.**

Calcium supplements should be taken in small doses and with meals (no more than 500 mg at a time) in divided doses during the day with 6 - 8 cups of water to avoid constipation. Calcium works best with Vitamins A, C, K and D3 plus magnesium, phosphorus and iron. Do not take calcium if suffering from kidney stones or kidney failure, sarcoidosis, cancer or hyperparathyroidism.

Please consult your health care provider if you take the following Bisphosphate medications for osteoporosis (as calcium supplementation decreases bisphosphate absorption) including:
- Alendronate (Fosamax)
- Etidronate (Didronel)
- Ibandronate (Boniva)
- Risedronate (Actonel)
- Tiludronate (Skelid)
- Zoledronic acid (Reclast)

**Blood pressure medications**

**Beta-blockers:** Atenolol (Tenormin), Metoprolol (Lopressor, Toprol-XL), and Propranolol (Inderal, Inderal LA), among others.

**Calcium-channel blockers:** Amlodipine (Norvasc), Diltiazem (Cardizem), and Nifedipine (Procardia).

**Corticosteroids (prednisone)** -- If you take corticosteroids on a long-term basis, you may need to take calcium supplements.

**Digoxin** -- digoxin is a medication used to treat irregular heart rhythms. High levels of calcium may raise the risk of a toxic reaction to it and low levels of calcium prevent digoxin from working. If you take digoxin, your health care provider should monitor your calcium levels closely.

**Diuretics (water pills)** -- many types of diuretics interact with calcium:
- Thiazide diuretics can raise calcium levels in the blood. These drugs include chlorothiazide (Diuril), hydrochlorothiazide, glchlorothalidone (Hygroton), indapamide (Lozol), metolozone (Zaroxolyn), and polythiazide (Renese), among others.
- Loop diuretics can decrease calcium levels. These drugs include furosemide (Lasix) and bumetanide (Bumex).
- Amiloride (Midamor) is a type of diuretic called a potassium-sparing diuretic. It may reduce the amount of calcium your body gets rid of in urine and raise calcium levels in the blood, especially in people with kidney stones.

**Estrogens** -- Estrogens may contribute to an overall increase in calcium blood levels. Taking calcium supplements with estrogens improves bone density.

**Gentamicin** -- is an antibiotic. Taking calcium during treatment with gentamicin may increase its potential for toxic effects on the kidneys.

**Sotalol (Betapace)** -- Sotalol is used to treat an irregular heartbeat. Calcium may decrease how much sotalol is absorbed by the body.

**Thyroid hormone** -- Calcium can decrease the amount of thyroid hormone medication that your body absorbs.
What are possible Calcium deficiency conditions and symptoms?

- Anorexia
- Brittle nails
- Cold sores and mouth Ulcers
- Depression
- Eczema
- Excessive menstrual flow
- Fatigue
- Growing pains
- Heart Palpitations
- High blood pressure (hypertension)
- High Cholesterol
- Hyperactivity
- Hypoparathyroidism
- Impaired growth
- Insomnia
- Menstrual cramps
- Mood Swings and Irritability
- Muscle aches and cramps
- Nausea and Vomiting
- Osteoporosis
- Rickets
- Skin pigmentation loss
- Stress and Anxiety
- Teeth grinding
- Tooth decay

What are possible Calcium excess symptoms?

Calcium excess may lead to hypercalcemia (elevated blood calcium levels), constipation and increase the risk of kidney stones and urinary tract infection.

What steals Calcium from the body?

Antiseizure drugs - Barbiturates: Phenobarbital (Luminal Sodium), Pentobarbital (Nembutal sodium), Thiopental, Secobarbital (Seconal),

Methohexital, Phenytoin (Dilantin), Carbamazepine (Tegretol), Primidone (Mysoline).

Anti-inflammatory drugs - Corticosteroids: Prednisone (Meticorten), Dexamethasone (Decadron), Methylprednisolone (Medrol)

Tetracycline antibiotics - these chelate (attract, attach and remove) calcium.

Antacid drugs
These affect calcium absorption by reducing stomach acidity which is important for calcium absorption.

- Aluminum-containing antacids: Gaviscon, Maalox, Mylanta)
- Calcium-containing antacids:Mylanta, Rolaid, Tums
- Magnesium-containing antacids: Gaviscon, Maalox and Mylanta and Alka Seltzer
- H-2-Receptor drugs: Cimetidine (Tagamet), Famotidine (Pepcid), Nizatidine (Axid) and Ranitidine (Zantac)

Calcium can also combine with phytic acid from raw cereals and legumes and also oxalic acid from foods such as spinach, chocolate, Swiss chard, parsley, beet greens and rhubarb which make it insoluble and difficult to absorb and to utilize.

- Caffeine, alcohol, sodium and sugar increase the excretion of calcium.
- Excessive phosphorus intake especially from fizzy soda drinks can reduce calcium levels.

What tests can be used to assess Calcium levels?

- Hair or urine calcium levels
- Bone resorption markers
- Serum 25-hydroxyvitamin D
- Parathyroid hormone (PTH)
<table>
<thead>
<tr>
<th>Rank</th>
<th>Food</th>
<th>Calcium CONTENT/100g</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sardines</td>
<td>383mg/100g</td>
</tr>
<tr>
<td>2</td>
<td>Almonds</td>
<td>264mg/100g</td>
</tr>
<tr>
<td>3</td>
<td>Water cress</td>
<td>120mg/100g</td>
</tr>
<tr>
<td>4</td>
<td>Chinese cabbage</td>
<td>105mg/100g</td>
</tr>
<tr>
<td>5</td>
<td>Salmon</td>
<td>85.1mg/100g</td>
</tr>
<tr>
<td>6</td>
<td>Okra</td>
<td>77mg/100g</td>
</tr>
<tr>
<td>7</td>
<td>Anchovies</td>
<td>63.8mg/100g</td>
</tr>
<tr>
<td>8</td>
<td>Broccoli</td>
<td>47mg/100g</td>
</tr>
<tr>
<td>9</td>
<td>Shrimp</td>
<td>42.5mg/100g</td>
</tr>
<tr>
<td>10</td>
<td>Green Snap Beans</td>
<td>37mg/100g</td>
</tr>
</tbody>
</table>

**TOP 10 CALCIUM RICH FOODS ARE:**

What foods contain the highest amounts of Calcium?

What are the best Calcium products?

Calcium supplements often contain high lead levels. Avoid dolomite, oyster shell and bone meal products unless the product has been tested thoroughly by its manufacturer for lead toxicity. Studies show that chelated calcium (calcium bound by two amino acids) in the form of calcium citrate and calcium gluconate are better supplements. The best bio-available form and a natural source of calcium citrate is derived from coral.

**REFERENCES**

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Balch. A. Phyllis CNC Prescription for Nutritional Healing 2002

All the statements, including product labels, supporting literature and/or product manufacturers websites have not been evaluated by FDA. These products are not intended to diagnose, treat, cure or prevent any disease.
What are the very best Calcium products to buy?

**PRL Coral Legend**
Dietary Supplement  
Sango Marine Coral Formula  
Whole Body Mineral Support, Including the Bones, Joints, Teeth and an Ideal Alkaline pH. This coral-based formula provides legendary mineral...

**Klaire VitaSpectrum**
Powdered multiple vitamin/mineral supplement for children with Autism Spectrum Disorders. Natural berry-pomegranate flavor. This comprehensive multiple vitamin/mineral supplement contains 28 highly bioavailable...

**ProThera MultiThera 3**
Iron- and copper-free multiple formula. Both iron and copper have been eliminated from this version of MultiThera® to address the needs of patients who may have elevated tissue identical in all other respects to MultiThera® 1...

**Pure Caps Mens Pure Pack**
Regardless of your walk of life, all men need to ensure that they get enough of an array of important nutrients. However, who wants to spend their time picking out supplements for a daily...

**Pure Caps Womens Pure Pack**
Women’s Supplement to Support Bone and Heart Health. Now With Metafolin® L-5-MTHF. Sizes Available 30 packets. Each packet contains 6 different supplements, including...

**PRL pH Pro**
Dietary Supplement  
Coral-Based pH Formula  
Whole Body Support, Including Bones, Joints and an Ideal Alkaline pH  
pH-Pro™ is the perfect formula to support whole...