

all about Calcium.



What is Calcium?

Calcium is the most abundant mineral in our bodies, mainly stored in our bones and teeth to give them structure and hardness. It is needed to build and maintain strong bones.

Why is it important?

Calcium helps our muscles move and regulate our nerves to carry messages between our brains and rest of the body. It also helps with blood vessels and release of hormone.



Physical Processes

Calcium plays a key role in supporting fat storage and breakdown, though it doesn't provide calories itself. Vitamin D helps our bodies absorb calcium, as it works closely with other nutrients like phosphorus and magnesium to regulate bone health and efficient nutrient use to support our bodies.

("Calcium," 2023)

Prevalent Food Sources



Life Cycles



Pregnancy

RDI: 1,000-1,300 mg per day

During pregnancy, enough calcium is important as it helps to develop the baby's bones, teeth, heart, muscles and nerves. If intake is too low, the body will pull calcium from the mother's bones to meet the baby's needs.

Infancy

RDI: 200-260 mg per day

Calcium is important for building strong bones and teeth which are growing rapidly during this phase. Enough calcium and vitamin D helps prevent rickets, which is a condition that leads to soft or weak bones. Since they are forming almost 99% of their bones, enough calcium is super important.



Adulthood

RDI: 1,000-1,200 mg per day

Even in adulthood, calcium is important to maintain healthy bone density. It helps to prevent osteoporosis and fractures especially in postmenopausal women and older men. It continues to regulate nerves, muscles and heart rhythms throughout adulthood.

("Calcium", nd.)

Calcium Deficiency - Hypocalcemia

SYMPTOMS:

- Confusion or memory loss
- Depression
- Muscle spasms
- Easy fracturing of bones
- Hallucinations

AT RISK:

- Vitamin D deficient people
- Postmenopausal women
- Older adults (over 65+)

CAUSES:

- Hormonal Changes
- Genetic Factors
- Dietary intolerance
- Inadequate calcium intake during childhood

TREATMENT:

- Take calcium supplements
- Regular calcium injections
- Add more calcium to diet

Prevalence Globally & Locally

- Northern communities with limited sun exposure
- Individuals with darker skin tones

In South Asia – over 80% of Indian women had calcium intakes below the recommended levels, revealing that calcium deficiency is a major issue in countries where food fortification is limited.



(Andrews, 2022)

Calcium Excess - Hypercalcemia

SYMPTOMS:

- Osteoporosis
- Kidney stones + failure
- Confusion, dementia, coma
- Arrhythmia

AT RISK:

- Lung, breast, blood & bone cancer patients
- Women over 50 with overactive parathyroid glands

CAUSES:

- Hyperparathyroidism
- Cancer & disease
- Serious dehydration
- Genetic Factors

TREATMENT:

- Rehydration with IV fluids
- Surgery for parathyroid
- Cancer treatment
- Steroid pills (short term)

Prevalence Globally & Locally

- Up to 30% of individuals with advanced cancers experience hypercalcemia
- Women over 50 with primary hyperparathyroidism (1 in 1000 adults) and 80% of cases being women.

North America (+ Europe)



High-income regions like Europe, Canada and the U.S. have higher prevalence due to more widespread supplement use and more frequent medical testing where asymptomatic hypercalcemia would go undetected in low-income regions.

("Hypercalcemia - Symptoms and causes," 2023)

Food Security



Sheldon Creek Dairy
4300 Concession Road 5, Loretto, Ontario
SheldonCreekDairy.ca

Accessibility

Sustainability

- Minimal processing and low waste due to producing milk that is non-homogenized and pasteurized in small batches
- Family owned & small-scale
- Offers milk in reusable glass bottles and offers refunds

- On-farm store where local residents have direct access to fresh milk & dairy products
- Online ordering & delivery is available which allows families with unreliable transportation to access products
- Partnered with farmers markets

Availability

- On-site milk production and bottling which ensures a steady supply of fresh milk
- Processed in small-batches daily to maintain freshness
- Year-round operations meaning continuous production
- Farm raises its own cows and does not rely on complex processes for supply.



(Sheldon Creek Dairy, 2023)