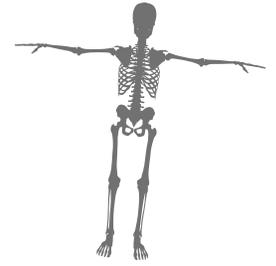
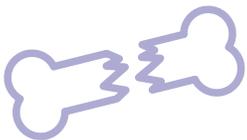


CALCIUM



WHAT IS CALCIUM?

- Calcium is the nutrient that is most important for achieving peak bone mass and for preventing and treating osteoporosis.
 - It is found in dairy products (milk, yogurt, and cheese), cereals, nuts and seeds, and some vegetables (broccoli and kale).
- 1-2% of an adult human's body weight is calcium. 99% of calcium is found in teeth and bones and provide rigidity and structure. The remaining 1% is found in blood and other tissues.
- Studies have showed that most humans do not meet recommended levels for calcium intake.
- The cumulative effect of Ca depletion on the skeletal system over many years is a contributor to increasing frequency of osteoporotic fractures with age.
- Osteoporosis is a global health problem.
 - About 10 million people in the US have osteoporosis and about 18 million have osteopenia.
- Osteoporosis is a skeletal disease characterized by low bone mass and deterioration of bone tissue which leads to an increase in bone fragility and increase the risk of fractures.
 - Osteopenia is borderline low bone mass, less severe than osteoporosis.
- Fractures can have a big impact on quality of life.
- Bone is living tissue that is constantly going through breakdown and formation to renew and repair. Maximal bone mass is achieved during early adulthood and the maximum velocity of bone mass accumulation happens during childhood/adolescences.
 - Having as much bone growth as possible during early life and preventing loss during adulthood is important to prevent osteoporosis.



WHY IS CALCIUM IMPORTANT?

- Calcium is a mineral which is involved in a lot of vital functions.
 - It has an important role in skeletal (bone) health and metabolism; and is required for normal growth and development of the skeleton.
- Chronic Ca deficiency is one of the main causes to reduced bone mass which leads to osteoporosis (holes in bones).
 - Adequate Ca is necessary to achieve optimal peak bone mass and lessen the rate of bone loss associated with aging.
- The regulation of calcium in the cells plays a key role in hypertension, insulin resistance and obesity.
- Studies have found an inverse relationship between calcium intake and hypertension.
 - Blood pressure is regulated by calcium in vascular smooth muscle cells (arteries). Blood pressure is improved when calcium reaches recommended levels. After that there aren't significant benefits.
- Adequate calcium intake has been associated with prevention of hypertension disorders of pregnancy, reduced blood pressure, reduced low density lipoproteins (LDL cholesterol is known as the bad cholesterol) and increased high density lipoproteins (HDL cholesterol are known as the good cholesterol), and prevention of osteoporosis and colorectal adenomas.
- At an early age, the effect of calcium supplementation in reducing blood pressure is important for the prevention of cardiovascular complications later in life.



WHO NEEDS CALCIUM?

- Individuals during all stages of life
- During childhood/puberty
- Postmenopausal women
- Individuals with osteopenia or osteoporosis
- Premenopausal women
- Pregnant women/ lactating women
- Older adults

HOW MUCH OF CALCIUM IS NEEDED?

AGE GROUP (YEARS) MG/D

0 TO 0.5	210
0.5 TO 1	270
1 TO 3	500
4 TO 8	800
9 TO 13	1300
14 TO 18	1300
19 TO 30	1000
31 TO 50	1000
51 TO 70	1200
>70	1200
PREGNANCY	
<19	1300
19 TO 50	1000
LACTATION	
<19	1300
19 TO 50	1000



RESOURCES

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4. Ma, J., Johns, R. A., & Stafford, R. S. (2007). Americans are not meeting current calcium recommendations. *The American journal of clinical nutrition*, 85(5), 1361-1366.
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