Calcium Essay, Research Paper

Calcium is the fifth most abundant substance in our body behind nitrogen, hydrogen, oxygen, and carbon. Calcium is needed in our bodies to keep us healthy and strong. Ninety-nine percent of our body s calcium is located in our bones. Calcium was named after the Latin word -calx which means lime . It gained this name because of its abundance in the chemical compound limestone. It is an Alkaline Earth Metal with an atomic number of 20 on the table of elements. Calcium was first discovered to be an independent metal in 1808 by Sir Humphrey Davy in England. Unfortunately this mineral does not occur naturally so we must absorb it through a daily intake of foods. This element serves many purposes in our bodies. The primary function of calcium is to strengthen bones, teeth, and cartilage. A specific intake of calcium is needed everyday to insure proper growth and strong bones, particularly during child-hood when we are growing(see chart 1). During pregnancy a mother must double her calcium intake to support two people. Lack of calcium during pregnancy can cause problems in the growth of bones. For example, if not enough calcium is taken during pregnancy, the jaw of a baby may not develop fully, causing cramped space for tooth growth which can result in tooth loss. Our bodies also need calcium for reasons other than growth. Calcium is stored in the bones, and occasionally our blood will take some of the bone s calcium for other parts of the body. Calcium is vital to the muscles, and works with other minerals to maintain normal muscle contraction, including our heartbeat. Without it muscles cramp and spasm. Calcium is also used for the movement of striated and smooth muscles. In addition ,calcium is essential for our nerves. When levels of calcium in the blood drop nerves become hypersensitive, and weaker transmissions and impulses take place. Studies also indicate that calcium may help to prevent diseases such as diabetes, tetanus, and cancer. Another use of calcium occurs in cell membranes. It helps to keep their shape and is used to transport nutrients across the membrane. Calcium also produces enzymes in the body, and is used as a buffer in the stomach to neutralize acids. The mineral promotes blood clotting, helps to prevent sleeplessness and anxiety, and aids in relieving allergy symptoms. These are only some of the many reasons that calcium is so important to us. Unfortunately, as said before, calcium does not occur naturally in our bodies and nature so we are responsible for maintaining a proper amount of calcium in our bodies. At different ages we are required to take different amounts of calcium to keep us healthy. The following chart (1) is a recommended daily intake of calcium for men and women of different agesChart 1:AGE MALE FEMALE1 year 500 mg 500 mg2-3 years 550 mg 550 mg4-6 years 600 mg 600 mg7-9 years 700 mg 700 mg10-12 years 900 mg 1100 mg13-15 years 1100 mg 1000 mg16-18 years 900 mg 700 mg19-49 years 800 mg 700 mg50+ years 800 mg 800 mgpregnant and nursing 500 mg + daily for age By eating the right foods everyday, we can have our daily recommended intake of calcium without much trouble. We are able to do this because so many foods contain high levels of calcium. Dairy products are the primary source of calcium, which include yogurts, milk, cheeses, and other milk products. However, calcium is not just limited to dairy products. It is also found in foods such as: nuts and almonds, salmon, sardines, tofu, oysters, mustard greens, oranges, many vegetables, shrimp, and bread. The following chart gives the calcium amounts for many of these foods. Chart 2 Food Amount CalciumPlain yogurt 1 cup 415 mgSardines 3 ounces 372 mgNonfat milk 1 cup 302 mgNonfat instant milk 1/3 cup 279 mgCheddar cheese 1 ounce 204 mg

Canned salmon with bones 3 ounces 167 mgTofu 1 cake 154 mgUncreamed cottage cheese 1 cup 146 mgOysters + cup 113 mgMustard greens, cooked + cup 97 mgOrange 1 medium 54 mgCooked broccoli + cup 50 mgCooked navy beans + cup 48 mgApricots, dried + cup 44 mgWhole wheat bread 1 slice 24 mg The amounts of calcium in breads are surprisingly high. In fact if you eat six slices of white bread per day you will have 30% more calcium than the recommended daily allowance. Calcium can also be found in dietary supplements, but the calcium in these supplements is often dependent on vitamins such as vitamin D to digest and get absorbed properly. Problems with calcium can arise by having too much or too little. If not enough calcium is absorbed two serious problems can arise. The first is a condition called osteoporosis. This is a condition in which the bones lose density and become weak because they do not have enough calcium. The bones become so weak that simple everyday actions such as hugs can cause bones to break. Osteoporosis affects one in four women and one in every eight men over fifty. The second is a disease called hypertension. Hypertension is simply high blood pressure resulting from a shortage of calcium which makes the arteries hard and rigid. Among the many problems that can come from too much calcium, one of the most serious are kidney stones. Kidney stones can occur for a variety of reasons; one reason too much calcium gets stored in the kidneys. Calcium is needed in the kidneys along with other minerals. However, if not enough water is consumed in the body, the calcium and other minerals begin to harden into kidney stones. The way to prevent kidney stones is not necessarily to lower your intake of calcium. Doctors say to prevent this condition simply drink at least two quarts of water per day. Without calcium we would not be able to survive. Our bodies would become fragile and weak, our blood pressure would become dangerously high, and we would have bad oral hygiene among other problems. Calcium is so easy to find and consume that one should have no problem meeting their daily calcium needs. Chart 1:The Dairy Nutrition Council of Alberta. Daily Calcium Needs http://www.dnca.ab.ca/calcium/cal\_for\_life.htmChart 2:The Essential Guide to Vitamins and Minerals; second edition. Elisabeth Somer, M.A., R.D. & Health Media of America. The Calcium Content of Selected Foods pg.93. Harper Perennial Publishing. 1.)The Essential Guide to Vitamins and Minerals; second edition. Elisabeth Somer, M.A., R.D. & Health Media of America. Calcium pgs.89-94. Harper Perennial Publishing. 2.)The Federation of Bakers Nutrition. Calcium http://www.bakersfederation.org.uk/nutr4.html 3.)Periodic Table: calcium: history: WebElements. Calcium (Ca) http://www2.shef.ac.uk/chem/web-elements-b5/nofr-hist/Ca.html 4.)Compton s Encyclopedia Online. Calciumhttp://comptons.aol.com/plweb-cgi/fastweb?getdoc+view1+arts003+860+6+wAAA+calcium 5.)Calcium Carbonate. Calcium Carbonate http://naturalnet.com/calcium.html 6.)Dairy Nutrition Council of Alberta. Calcium for Life http://www.dnca.ab.ca/calcium/cal\_for\_life.htm 7.)Kidney Stones. Preventing Kidney Stones http://members.aol.com/rogerbaxt/pages/kidney\_stone\_page1d.html#preventing

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