



Welcome

The Nutrition Clinic Team at Thoughtful House is ringing in the New Year with a monthly publication that will be available at the clinic and online. The goal of the Thoughtful House Health and Nutrition Newsletter is to provide readers with information that relates to pediatric nutrition in general and to the nutritional needs of children with developmental disorders in particular. To this end, we aim to provide original articles about diet and nutrition, current research, treatment and interventions, meeting announcements and educational programs along with recipes, interviews, book reviews and whatever else might be relevant to our goal. We hope to inspire readers into action and join us in “Fighting for recovery of children with developmental disorders....” – from the Thoughtful House Center for Children mission statement.

Mind on Magnesium

Adults and children of industrialized countries are falling short of magnesium (Mg^{2+}) in their diets. A recent survey reveals that only 32% of Americans are meeting their daily requirements. Another study shows that despite eating more calories, obese children are also not getting enough Mg^{2+} in their diet when compared to their leaner peers. Furthermore, children with chronic inflammatory bowel disease (IBD) are at greater risk for Mg^{2+} deficiencies due to poor absorption or chronic diarrhea.

While magnesium’s biochemical role is well established, researchers are still discovering its function in the brain. On the one hand, scientists are using animal models to show that learning and memory can be enhanced by elevating brain Mg^{2+} . On the other hand, investigations into pediatric ADHD and pervasive developmental disorders reveal a common pattern of low blood and plasma levels of Mg^{2+} in affected children. It is difficult to pinpoint how a Mg^{2+} deficiency directly influences cognition and memory since so many other metabolic processes are affected as well. Consider how difficult it might be for a child to learn a new concept or skill if they were experiencing symptoms of Mg^{2+} deficiency such as irritability, agitation, excitation or anxiety.

When one looks at a list of foods richest in Mg^{2+} it is no wonder that a many children don’t get enough of this crucial mineral. At the top of the list are leafy green vegetables. They are rich in chlorophyll, a green pigment that contains magnesium. Other rich sources include unrefined grains such as brown rice, buckwheat and quinoa (KEEN-wha). Pumpkin, sunflower and sesame seeds, and almonds and hazelnuts are mineral rich as well.

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Research Update: Diet plays a role in atopic dermatitis (eczema) in young children.

A study recently published in the European Journal of Clinical Nutrition showed that a diet rich in antioxidants was associated with a decreased risk of atopic dermatitis (AD) in young children.

The authors of the study compared the diet of 180 children with AD to 242 children without AD. They also compared the blood plasma levels of certain nutrients such as vitamins A, C and E. All the children had an average age of 5 years at the time of the study. The results revealed that children who ate foods rich in vitamins A and E, folic acid and iron were less likely to be diagnosed with eczema. Interestingly, plasma levels of vitamin E and beta-carotene were not strongly associated with risk of diagnosis. This suggests that researchers might need to look at other components of antioxidant –rich food, such as phytonutrients.

Journal Reference:

Oh SY, Chung J, Kim MK, Kwon SO, Cho BH. **Antioxidant nutrient intakes and corresponding biomarkers associated with the risk of atopic dermatitis in young children.** Eur J Clin Nutr 2010. Jan 27. [Epub ahead of print]

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When you add mineral rich foods to your child's menu be sure to prepare them in a way that minimizes nutrient loss. In general, it is best to cook food thoroughly with the least amount of heat exposure. Minerals are less susceptible to heat but can be lost in the cooking water as in the case with boiling beans or vegetables. For this reason, soups and broths, in which the cooking water is consumed, are particularly rich in minerals. When possible, it is best to steam vegetables including starchy ones like potatoes, beets and turnips.

Keep in mind that certain nutrients interact with magnesium. A high intake of zinc which is usually achieved with excess supplementation impairs absorption. To enhance absorption ensure that your child consumes adequate protein and vitamin D appropriate for their age. Interestingly, a small study found that prebiotics like fructo-oligosaccharides (FOS) are associated with an increase in magnesium absorption in teenage girls.

Supplements are available as magnesium citrate, magnesium

gluconate, magnesium chelates and magnesium oxide. All these forms are well absorbed on their own with the exception of magnesium oxide which should be taken with food. The most common side effect of taking too much in one dose is diarrhea; this effect usually resolves on its own when the dosage is cut back. However, when used in the appropriate amounts this supplement may ease constipation in some children.

Don't forget that skin absorbs nutrients too. Children can bathe in Epsom Salt (magnesium sulfate) to improve their Mg²⁺ status. Adding two cups of Epsom Salt to a bath two to three times per week might be enough for most children.

Though severe deficiency and toxicity are rare, it is best to consult a pediatrician if there are any concerns regarding the electrolyte levels of your child.

Mg²⁺

Upcoming Events

March

Mar. 20

Sensory Friendly Films @ AMC Theaters presents "Diary of a Wimpy Kid" at 10:00 AM local time. For local theater listings: <http://www.autism-society.org>

April

Apr. 8 – 11

Defeat Autism Now! Spring 2010 Conference, Baltimore, Maryland

Apr. 11

Autism Society's 3rd Autism Awareness Bike Ride in Georgetown, TX. Opportunities for cyclists, volunteers and sponsors at all levels: <http://www.autism-society.org>

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The information contained in this Newsletter was prepared from medical and scientific sources which are believed to be accurate and reliable. The information herein should not be used to treat or prevent any medical condition unless it is with the full knowledge, compliance and agreement of your personal physician or licensed healthcare professional.

Mag-nificent Chocolate Smoothie

This recipe makes use of magnesium rich foods such as cocoa powder, banana and hemp milk. The shake provides a whopping 230 mg of magnesium and rich in vitamin C, folate, potassium, fiber and essential fatty acids. For a different texture, increase the avocado in the recipe to make a pudding-like consistency. Add in a little raw spinach too, your child won't even notice the difference.

Makes 1 cup.

5 strawberries
1 medium sized banana
¼ Cup of avocado
2 Tbsp cocoa powder
4 – 6 oz of hemp milk

Agave syrup, maple syrup or other natural sweeteners to taste.

1. Make sure to clean the strawberries even if they are certified organic.
2. After peeling the banana and avocado add all ingredients into a blender.
3. Blend until smooth and serve right away.
4. For variations: Chop banana into chunks and freeze before blending; most frozen berries work well, even nutrient rich cranberries.