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Center for Health and Nutrition Research Highlight:
Omega-3 Fatty Acids and Immunoglobulin A Nephropathy

Immunoglobulin A nephropathy (IgAN) is the most common chronic inflammatory disease of the glomerulus of the kidney. IgAN progresses to end stage renal disease in over 30 percent of patients, requiring hemodialysis and kidney transplant. The pathogenesis of the disease is incompletely understood, and there are no proven treatments.

Signaling lipids, or eicosanoids, are derived from essential fatty acids (EFA). EFA, which include omega-3 and omega-6 fatty acids, are essential because they cannot be synthesized in the body, and must therefore be obtained from the diet. Fish oil, which is an excellent source of omega-3 fatty acids (ω 3FA), as well as isolated ω 3FA, have proven effects on modulating renal function. Animal studies show that fish oil and ω 3FA improve renal function and reverse IgAN, but the success of these fatty acids in human trials has been inconsistent, and the mechanisms of action are not understood. There is preliminary evidence that IgAN patients may have EFA deficiencies.

It is hypothesized that there is a detectable disturbance in the ω 3FA status of IgAN patients, and that the presence of this metabolic disturbance plays a causative role in disease

Primary Investigator: Bruce D. Hammock, PhD, Department of Entomology, University of California, Davis.

development. Furthermore, it is hypothesized that the disturbed ω 3FA and eicosanoid status in these IgAN patients is involved in mediating the effectiveness of treatment with fish oil/ ω 3FA.

The specific aims of this project are to determine the ω 3FA and eicosanoid status of IgAN patients compared with controls, before and after supplementation with fish oil. This project will reveal specific lipid metabolic disturbances in IgAN, and determine non-invasive metabolic biomarkers that will be used to assess metabolic status, detect responsiveness to fish oil, and monitor treatment progress in IgAN. By determining the quantitative changes in ω 3FA and eicosanoids that are associated with IgAN and fish oil treatment, the data from this project will also reveal specific metabolic pathways that contribute to the development, progression, and prevention of IgAN. These data will establish the necessary groundwork for a large trial investigating the metabolic assessment and diagnosis of IgAN, and mechanisms of action leading to disease progression and reversal.



Fish and fish oil are an excellent source of omega-3 fatty acids.

Center for Health and Nutrition Research Highlight:
Omega-3 Fatty Acids and Asthma

This study is designed to examine the effects of intake of enriched omega-3 fatty acid supplements in patients with moderate to severe asthma. Some asthmatics produce a large amount of inflammatory leukotriene proteins—proteins that contribute to wheezing and inflammation in the airway. Inhibiting the detrimental effects

of leukotrienes is a key goal of controller therapy in severe asthmatics.

Some asthmatic patients appear to have specific mutations of the arachidonate 5-lipoxygenase (ALOX5) gene, one gene that regulates the production of the inflammatory leukotrienes.

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Asthma (Continued from page 2)

Omega-3 fatty acids can interfere with the arachidonic acid pathway and decrease the production of leukotrienes, and this may benefit moderate and severe asthma patients. The hypothesis is that omega-3 fatty acid supplements, added on to a patient's asthma medication regimen, can decrease the number of minor asthma exacerbations compared to patients who do not receive the supplement. Furthermore, asthma

patients with specific ALOX5 gene mutations will likely benefit most. Thirty asthma subjects will take part in this trial, undergo genotyping of the ALOX5 gene, and be treated with omega-3 fatty acids and placebo over a nine month period. It is expected that this strategy will allow discovery of which moderate and severe asthma patients will benefit most from supplements of omega-3 fatty acids.

Primary Investigator: Nicolas J. Kenyon, MD, Pulmonary and Critical Care, University of California, Davis Medical Center.

Zinc May Reduce Pneumonia Risk in Nursing Home Elderly

When elderly nursing home residents contract pneumonia, it is a blow to their already frail constitutions. A new study suggests that maintaining normal serum zinc concentration in the blood may help reduce the risk of developing pneumonia among them (1).

Based on the data, it seems that daily zinc intake can help nursing home residents who are susceptible to pneumonia, especially those with low serum zinc concentrations in their blood. The study participants with normal serum zinc concentrations in their blood had a reduced risk of developing pneumonia of about 50 percent. In addition, deaths from all causes were 39 percent lower in this group. Whether the low zinc was the cause or the effect of the links to pneumonia could not be determined, however. The researchers analyzed blood samples from a previous study that investigated the role of vitamin E in preventing respiratory infections in nursing home residents 65

years and older. The study enrolled 617 men and women from 33 nursing homes in the Boston area. All of the participants received daily supplements containing 50 percent of the recommended dietary allowance of several vitamins and minerals, including zinc, for 1 year. Foods that provide zinc include oysters, red meat, poultry, whole grains, beans, and dairy products. In the zinc study, the authors compared blood samples collected at the beginning and at the conclusion of the 1-year study. The participants whose serum zinc concentrations remained low throughout that 12-month period had more difficulty battling pneumonia. Residents who maintained normal serum zinc concentration in the blood throughout the 12-month study period were healthier even if they did develop pneumonia; they were more likely to spend fewer days on antibiotics and recover more quickly.

Reference:

1. Meydani SM, Barnett JB, Dallal GE, et al. Serum zinc and pneumonia in nursing home elderly. *Am J Clin Nutr*; Oct 2007; 86(4): 1167-1173.

Source: *Nutrition Today*; Jan/Feb 2008; 43(1): 5

“Residents who maintained normal serum zinc concentration in the blood ... were healthier even if they did develop pneumonia; there were more likely to ... recover more quickly.”

Little Reason to Encourage Zinc for the Common Cold



The review suggests the beneficial effect of zinc for the common cold is likely small at best.

Zinc for treatment of the common cold was first evaluated in 1984, and results of studies have been mixed ever since. Now, researchers have conducted a literature review to assess these studies' methodology and data (1).

Of 105 studies, 14 were randomized, placebo-controlled trials that evaluated the effect of zinc lozenges, nasal sprays, or nasal gels on naturally acquired colds. Only four studies met 11 predetermined criteria for valid experimental design; one found a positive effect of zinc nasal gel on cold symptoms and duration, but the other

three found no benefit from zinc lozenges and nasal spray.

Zinc use has increased in recent years, and because it is available over-the-counter and considered by some to be a "natural" remedy, zinc often is used by patients without a physician's involvement. This rigorous structured review suggests that the beneficial effect of zinc for the common cold is small at best. Intranasal zinc preparations have been associated with partial or complete loss of sense of smell. Even a small risk might not be reasonable when treating a benign, self-limiting condition.

Reference:

1. Caruso TJ, Prober CG, Gwaltney JM Jr. Treatment of naturally acquired common colds with zinc: A structured review. *Clin Infect Dis*; September 2007; 45:569-74.

Source: Peggy Sue Weintrub, MD. *Journal Watch*; October 2007; 27 (19):154.

Dietary Supplements Don't Prevent Cognitive Decline, CVD, or Infections

Overall, no mortality benefit was seen in the trials, and significant increase in mortality was seen with vitamins A and E.

In 2006, sales of nutritional supplements exceeded \$4.5 billion in the U.S. alone. This year, in several studies, researchers assessed whether supplements — especially with vitamins that are touted as antioxidants — are beneficial.

In one randomized trial, researchers assessed whether long-term vitamin E supplementation slowed cognitive decline among older women (age, 65 at study entry). At 10 years, global cognitive function did not differ in the vitamin E and placebo groups. In secondary analyses, statistically significant reductions in cognitive decline were seen in several subgroups of vitamin E recipients (i.e., women with low baseline vitamin E intake, women who exercised less than once

weekly, and women without diabetes), but these reductions were small and of questionable clinical importance (1).

Another randomized supplement study involved women with histories of cardiovascular disease or three or more risk factors for cardiovascular disease (CVD). After a mean of 9 years, no reduction was observed in a combined cardiovascular endpoint with vitamin C, vitamin E, or β -carotene supplementation, when taken alone or in combination. In the subgroup of women with histories of CVD, vitamin E was associated with a marginally significant reduction in the endpoint (1,2).

In a study from Toronto, nursing home residents were randomized to receive either a multivitamin and mineral supplement or placebo.

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Supplements (Continued from page 4)

During 18 months of follow-up, the multivitamin and the placebo groups had similar numbers of infections per patient, infection-free patients, visits to the emergency department, and hospitalizations (3).

Finally, in a meta-analysis of 68 randomized clinical trials and more than 230,000 patients, researchers assessed the effect of β -carotene, vitamin A, vitamin C, vitamin E, or selenium supplementation, in combination or individually, relative to placebo. Overall, no mortality benefit was seen. When only 47 trials with the highest methodologic quality were examined, a

significant increase in mortality risk was noted with supplemental β -carotene, vitamin A, and vitamin E (relative risks, 1.05, 1.16, and 1.04, respectively) (4). In total, these studies failed to show evidence of health benefit associated with vitamin supplementation across a broad set of clinical endpoints, and potential harm cannot be excluded. Patients should be told that little evidence supports the use of supplements other than for several specific indications (e.g., folic acid for pregnancy). The best advice is to return to mother's directive — eat your fruits and vegetables.

References:

1. Kang JH, Cook N, Manson J, et al. A randomized trial of vitamin E supplementation and cognitive function in women. *Arch Intern Med*; Dec. 11-25, 2006; 166(22): 2462-8.
2. Espeland MA and Henderson VW. Preventing cognitive decline in usual aging. *Arch Intern Med*; Dec. 11-25, 2006; 166(22): 2433-4.
3. Liu BA, McGreer A, McArthur MA, et al. Effect of multivitamin and mineral supplementation on episodes of infection in nursing home residents: A randomized, placebo-controlled study. *J Am Geriatr Soc*; Jan. 2007; 55(8): 35-42
4. Bjelakovic G, Nikolova D, Gluud LL, et al. Mortality in randomized trials of antioxidant supplements for primary and secondary prevention: Systematic review and meta-analysis. *JAMA*; Feb 28, 2007; 297(8): 842-57.

Source: Jamaluddin Moloo, MD, MPH. *Journal Watch*; Jan. 1, 2008; 28(1): 7-8.

Produce in Rainbow Colors Provide a Wide Array of Nutrition and Flavor

The appeal of buying produce from small-scale growers can include many criteria, among these are the aesthetic appeal, nutritional value and superior taste of brightly colored vegetables can provide. What's more, colors can provide clues as to a vegetable or fruit's health benefits, and which vitamins, antioxidants or phytochemicals the plant product contains.

Three of the main helpful substances in plant pigments are

chlorophylls, carotenoids, and anthocyanins. Chlorophylls, found in green vegetables, have been found to decrease DNA damage and lower risk of some cancers. Carotenoids, found mostly in yellow, orange, and red produce, are antioxidants and include the well-known lycopene and beta-carotene, as well as the abundant lutein. Anthocyanin is a flavonoid pigment often found in purple, blue, and some red fruits, which has garnered recent health interest as a dietary antioxidant.

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Little evidence supports the use of supplements, except for in specific indications (e.g. folic acid during pregnancy).

“Colors can provide clues as to a vegetable or fruit’s health benefits.”

Produce (Continued from page 5)

While colors can play a role in the attractiveness of fruit or vegetables, flavor—a perception that is mainly determined by taste and smell—still plays a determinant role in consumer

selection. Recent work with a rainbow's array of colorful carrots and peppers has shown that consumers are open to new alternatives and choices in their produce.

Adapted from: *Small Farm News*; 2008; 1:5.

The Oatmeal-Cholesterol Connection: 10 Years Later

In 1997, the Food and Drug Administration (FDA) approved the first food-specific health claim for foods containing whole-grain sources of oat fiber and reduced risk of heart disease (2). In the intervening time, has more recent research found this to be correct? A recent review examined this question, and found that the evidence linking oats to better heart health has only continued to accumulate (article).

Over the last fifteen years, studies have shown without exception that oat fiber lowers low-density lipoprotein (LDL) cholesterol. For every 1 percent reduction in LDL cholesterol, risk of coronary heart disease may be lowered between 1 and 3 percent. With mean reductions of LDL around five percent in the studies reviewed, risk of heart disease could be lowered between 5 and 15 percent.

Additionally, it has been demonstrated that these reductions in LDL cholesterol occur without a reduction in high-density lipoprotein (HDL) cholesterol, which is often known as “good” cholesterol. While the lowering of LDL on its own is

beneficial, oat fiber also is associated with a decrease in small, dense LDL particles, which are more likely to become oxidized. As oxidized LDL is an important component in the development of atherosclerosis, simply measuring LDL concentrations may underestimate how effective oatmeal is in reducing risk for heart disease.

Oats are a whole grain, consumption of which is associated with a reduced risk for cardiovascular disease, diabetes, and obesity. Whole grains are a major part of the Dietary Approached to Stop Hypertension (DASH) diet, which is widely recommended to reduce blood pressure, and improve insulin sensitivity and blood lipid profiles. The Dietary Guidelines for Americans Scientific Advisory Committee has also concluded that three or more servings of whole grains a day can reduce the risk of type 2 diabetes and help with weight maintenance.

Given the amount of positive evidence, the authors concluded that consumption of oats and oat-based products should be encouraged.

References:

1. US Department of Health and Human Services, Food and Drug Administration. Health claims: oats and coronary heart disease—final rule. *Fed Regist*; 1997; 62: 3583-3601.
2. Andon MB and Anderson JW. The Oatmeal-Cholesterol Connection: 10 Years Later. *Am J Lifestyle Med*; 2(1): 51-57.

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In addition to lowering LDL cholesterol, oats are a whole grain, consumption of which is associated with reduced risk of heart disease, diabetes, and obesity.

Increasing BMI is Associated with Increased Cancer Risk and Mortality in Women

A growing body of evidence indicates that obesity (body-mass index, 30 kg/m²) is associated with all-cause mortality, disability, and specific diseases such as coronary artery disease, diabetes, and osteoarthritis. Less is known, however, about the relation between obesity and cancer.

UK investigators examined the relation between BMI and cancer incidence and mortality in more than 1.2 million women (age range, 50–64). During about 5 years of follow-up for cancer incidence and 7 years for cancer mortality, increasing BMI was associated with increased risk for 10 of 17 specific types of cancers (endometrial, kidney, pancreatic, ovarian, postmenopausal breast, and premenopausal colon cancers, and esophageal adenocarcinoma, leukemia, multiple myeloma, and non-Hodgkin lymphoma), in analyses adjusted for

potential confounders. The relation between BMI and mortality from all cancers and from specific cancers was similar to that for incidence.

In women aged 50 to 64, increasing BMI was associated with increased risk for and mortality from all cancers combined and from many specific cancers.

These results are inconsistent with a recent study that included men and younger participants (age, 25) and reported no relation between overweight (BMI, 25–30) or obesity and mortality from all cancers combined (2). However, in that study, obesity was associated with increased mortality from cancers considered to be "obesity-related" (i.e., colon, breast, esophageal, uterine, ovarian, kidney, and pancreatic cancers). Given the ever-increasing prevalence of obesity, the results have obvious public health implications.

UK investigators examined the relation between BMI and cancer, and found increased risk for, and mortality from 10 of 17 specific types of cancer.

References:

1. Reeves GK, Pirie K, Beral V, et al. Cancer incidence and mortality in relation to body mass index in the Million Women Study: Cohort study. *BMJ*; Dec. 1, 2007; 335(12): 1134.
2. Flegal KM, Graubard BI, Williamson DF, and Gail M. Cause-specific excess deaths associated with underweight, overweight, and obesity. *JAMA*; Nov. 7, 2007; 298(17): 2028.

Source: Paul S. Mueller, MD, MPH, FAC. *Journal Watch*; Jan. 1, 2008; 28(1): 1-2.

Weight Control and Bone Density During Menopausal Transition

Women typically gain weight during the menopausal transition, but do efforts to curb this weight gain affect bone-mineral density (BMD)? That question was addressed in a randomized trial involving premenopausal white women (age range at study entry, 44–50, n=373) (1).

Participants were assigned to a 5-year behavior modification program

(low-fat diet, exercise, and weight-loss intervention) or to a control group. All participants were given a modest weight-loss goal based on baseline body-mass index; mean BMI was 25. In an assessment at 54 months, intervention participants had lost an average of 0.4 kg whereas controls had gained an average of 2.6 kg.

Menopause (Continued from page 7)

Rational recommendations for a healthy lifestyle are unlikely to be detrimental as long as weight loss is not extreme.

During the study, total hip and femoral neck BMD (but not spine or total body BMD) decreased significantly in the intervention group compared with the control group after adjusting for age and baseline BMD. However, at a postintervention 12-month evaluation, the difference in BMD diminished as the difference in weight decreased. Hormone therapy also diminished BMD loss in postmenopausal women, but those who lost the most weight had greater reductions in BMD.

This intriguing study emphasizes how complicated health

recommendations are: Maintaining or losing body weight during the menopausal transition may lead to reduced BMD. So what is the clinician to do? It seems unlikely that rational recommendations for a healthy lifestyle would be detrimental overall, as long as weight loss is not extreme among women who are of normal weight or only mildly overweight at the start of the transition. Moreover, it's unclear whether the trends noted in this study would progress and translate into increased fracture rates later in life.

Reference:

1. Park HA, Lee JS, Kuller LH, and Cauley JA. Effects of weight control during the menopausal transition on bone mineral density. *J Clin Endocrinol Metab*; Oct. 2007; 92(10): 3809.

Source: Robert W. Rebar, MD. *Journal Watch*; Dec. 1, 2007; 27(23): 184

New CDC Study Finds No Increase in Obesity Among Adults; But Levels Still High

After 25 years of increases, obesity prevalence has not measurably increased in the past few years but levels are still high -- at 34 percent of U.S. adults aged 20 and over, according to a new study released today by the Centers for Disease Control and Prevention (CDC) (1).

The report, "Obesity Among Adults in the United States -- No Change Since 2003-2004," is the latest analysis based on the National Health and Nutrition Examination Surveys, conducted by CDC's National Center for Health Statistics.

Obesity rates have increased over the past 25 years. Among men, there was an increase in obesity prevalence between 1999 and 2006. However, there was no significant change in obesity prevalence between

2003-2004 and 2005-2006 for either men or women.

"Since 1999, there appears to have been a leveling off in obesity among women, but the trend is less clear among men. We do know however that the gap between men and women has narrowed in recent years, with men catching up to the higher rates among women," said Cynthia Ogden, a CDC researcher and lead author of the study.

Obesity is defined as a body mass index (BMI) of 30 or greater. BMI is calculated from a person's weight and height and provides a reasonable indicator of body fatness and weight categories that may lead to health problems. Obesity is a major risk factor for cardiovascular disease, certain types of cancer, and type 2 diabetes.



Although the obesity rate did not rise between 2003 and 2004, or 2005 and 2006, levels are still high.

CDC (Continued from page 8)

The study found:

- More than one-third of U.S. adults -- over 72 million people -- were obese in 2005-2006. This includes 33.3 percent of men and 35.3 percent of women. The figures show no statistically significant change from 2003-2004, when 31.1 percent of men were obese and 33.2 percent of women were obese.
- Adults aged 40-59 had the highest obesity prevalence compared with other age groups. Approximately 40 percent of men in this age group were obese, compared with 28 percent of men aged 20-39, and 32 percent of men aged 60 and older. Among women, 41 percent of those aged 40-59 were obese compared with 30.5 percent of women aged 20-39. Women aged 65 and older had obesity prevalence rates comparable with women in the 20 to 39 age group.
- There were large race-ethnic

disparities in obesity prevalence among women. Approximately 53 percent of non-Hispanic black women and 51 percent of Mexican-American women aged 40-59 were obese compared with about 39 percent of non-Hispanic white women of the same age. Among women 60 and older, 61 percent of non-Hispanic black women were obese compared with 37 percent of Mexican-American women and 32 percent of non-Hispanic white women.

"In view of these alarmingly high rates of obesity in all population groups, CDC has made the prevention of obesity one of its top public health priorities," said Janet Collins, director of CDC's National Center for Chronic Disease Prevention and Health Promotion. "We are actively working in partnership with state and local public health agencies, the Nation's schools, community organizations, businesses, medical systems, and faith communities to promote and support healthy eating, physical activity, and healthy weight."

Reference:

1. Obesity Among Adults in the United States--No Change Since 2003-2004. Data Brief Number 1, November 2007.

[Online Source]: *Center for Disease Control and Prevention - National Center for Health Statistics*; November 28, 2007.

<http://www.cdc.gov/nchs/pressroom/07newsreleases/obesity.htm>

Another Novel Approach to Avoiding Fat and Bulking Up

Exercise and diet are the only tried-and-true ways of losing body fat and building bone and muscle. So far, no "silver bullet" drugs have been developed that achieve the same effect in humans, although promising candidates are in testing (1).

Mesenchymal stem cells (MSCs) from bone marrow differentiate into

adipocytes, osteoblasts, or myocytes. A multicenter team found that, *in vitro*, mechanical signals could prompt MSCs to develop primarily into osteoblasts and myocytes rather than into adipocytes. The team then tested whether they could achieve the same effect *in vivo*.

They built a platform that produced very low-magnitude, high-frequency

The alarmingly high rates of obesity has caused the CDC to make prevention of obesity one of its top public health priorities.

Novel Approach (Continued from page 9)

“Additional testing will be necessary to determine whether the same effect can be achieved in humans.”

vibration, and placed mice on this platform for 15 minutes daily, 5 days each week, for 15 weeks. This "treatment" reduced adipogenesis by 27 percent, free fatty acid levels by 43 percent, and triglyceride levels by 39 percent in treated mice compared with controls — with no alteration of feeding or other behavior. Additional studies showed that the reduced adiposity was

caused by fewer MSCs differentiating into adipocytes.

A novel, simple, and probably benign "treatment" — low-magnitude mechanical signals — helps mice to avoid fat and build bone and muscle. Additional testing will be necessary to determine whether the same effect can be achieved in humans and to ascertain the durability of the effect.

Reference:

1. Rubin CT, Capilla E, Luu YK et al. Adipogenesis is inhibited by brief, daily exposure to high-frequency, extremely low-magnitude mechanical signals. *Proc Natl Acad Sci U S A*; Nov. 6, 2007; 104(45): 17879.

Source: Anthony L. Komaroff, MD. *Journal Watch*; Dec. 15, 2007; 27(24):191.

How Much Weight Gain is Optimal During Pregnancy?

The weight of women of reproductive age is increasing in the U.S. In three separate studies, researchers addressed the vexing question of whether recommendations for optimal weight gain during pregnancy should vary depending on prepregnancy body-mass index (BMI) (1-4).

Two studies used data from the Missouri birth registry. In the first study, investigators evaluated women with normal prepregnancy BMIs (1). Compared with women who gained 25 to 35 pounds during pregnancy, those who gained less than 25 pounds had lower odds for preeclampsia, cephalopelvic disproportion, failed induction of labor, cesarean delivery, and large-for-gestational-age infants and had higher odds for small-for-gestational-age infants. Women who gained more than 35 pounds (43 percent of the study population) had increased odds for preeclampsia, cephalopelvic disproportion, failed induction, cesarean delivery, and large-for-gestational-age infants, and had lower odds for small-

for-gestational-age infants.

In the second study, researchers evaluated overweight and obese women (2). Compared with weight gain during pregnancy of 15 to 25 pounds, gain of less than 15 pounds was associated with lower risk for preeclampsia, cesarean delivery, and large-for-gestational-age infants and higher risk for small-for-gestational-age infants. Of note, among the obese women (BMI ≥ 30 kg/m²), 23 percent gained less than 15 pounds and 46 percent gained greater than 25 pounds during their pregnancies.

In a third study (3), from Sweden, researchers found that optimal weight gain during pregnancy was less than 13 pounds for prepregnancy BMI ≥ 30 , less than 20 pounds for a BMI 25 to 29.9, and less than 22 pounds for women in all categories of BMI less than 24.9.

Pregnancy weight gain of greater than 35 pounds, regardless of prepregnancy weight, is associated with higher risk for adverse outcomes.

Lower weight gain among overweight



Pregnancy weight gain of greater than 35 pounds is associated with higher risk for adverse outcomes.

Pregnancy (Continued from page 10)

women seems to be associated with lower risk for adverse maternal and obstetric outcomes. Yet, overweight women tend to be just the women who gain more weight, rather than less,

during pregnancy. An editorialist suggests that these are "obstetric problems of plentitude."

References:

1. DeVader SR, Neeley HL, Myles TD, Leet TL. Evaluation of gestational weight gain guidelines for women with normal prepregnancy body mass index. *OG*; October 2007; 110(4): 745.
2. Kiel DW, Dodson EA, Artal R, Boehmer TK, Leet TL. Gestational weight gain and pregnancy outcomes in obese women: How much is enough? *OG*; October 2007; 110(4) :752.
3. Cedergren MI. Optimal gestational weight gain for body mass index categories. *OG*; October 2007; 110(4): 759.
4. Catalano PM. Increasing maternal obesity and weight gain during pregnancy: The obstetric problems of plentitude. *OG*; October 110(4): 743.

Source: Robert W. Rebar, MD. *Journal Watch*; November 2007; 27(22): 176.

Glucose Level Associated with Behavior of Diabetic Children

High blood glucose levels in children with type 1 diabetes were associated with an increase in behavior problems such as aggression and hyperactivity, according to a study of children ages 5 to 10 years (n=42).

Anecdotally, parents report that they can detect elevations in their child's blood glucose due to changes in behavior. This study tested for any possible association between child behavior and glycemic control.

Subjects were recruited from the diabetes clinic of the Royal Children's Hospital in Melbourne, Australia. Each wore a continuous glucose monitor for 72 hours on two occasions six months apart. Parents completed the Behavior Assessment System for Children at both times. The standardized instrument measures a child's externalizing

(aggression and hyperactivity) and internalizing (anxiety and depression) behavior over the previous six months.

Results showed a statistically significant association between higher mean blood glucose values and higher mean externalizing behavior scores. In addition, increased percentage of time in the high glycemic range (>216 mg/dL) and decreased percentage of time in the normal glycemic range (72-216 mg/dL) were associated with higher externalizing behavior scores. There was no significant correlation between mean blood glucose and the mean internalizing behavior scores.

The authors concluded that treating diabetic children who have externalizing behavior problems may improve both mental and physical health.



Higher mean blood glucose was associated with higher externalizing behavior scores.

Reference:

1. McDonnell CM, Northam EA, Donathet SM, et al. Hyperglycemia and Externalizing Behavior in Children With Type 1 Diabetes. *Diabetes Care*; 2007; 30: 2211-2215.

Source: Carla Kemp. *AAP News*; Jan. 2008; 29(1): 2.

Peer Program Effective in Teaching Healthy Behaviors

A peer-led health promotion program improved children's knowledge, attitudes, and healthy-living behaviors, according to a study of 360 Canadian elementary school students (1).

As the incidence of both obesity and eating disorders increases among youths, cost-effective, easy-to-implement programs are needed to prevent unhealthy eating patterns. Schools have been considered an ideal setting to implement such programs, since children spend a lot of time there. Peer-teaching is one method used.

In this study, researchers designed a peer-led program called Healthy Buddies in which fourth-through seventh-graders were paired with kindergarten through third-graders. Teachers first taught lessons on nutrition, physical activity, and healthy body image to the older buddies, who then presented the lessons to their

younger buddies. Two schools participated in the yearlong pilot study – one as the intervention school and one as the control. Outcome measures included health knowledge and behaviors, body satisfaction, disordered eating behaviors, fitness, height, weight, body mass index (BMI), blood pressure and heart rate.

Results showed that both older and younger students showed greater increases in healthy-living knowledge, behavior and attitude scores than control students. The intervention group also had a smaller increase in systolic blood pressure.

While BMI and weight increased in both groups of older buddies, the increase was significantly less in the intervention group.

The authors concluded that peer-led teaching can be an effective tool to increase health knowledge and behavior among students.

Reference:

1. Stock S, Miranda C, Evans S, et al. Healthy Buddies: A Novel, Peer-Led Health Promotion Program for the Prevention of Obesity and Eating Disorders in Children in Elementary School. *Pediatrics*; 2007; 120: e1059-e1068.

Source: Carla Kemp. *AAP News*; Jan. 2008; 29(1): 2.

Honey Helps Quiet Cough

Honey was more effective than dextromethorphan (DM) or no treatment in easing nocturnal cough symptoms and sleep difficulties associated with upper respiratory tract infections, according to a study of 105 youths ages 2 to 18 years.

Although coughs are common, there are no accepted therapies. The American Academy of Pediatrics does not support the use of DM, the most common over-the-counter antitussive, to treat cough in children. In addition,

manufacturers recently removed from store shelves some cough and cold products, mostly for children under 2 years of age.

The Food and Drug Administration also is considering whether to recommend cough and cold medicines to children.

Honey, on the other hand, has been cited by the World Health Organization as a potential treatment for cough.



Healthy Buddies paired older kids with younger kids to teach lessons about healthy behaviors.

Honey (Continued from page 12)

This study compared honey with honey-flavored DM and no treatment on nocturnal cough. Children with symptoms for seven days or less were randomized to receive a single dose of buckwheat honey, honey-flavored DM or no treatment 30 minutes prior to bedtime. Buckwheat honey, a dark variety, was given in a dose equivalent to the age-appropriate dose of DM.

Parents rated their child's symptoms on the night before treatment and the night after treatment. Outcome measures included cough frequency, cough severity, bothersome nature of cough, effect on child and parent sleep, and a combined score of all symptoms.

Results showed honey led to the greatest improvement in all outcomes,

followed by DM and no treatment. In paired comparisons, honey was significantly superior to no treatment for cough frequency and the combined score. There were no significant differences between DM and no treatment for any outcome. In addition, no significant differences were found between honey and DM.

Five patients treated with honey and two treated with DM had mild reactions, including hyperactivity, nervousness, and insomnia.

The authors concluded that honey is recognized as safe except for children younger than 1 year of age, and may be preferable to DM for the treatment of cough.



Honey was found to be more effective at treating mild coughs than the common over-the-counter remedy.

Reference:

1. Paul IM, Beiler J, McMonagle A, et al. Effect of Honey, Dextromethorphan, and No Treatment on Nocturnal Cough and Sleep Quality for Coughing Children and Their Parents. *Arch Pediatr Adolesc Med*; Dec 2007; 161: 1140-1146.

Source: Carla Kemp. *AAP News*; Feb. 2008; 29(2): 2.

Whom Do US Consumers Trust for Food Information?

American consumers have greater faith in advocates and activists and retail grocers than in either the government or food companies when it comes to providing information about food choices, according to a new survey.

In a national poll, about 64 percent of people said that advocates and activist groups have consumers' best interests in mind when it comes to providing information about food choices. Those feelings were even more pronounced among respondents who may be roughly equated with "thought leaders." Nearly 3 (74 percent) of 4 respondents felt that advocates and

activists have consumers' best interests in mind. Retail grocers also ranked highly (62 percent), and food manufacturers ranked third (53 percent). With consumers rating the US government at 47 percent, it ranked fourth, ahead only of fast-food companies (26 percent). (These results were from polls commissioned by Morgan&Myers, a communication firm specializing in food and agriculture, and the Worldcom Public Relations Group. The survey was conducted in mid-November by Gfk Roper Public Affairs and Media).

American consumers trust advocates, activists, and retail grocers more than the government in providing information about food choices.

Consumers (Continued from page 13)

Only half of those surveyed were confident about the adequacy of food safety regulations.

Confidence that the US government has adequate regulations to ensure the safety of food ranked only fifth out of 6 categories asked about in the poll. Only half (50 percent) of the consumers were confident about the adequacy of food safety regulations, ranking well below automobiles (83 percent), consumer electronics (80 percent), and clothing (77 percent) and slightly below pharmaceuticals (51 percent). The only category that food safety ranked above was toys (37 percent).

Ground beef and toys were subjects of highly publicized recalls in the past year. Only 46 percent of

Americans polled felt that the government had adequate food safety regulations for meat (ie, beef, pork, and poultry), and 48 percent for seafood. Breads, cereals, and grain products rated highest (65 percent), followed by fruits and vegetables (58 percent) and dairy products (57 percent).

Findings cited are from a national random digit dial telephone survey of 1,009 adults (older than 18 years) in the contiguous United States. All interviews were conducted from November 16 to 18, 2007. Findings for the total sample were projectable to the American adult population within a ± 3 margin of error.

Reference:

1. Many consumers trust activists and grocers for food information. *Morgan and Meyers* –News release; Dec. 5, 2007; http://www.morganmyers.com/consumer_food_research.htm.

Source: *Nutrition Today*; Jan/Feb; 43(1): 4.

Resource:

'We Can' Battle Obesity

The National Institutes of Health (NIH) and National Council of Negro Women (NCNW) have joined forces to help African-American children maintain a healthy weight. As part of the "We Can!" ("Ways to Enhance Children's Activity and Nutrition") national education program, NCNW members will offer workshops and demonstrations for parents and children on healthy lifestyles.

The "We Can!" program

includes a network of organizations in more than 450 communities in 44 states. The program focuses on three important behaviors: improved food choices, increased physical activity and reduced screen time. Other components of the effort include media outreach, partnership development with more than 40 national and corporate partners, resources for parents and health care providers, and a Web site at <http://wecan.nhlbi.nih.gov>.

Source: *AAP News*; Feb. 2008; 29(2): 21.



USDA Announces New MyPyramid for Pregnant and Nursing Moms

The US Department of Agriculture (USDA) launched a new MyPyramid Web site designed specifically for pregnant and breast-feeding mothers (1). The new interactive guidance, found at MyPyramid.gov, provides unique, individualized nutrition guidance to meet the needs of expectant and new moms. According to the USDA, for this time of life, proper nutrition for mom and baby is critical, and the tool should be helpful not only to moms but also to obstetricians and other healthcare providers. Obtaining a personalized "MyPyramid Plan for Moms" requires only a few steps. A pregnant woman enters her age, height,

prepregnancy weight, physical activity level, and due date. A breast-feeding woman enters similar information and the baby's birth date. Breast-feeding women will also select if they are feeding their baby breast milk only or supplementing with formula. Following these entries, a personalized MyPyramid Plan for Moms will be provided on their computer screen, which can be downloaded as a full-color printout. Since the original 2005 release of MyPyramid.gov, which contained the MyPyramid Plan and MyPyramid Tracker, USDA has launched MyPyramid for Kids and the Spanish-language *MiPirámide*.



Reference:

1. USDA Announces New MyPyramid for Pregnant and Nursing Moms. USDA News Release No. 0306.07; Oct. 25, 2007.

Source: *Nutrition Today*; Jan/Feb 2008; 43(1): 4.

Eating Behaviors of the Young Child Resource

Eating Behaviors of the Young Child: Prenatal and Postnatal Influences on Healthy Eating, by William Dietz, MD, PhD, FAAP, and Leann Birch, PhD, is a resource for parents and caregivers to help children develop healthier eating behaviors during the early years of life.

Developed by national and international child health and nutrition experts, the books' topics include

breastfeeding vs. bottle, transition to table food, food preferences among young children, cultural influences on children's food preferences, and intervention strategies for preventing obesity and encouraging healthy diets.

Order from the American Academy of Pediatric Bookstore a <http://www.aap.org/bookstore>, or call 888-227-1770.



Source: Sheryl Cash. *AAP News*; Jan. 2008; 29(1): 27.



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