

Our Children, Our Nutrition



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Changing Science, Changing Lives

New Infant & Toddler Growth Charts from the Centers for Disease Control

In September, the Centers for Disease Control (CDC) issued new recommendations on growth charts for children less than 24 months old. It is now recommended to use the World Health Organization (WHO) charts instead of the Centers for Disease Control (CDC) charts. These recommendations are based on a consensus of experts from the CDC, the National Institutes of Health, and the American Academy of Pediatrics. The new charts are better for children under the age of 24 months because they are based on a very well conducted, long-term study on children's growth from around the world including breastfed infants.

The old CDC charts were based mostly on formula-fed infants from a culturally and racially similar background. These differences are important because breastfed and formula-fed infants do not grow alike. Breastfed infants tend to gain weight faster in the first 3 months and then their rate of weight gain slows. In contrast, formula-fed infants tend to gain weight slower in the first few months of life and then gain weight at a faster rate thereafter.

The new charts were developed by the WHO in 2006. They describe standards of growth and growth of children in optimal conditions. When children do not grow according to these standards, doctors should then look at the child's environment and health to see if something can be corrected.

The CDC continues to recommend using the 2000 CDC charts for children over 24 months old, because the CDC and WHO methods are similar at this age. The advantages of the CDC charts is that they can be used until the child is 19 years old. The CDC charts also include a transition in measurements for when children switch from a laying down length to a standing height.

All of the charts are available at <http://www.cdc.gov/growthcharts>.

Reference: *Morbidity and Mortality Weekly Report*; Sept 10, 2010; Vol 59; No RR-9



Eating Well: Blueberries



Fresh blueberries are delicious, and as recent research has found, they also offer a variety of health benefits. According to recent research at ACNC, blueberries may help fight atherosclerosis, also known as hardening of the arteries. Atherosclerosis is the leading cause of two forms of cardiovascular disease, heart attacks and strokes. This research provides the first direct evidence that blueberries, rich in polyphenols, can help prevent harmful plaques or lesions from increasing in size in arteries.

The study compared the size of atherosclerotic lesions in 30 young laboratory mice. Half of the mice were fed diets with freeze-dried blueberry powder for 20 weeks; the diet of the other mice did not contain the berry powder. The blueberry diet contained 1% blueberry powder, the equivalent of about half-cup of fresh blueberries. All mice in the investigation were deficient in apolipoprotein-E, a trait which makes them highly susceptible to forming atherosclerotic lesions and thus an excellent model for biomedical and nutrition research. Lesion size, measured at two sites on the aorta (arteries leading from the heart), was 39 and 58 percent less than that of lesions in mice whose diet did

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Arkansas Children's Nutrition Center is an intramural research program of the U.S. Department of Agriculture's Agricultural Research Service. It is housed on the campus of one of the ten largest children's hospitals in the United States, Arkansas Children's Hospital. ACH, the Arkansas Children's Hospital Research Institute and the University of Arkansas for Medical Sciences are partners with the Arkansas Children's Nutrition Center.



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Hand Sanitizing vs Hand Washing: Which is better at keeping my child healthy?

Clean hands are one of the best ways to prevent passing along germs that can give us the flu or colds. There are two main ways to clean our hands – hand *washing* and hand *sanitizing*.

Hand Sanitizing

Hand sanitizing is a recommended choice for cleaning hands when soap and water are not available. Hand sanitizers are often alcohol-based, which means that they can dry out your hands. It also

means that their use should be monitored around small children who may eat things that are not food. Hand sanitizers do not clean hands if there is visible dirt, hand washing is preferred in these cases. For the sanitizer to work, it must be rubbed into the hands until the hands are completely dry.

Hand Washing

Hand washing remains the best way to stop preventable illness. Hand washing should

be done before handling food, after changing a diaper or toileting, coughing, sneezing, or handling garbage. Soap can either be antibacterial or regular, but regular soap is best. Wash hands, wrists, and between fingers in warm water for about 20 seconds (which is the time it takes to sing the Happy Birthday Song twice).

**Our vision,
Our research,
Our families,
Our team,
Our facility,
Our ACNC...**



halloween party 2010

Everyone had a great time at our annual Halloween party! The “nutrition” cupcake walk was by far the most popular game. Thank you to everyone that came out and celebrated with us. We look forward to spending this fun time with you every year!



**FUN.
FUN.
FUN.**

Meet our Staff: Tonja and Karin



Tonja Lawson joined ACNC five years ago as a research assistant/nutritionist. She has a B.S. in Dietetics and a Master's Degree in Family and Consumer Science from UCA. Tonja says her experiences have included "some tears, hundreds of little hugs, high fives, and so much more." One of her favorite things about her job is "watching the children come in for their visits a little unsure, but when it is time to leave they are begging to stay because they had fun and want more playtime in the playroom."



Karin Pennington joined ACNC in 2009. She is a Registered and Licensed Dietitian certified in childhood weight management and food safety. Karin has a B.A. in Biology and completed her dietetic internship at NY Presbyterian Hospital. When she relocated to Little Rock in 2009 from St. Louis, the ACNC just seemed like the "perfect fit". Karin says she enjoys "almost every aspect of her job" which includes monitoring food records for studies and coaching future moms how to experience a healthy pregnancy.

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not contain blueberry powder. Researchers found evidence that the artheroprotective effects of dietary blueberries was in part due to their ability to reduce oxidative stress, which is a known risk factor for atherosclerosis.

In future studies, ACNC researchers would like to determine whether eating blueberries in infancy, childhood and young adulthood would help protect against onset and progression of atherosclerosis in later years.

X. Wu, J. Kang, C. Xie, R. Burris, M. E. Ferguson, T. M. Badger, S. Nagarajan. Dietary Blueberries Attenuate Atherosclerosis in Apolipoprotein E-Deficient Mice by Upregulating Antioxidant Enzyme Expression. Journal of Nutrition, 2010; 140 (9): 1628-1632. DOI: 10.3945/jn.110.123927

**one should
eat to live.
not live to
eat.**

– Benjamin Franklin



Completing Food Records the "Write" Way

Completing food records is an important part of any nutrition study. That is why it is important that food records be very detailed and accurate in quantity amounts. We recommend to "Write When You Bite." By measuring and recording foods and amounts when you eat or drink, it will make it easier for you and will help us obtain very precise information. People who tend to wait until the end of the day to fill out the forms are less likely to remember the correct food and the quantity of the foods they ate.

Beginnings is a detailed study that compares

infants' diets and their health. We hope to use the food record information to help us see if there is any diet difference between infants and children who were fed breast-milk, milk-based formula or soy-based formula. We are also interested to see what foods may help children grow and be healthy.

The *GLOWING* study examines how the health of mom may affect the health of her baby. For this study, we use the food record details for several purposes. First, we use the diet information to guide us in the coaching sessions to help mom gain the rec-

ommended weight during pregnancy. We will also use the food records to see if what a mom eats during pregnancy has an effect, if any, on the health of her child.

We greatly appreciate when our study participants complete food records. Because we know it is sometimes burdensome to provide us with detailed information, we are available to help any participant that might want a refresher on how to complete food records. Accurate information helps contribute to the great scientific advancements of Arkansas Children's Nutrition Center.



Study Participation Opportunities

fMRI

This is a short-term study designed to look at how the food kids ate as babies affects how they think today. Participants attend up to three study visits on the campus of Arkansas Children's Hospital.

Qualifications

Children participating in this study must be healthy, between the ages of 7½ and 8½ and have been fed mostly breast milk, milk-based formula or soy-based formula from birth until their first birthday.

Compensation

Those completing each visit will receive monetary compensation in the form of a VISA card. A bonus card will be given to families completing all visits. Partially completed visits may be partially compensated.

Beginnings

This is a long-term, observational study for healthy babies. It is designed to look at how babies fed either breast milk, milk-based formula or soy-based formula grow and develop over the first six years of life.

Qualifications

Babies must be healthy, full-term and weigh at least six pounds at birth. Babies are accepted into the study until 2 months of age and must be fed mostly breast milk, milk-based formula or soy-based formula.

Compensation

Participants will be offered diapers or formula for the first year of participation. Following that, monetary compensation will be provided. Additional compensation may be provided for completion of each visit.

Glowing

This is a long-term study for pregnant women. It is designed to look at how the health of women at conception affects the health of their child at birth. Families are followed through pregnancy until the child is 2.

Qualifications

Women must be less than 8-weeks pregnant or thinking of becoming pregnant. Moms must be healthy at conception and meet specific entry criteria.

Compensation

Nutrition education and monetary compensation are provided through pregnancy. Formula is provided through the child's 1st birthday. Additional compensation is provided from 1-2 years of age.

Interested in learning more about a study being conducted at ACNC?

Think you may qualify to participate? All research studies require potential participants to be screened. This process is simple and conducted via telephone in approximately 5-15 minutes. During that time, the study can be explained in more depth and any questions you have may be answered.

Screening is done as a way to learn more about you and your baby or child. Typical questions center around the child's diet, your pregnancy and any other pertinent information that relates to the study being conducted. To be screened or learn more, please contact the ACNC Recruitment Line at 501-364-3309 or toll-free at 866-423-1311. For certain studies, pregnant moms may be placed on a waiting list.



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