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USDA/ARS Children's Nutrition Research Center at Baylor College of Medicine

ENCOURAGE A POSITIVE SELF-IMAGE TO KEEP KIDS ACTIVE

Children and adolescents who have a positive sense of their athletic identity are more likely to be physically active—information that parents can use as an effective tool in the fight against obesity.

“Self-identity, which includes athletic identity and self-image, starts when a child is born so it’s important for parents to see that they can encourage the development of these positive views. In fact, parents are a strong influence on how children see themselves,” said Cheryl Braselton Anderson, Ph.D., assistant professor of pediatrics at Baylor College of Medicine and a researcher at the USDA/ARS Children’s Nutrition Research Center at BCM.

Anderson has conducted studies that established the relationship between athletic identity and physical activity—or the sense of one’s self as being athletic—and participation in team sports. Her most recent study appeared in the *American Journal of Preventive Medicine*.

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Boy Scout badge program TEACHES HEALTHY LIFESTYLE

When most people think of the Boy Scout motto “Be Prepared,” they think of outdoor skills, but recently some scouts worked toward obtaining badges in nutrition or physical fitness to better prepare them for lifelong health.

Badge programs that combine in-troop and online activities to promote healthy eating or physical activity showed positive results in fruit and 100 percent juice consumption and activity levels, according to experts at the USDA/ARS Children’s Nutrition Research Center at Baylor College of Medicine and the University of Bristol (UK) in two studies published in the journal *Preventive Medicine*.

Forty-two Houston-area Boy Scout troops participated in one of two badge programs—a Five-A-Day badge program that promoted fruit, 100 percent juice, and vegetable consumption or a Fit-For-Life badge program that encouraged physical activity.

Half of the troops were randomly assigned to the nine-week Five-A-Day badge



program, which included about 30 minutes of in-troop activity time and 25 minutes of Internet-based programming per week.

“We incorporated recipe preparation and tasting into the troop time because we know that exposure to different foods is a way to increase preference, which is associated with greater fruit and vegetable consumption,” said Debbe Thompson, Ph.D., USDA/ARS scientist and assistant professor of pediatrics at BCM and lead author for one of the studies. “The recipes were quick, easy to prepare, and tasted good. The scouts enjoyed making them, and they especially

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Aerobic exercise HAS LIFELONG IMPACTS

A moderate aerobic exercise program can alter the metabolism of sugar in children and adolescents, reducing their risk of heart disease and diabetes later in life, according to experts at the USDA/ARS Children’s Nutrition Research Center at Baylor College of Medicine. The study results are published in *The Journal of Clinical Endocrinology and Metabolism*.

Researchers studied sedentary Hispanic adolescents who participated in a 12-week

exercise program. Later, they compared the insulin levels in lean and obese teens. Insulin controls the level of sugar in the bloodstream, to maintain the level of the sugar glucose within a normal range. When the body resists the effects of insulin, individuals can develop type 2 diabetes. Once rare, type 2 diabetes in teens is being seen more commonly.

“Obesity can increase the risk of developing type 2 diabetes and metabolic syndrome,”

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AEROBIC EXERCISE *(continued from page 1)*

said Agneta Sunehag, M.D., Ph.D., associate professor of pediatrics at BCM and senior author of the study. Metabolic syndrome is a collection of problems including abdominal obesity, a decreased ability to process glucose, also called insulin resistance, abnormal levels of fats or lipids in the blood and high blood pressure. These taken together can increase the risk of diabetes and heart disease.

Teenagers in the study had two, 30-minute exercise sessions per week at the Children's Nutrition Research Center and two additional sessions at home, where they wore heart rate monitors to ensure they exercised for the appropriate amount of time. Researchers focused on the impact of exercise on insulin levels rather than weight loss.

By the end of the program, even though none of the teens lost weight, both obese and lean adolescents had increased their insulin sensitivity and as a result their ability to maintain proper sugar levels in the blood. The obese adolescents also showed a decrease in abdominal fat which is correlated with insulin resistance.

Sunehag and colleagues are now determining whether an exercise and weight loss program will affect obese adolescents' insulin levels and susceptibility to type 2 diabetes and other health problems.

Others who took part in the study include Gert-Jan van der Heijden of BCM, Gianna Toffolo and Erica Manesso of the University of Padova in Italy and Pieter J. J. Sauer of the University of Groningen in The Netherlands.

Funding for this study came from the National Institute of Child Health and Human Development.

CHILDHOOD AND ADOLESCENT GROWTH AND DEVELOPMENT STUDIES

CELL PHONE SURVEY NEW!

Cell phone users are needed to complete a short Internet survey. We are designing a cell phone game to teach food parenting skills to parents of 3- to 5-year-old children. We want to know whether cell phone users would be interested in such a game, what problems they anticipate and what we would have to do to make cell phone

users want to play it. This anonymous, completely voluntary Internet survey will take no more than 10 minutes. If you are interested, please go to www.cnrcparentsurvey.com.

HEALTH DISCUSSIONS NEW!

White 5th graders in public schools, or their parents, are needed for a 1 1/2 to 2 hour focus group discussion about what the reasons are for the kinds and amounts of foods we eat and the amount of physical activity we do. Stipend provided. Call Nilda, 713-798-6737.

LACTATION STUDY NEW!

We are looking for pregnant mothers who are healthy, between 13 and 35 years of age, who will exclusively breastfeed for the first two months and who will be delivering at St. Luke's or Ben Taub Hospitals. Our research study will investigate factors (the regulation of gene expression) that affect breast milk production during the first six weeks. Financial compensation provided. Contact Janette for details, 713-798-7003 or jg16@bcm.edu.

Volunteers

Houston-area residents are invited to participate in the following nutrition research projects designed to help CNRC scientists learn more about the nutritional needs of children. Free transportation and parking are available.



CNRC PUTS FOCUS ON ENVIRONMENT THROUGH RECYCLING EFFORTS

At the CNRC, not only are we conducting research that impacts today's children, we are also taking proactive steps to limit our impact on the environment.

This year marked the 40th anniversary of Earth Day (April 22), and the CNRC has taken proactive steps in limiting its carbon footprint. The CNRC implemented the environmental management program in 2006 and recycles paper, cardboard, batteries, toner, plastic and aluminum and takes an aggressive approach in reducing our energy and water consumption.

Through the commitment of our employees, the following accomplishments have been met:

- More than 50,000 pounds of recycled paper
- Over 3,500 pounds of cardboard recycled
- More than 350 toners recycled

Annual energy consumption reduction has been implemented since the building was occupied in 1988.

The CNRC, together with other institutions in the Texas Medical Center, remain active in such efforts and have limited our environmental impact. Together, professionally and personally we can do our part. For more information please review: www.epa.gov/.



DHA FOR CHILDREN

Healthy children, 5 to 12 years old, are needed for a 48-week study examining a certain type of fatty acid (an omega-3 fatty acid called DHA) in the diet of children. Because dietary DHA is usually low in children and may affect their cognitive function, we wish to determine if DHA levels can be increased by a DHA supplement. The study includes seven visits to the CNRC. There will be three blood draws (once at the beginning, again after 8 weeks and one at the end). Compensation provided. Call Marilyn, 713-798-7002.

GIRLS ONLY

Healthy girls, ages 5 to 7 years, are needed to participate in a research project on female hormones. Free physical exam, labs and stipend provided. Contact Betty, 832-824-1257 or baw@bcm.edu.

HEALTHY KIDS PROGRAM

Healthy Kids-Houston is a free community program to promote a healthy lifestyle among children living in Houston. The program is being

This study examined the contribution of athletic identity to children's physical activity and team sports participation among 1,339 students in grades four, five, seven and eight. Since a child's gender, race and weight status (Body Mass Index, or BMI) may affect their athletic identity and sports participation, the study also investigated the association of these variables on children's physical activity.

Study participants completed an Athletic Identity Questionnaire, which measured their self-perceptions of athletic appearance; competence; importance of physical activity and sports; and encouragement received from parents, teachers and friends.

"We found that over and above gender, race and BMI, positive athletic identity is still highly predictive of activity and team participation," Anderson said. "That's important because it shows that we can cultivate a positive self-view regardless of your child's sex, ethnicity or weight status."

A previous study by Anderson and colleagues from BCM and Duke University studied a sample of 681 parents of 433 fourth- and fifth-graders from 12 Houston schools. They found that both boys and girls whose parents conveyed the importance of high-intensity team sports watched less TV and spent less time on their computers. However, boy's activity levels were higher than girls when both team sports and individual sports were endorsed.

"This study indicated that boys are encouraged more than girls to participate in certain sports and strenuous activities," Anderson said.

Anderson encouraged parents to think outside the box when trying to find physical activities for their children. Not all kids and teens



are interested in or skilled in sports like baseball and basketball. But there are other opportunities, like cycling or fun runs.

It is important for children to see themselves as athletic, Anderson said, because it will help them to remain physically active over time, even into adulthood. Routine physical activity produces long-term health benefits.

"People who see themselves as physically active continue to be consistently active over their lifetime," she said.

Childhood obesity is a serious health issue that has been linked with cardiovascular and respiratory disease, type 2 diabetes and certain cancers.

Current recommendations from the Centers for Disease Control and Prevention (CDC) call for one hour or more of moderate to vigorous physical activity each day for school-aged children and adolescents.

"Parents are crucial agents in exciting and motivating children, building their confidence and making physical activity a positive part of their lives," said Anderson. "Parents are the initial architects of a child's athletic identity."

Others who took part in this study included Hong Zhang, M.S., and Shine Change, Ph.D., of the M. D. Anderson Cancer Center; Louise C. Masse, of the University of British Columbia; and Karen Coleman, Ph.D., of the Southern California Permanente Medical Group. Research was supported by grants from the Cancer Research Foundation of America, the American Cancer Society, the Curtis Hankamer Basic Research Fund at Baylor College of Medicine, the National Cancer Institute and the American Heart Association.

offered to children 9 to 12 years of age at select Houston Parks and Recreation Department community centers. Children in the program will take part in after-school enrichment programs. Some community centers will offer additional physical activity, nutrition and behavior lessons. For more information contact Mercedes Alejandro, 713-798-7007.

SQUIRE'S QUEST! II

4th and 5th grade boys and girls are needed for a study to play a 10-episode computer game about fruits and vegetables. Children must be fluent in English and have an e-mail address, access to high-speed Internet connection and a parent who is willing to participate in the study. Parents will receive newsletters and access to a website on healthy nutrition. Parent materials are available in English and Spanish. Stipend provided for both parent and child. Call Marilyn, 713-798-7002.

SUGAR AND FAT METABOLISM

Volunteers are needed for a study on sugar and fat metabolism. Researchers are looking for Hispanic females between 13 and 17 years of age who have a sedentary lifestyle and are not on any medications. Participants must not have a parent or sibling with diabetes or high blood sugar. Compensation provided. Call Marilyn, 713-798-7002.

TEENS IN ACTION ONLINE SURVEY

Children and teens, ages 11 to 13 and 15 to 17 years old, are needed for an online survey about physical activity. Must be fluent in English and have Internet access and an e-mail address. Compensation is provided. Call Marilyn, 713-798-7002.

VITAMIN D STUDY

Normal weight children ages 4 to 8 years old are needed for a nutrient absorption study on calcium and vitamin D. Children should be healthy, not on medications and willing to have two blood draws (numbing creams and sprays are available). The study includes 8 weeks of daily vitamin supplementation and two overnight study visits (24 hours) at Texas Children's Hospital. Stipend provided. Call Marilyn, 713-798-7002.

Wii VIDEO GAME STUDY

9- to 12-year old boys and girls may be eligible to participate in a 6 month study to understand how video games influence children's physical activity. Must be fluent in English. Stipend provided. Call Marilyn, 713-798-7002.

BOY SCOUTS *(continued from page 1)*

enjoyed eating the items they prepared," she said.

The Internet component of the program was developed to teach self-regulatory skills such as goal setting, self monitoring and problem solving. Role modeling stories in the Internet program focused on Boy Scout characters who demonstrated how to overcome barriers to reach their goals using skills like negotiating and problem solving.

Researchers saw increases in fruit and 100 percent juice consumption, unfortunately they were not maintained six months after the program ended.

In the Fit-For-Life badge program, Boy Scouts participated in the same structure of in-troop and Internet activities, but focused on in-troop physical activity, Internet-based goal setting and problem solving for increasing physical activity.

This program resulted in a decrease in sedentary behavior and an increase in light-intensity activities.

Points were awarded for participating in the troop and web-based

activities. Those who received 70 percent or more points received a badge.

"Combining in-troop and Internet based activities may be an effective way to reach Boy Scouts," said Thompson. "This is exciting because it gives us insight into how to design programs to help scouts make healthy lifestyle choices."

"Internet-based role modeling stories that resonate with participants may help them achieve the same goals as in-troop activities, but do not require travel to a specific location. Therefore, they are more convenient," said Thompson.

Others who took part in the studies include Dr. Tom Baranowski, Janice Baranowski, Dr. Karen Cullen, Dr. Kathy Watson and Yan Liu of BCM, and Dr. Russell Jago of the University of Bristol.

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