The University of Iowa

IOWA

FLUORIDE and BONE DEVELOPMENT STUDY

NEWS

DECEMBER 2009

STARTING OUR 17th YEAR

It's been about a year since we last updated you and it's been one busy year for us here at the Iowa Fluoride Study! We would like to thank all of our families for their commitment to the Study. The Iowa Fluoride Study entered its seventeenth year this year and we would like to take an opportunity to look back at how much we have been able to accomplish thanks to you! Without the time and energy you and your families have committed to completing questionnaires and attending dental and bone exams, we would not be here today. We will be able to close out the year with some great numbers for the Iowa Fluoride and Iowa Bone Development Studies.

The numbers say it all! To date, this is what we have accomplished:

698	Five-year dental exams
630	Eight-year dental exams
552	Thirteen-year dental exams
2	Seventeen-year dental exams
23,528	Completed and returned questionnaires
961	Parent bone exams
471	Five-year bone exams
539	Eight-year bone exams
483	Eleven-year bone exams
489	Thirteen-year bone exams
327	Fifteen-year bone exams
2	Seventeen-year bone exams
2,459	Activity monitor studies

EARLY EXERCISE PAYS OFF

We are appreciative of all our participants who have been involved in the physical activity component of the Bone Study. About every two years, we ask you to wear a physical activity monitor around the time you come in for your bone scan. This activity monitor is used to capture your physical activity levels during those five days. Thanks to your participation and willingness to wear the physical activity monitors, we have been able to collect important data. Our data collection over the years as let to some significant findings, including a finding recently featured in Parade Magazine!

"Physical activity early in life may help protect kids from excessive fat gains later in childhood—even if their activity levels drop off." This finding was featured in the September 9, 2009 issue of Parade Magazine. Dr. Kathleen Janz, who directs the physical activity component of the Bone Study, was the lead author on the scientific journal article entitled "Sustained Effect of Early Physical Activity on Body Fat Mass in Older Children," which was featured in the Parade article and published in July in the American Journal of Preventive Medicine.

Dr. Janz calls this effect banking "because kids benefit later on, similar to having a savings account at a bank…. the implication is that even 5-year-olds should be encouraged to be as active as possible because it pays off as they grow older."

Using your bone scans and the data from your physical activity monitors, the Bone Study tested body fat and activity levels at ages 5, 8 and 11.

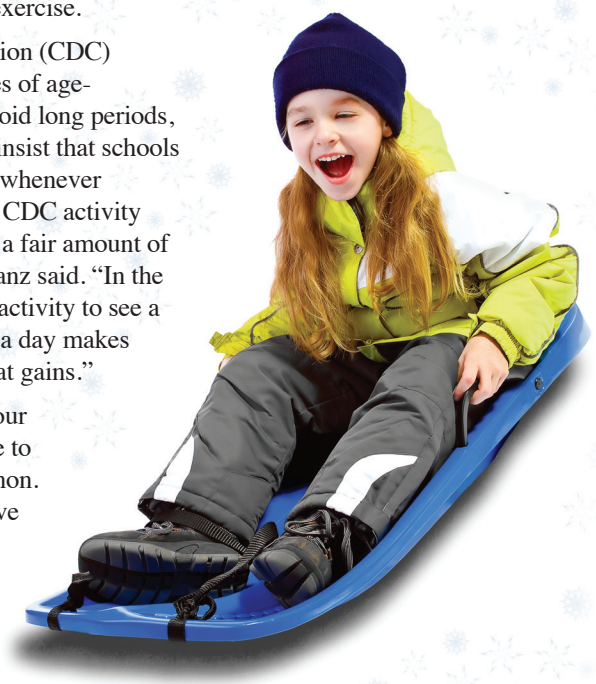
The average 5-year-old in the study got 30 minutes of moderate to vigorous exercise per day. For every 10 minutes on top of that, kids had about one-third of a pound less fat tissue at ages 8 and 11.

Further investigation is needed to learn what happens to the active kids' bodies that keeps them in better shape down the road. It may be that the active 5-year-olds didn't develop as many fat cells, improved their insulin response, or that something happened metabolically that provided some protection even as they became less active.

The study also indicated that boys are more likely to experience the sustained benefit from being active as preschoolers, possibly because they are more active at age 5 than girls, highlighting a need to especially encourage young girls to exercise.

The Centers for Disease Control and Prevention (CDC) "recommends that kids get at least 60 minutes of age-appropriate physical activity every day… Avoid long periods, more than 60 minutes, of sedentary activity, insist that schools provide morning and afternoon recesses and whenever possible get kids outside. Kids who meet the CDC activity recommendations tend to be kids who spend a fair amount of time outdoors enjoying unstructured play," Janz said. "In the end, it doesn't take that much extra physical activity to see a measurable outcome. Even 10 extra minutes a day makes a difference in protecting against excessive fat gains."

The entire Bone Study team is grateful for your help in this component of our study. We hope to continue examining the "banking" phenomenon. If it persists through adolescence, it may prove to be yet another reason why childhood physical activity is critical for healthy development.



MEET the STAFF

Dr. Linda Snetselaar has recently joined other researchers on the Iowa Bone Development Study team to focus on the nutrition data collected from study participants. Originally from Otley, Iowa, Linda graduated with a BS degree from Iowa State University in Dietetics/Food Science/Secondary Education, a MS degree in Nutrition from the UI Department of Internal Medicine, and a PhD in Health Sciences Education from the UI with an emphasis on behavior change in nutrition interventions.

Dr. Snetselaar's current positions are Interim DEO of the Department of Community and Behavioral Health, Professor in the Department of Epidemiology, Endowed Chair of Preventive Nutrition Education, Director of the Prevention Nutrition Center, and Director of the Nutrition Center in The University of Iowa College of Public Health. Through her many research, teaching, and service projects, she has helped to establish The University of Iowa as a leader in addressing important community-based health concerns, including childhood obesity and women's health. Snetselaar's research interests include the relationships between diet and cardiovascular disease, diabetes, cancer, and renal disease. She is a member of both the American Dietetic Association and the Iowa Dietetic Association and directs the Dietetic-Based Research Network. When not busy with her many projects, she enjoys spending time with her husband Gary and three sons – Jordan, Daniel, and Tyler.

If you are coming to the Clinical Research Unit for a 17-year-old dental exam this coming year, you may have your teeth examined by **Dr. Justine Kolker**. She recently joined the Study this spring as a dental examiner. Dr. Kolker grew up in Dubuque, Iowa and received her Bachelor's degree in Political Science from Iowa State University in 1992. She earned her DDS from the University of Iowa in 1996, followed by an MS in Operative Dentistry in 2000 and a PhD in Dental Public Health, Oral Epidemiology in 2003. Dr. Kolker currently is Assistant Professor of Operative Dentistry.

Dr. Kolker previously worked as a dental examiner for the University of Michigan, at the Detroit Center for Research on Oral Health Disparities. The project aimed to promote oral health and reduce disparities in oral health within the community of low-income African-American children (0-5 years) and their primary caregivers living in Detroit. When Dr. Kolker is not performing dental examinations, she likes to bake and decorate cakes.

Joanna Morrissey is a graduate student research assistant for the physical activity monitor portion of the Iowa Bone Development Study. She recruits participants to wear the physical activity monitor and downloads the data received from the monitors. Jo is originally from Onalaska, Wisconsin and holds a B.A. in Psychology from the College of Saint Benedict and a M.S. in Sport and Exercise Psychology from Ball State University. She is currently a 3rd year PhD student in Psychology of Sport and Physical Activity at the University of Iowa. When Jo is not recruiting participants for motion sensors, she works as a teaching and research assistant in the Department of Health and Sport Studies at the University. In her free time, Jo is a big Chicago sports fan, loves to read, spend time with family and friends, and enjoys being active outside whenever she can.

Elham Kateeb joined the Iowa Fluoride Study this year as a graduate student research assistant. She assists with the dental exams, including taking impressions and collecting saliva and plaque samples. Originally from Palestine, Elham has a Bachelor's degree in Dental Science from Jordan and a Master's of Public Heath from the University of Massachusetts at Amherst. She is currently a 2nd year PhD student in the Oral Science program at the University of Iowa, with an emphasis in Dental Public Health, and is a faculty member in the Community and Preventive Dentistry Department at Al Quds University in East Jerusalem. Elham is married to Dr. Rafat Amer who works in Operative Dentistry at the University. They have two children, Sami who is 8 years old and Saif who is 4 years old. In her free time, Elham enjoys reading, cooking and shopping.

WELCOME BACK

Cynthia Pauley has returned to her position as a Research Assistant with the Iowa Fluoride/Iowa Bone Development Study. In addition to her previous duties, she will now perform bone scans, operating both the DXA and pQCT machines. She is excited about the opportunity for enhanced training and increased responsibilities as a Clinical Densitometry Technologist. Cynthia enjoys spending even more time with our teen subjects during their evaluations at the Clinical Research Unit and wishes to thank them, and their families, for their discipline required to participate in a longitudinal research study.

Originally from Waterloo, Iowa, Cynthia holds a Bachelor of Art degree from the University of Iowa. She has lived in the Iowa City area for 34 years and appreciates the academic and cultural climate of this midwestern university town. She's happily married to Dennett Hutchcroft and they have two college-aged sons.

GRANT STATUS

Your great efforts to return mailings and attend age 13 bone exams have been great and have paid big dividends! We are very pleased and excited to have recently received new grant funding from the National Institutes of Health (NIH) to continue this unique study from 2009 until 2014. This new award will continue to support us to conduct all of the age 15 and 17-year-old bone densitometry assessments, the accelerometer (motion sensor) assessments, and questionnaire data collection by mail. Thank you for making it all possible!

AGE 17 EXAMS

Again, we are very thankful for all your contributions in making our studies so successful! We finished our age 13 dental and bone exams this past summer, which were conducted on the youngest part of our study group. Also, we're well into the process of conducting the age 15 bone exams. We are now done with the collection of motion sensor (physical activity) data collection for this year as well. We're continuing to collect questionnaire data by mail, while we just began age 17 bone and dental exams this fall. Those of you who are 17, or will soon turn 17, are the oldest members of our study group and have recently been contacted or will soon be contacted to participate in bone and dental exams. Because we were successful in obtaining funding for 4 ½ more years and because of your valuable participation, we are pleased to invite you back for exams at age 17.

UPDATE

We continue to be very successful with all aspects of the studies because of your great participation rates. Study participants' ages now range from 14 ¾ to 17 ¾, so we are conducting several study phases simultaneously. Specifically, we recently began conducting age 17 bone and dental exams on the older study participants, while we continue to conduct age 15 bone exams on the younger participants. We also will continue to send mailings of questionnaires every 6 months, as well as other periodic mailings.

GENETICS

Consistent with the consent you provided, we are using the DNA samples you have provided to better understand relationships of genetic factors with childhood bone development, as well as dental caries and dental fluorosis. We are not aware of any other studies doing this. We are collaborating with experts at the University of Iowa and at other leading research institutions, and hope to have the opportunity to submit additional grant applications for even more detailed analyses.

Because of the many different genetic analyses that we are planning, we will be continuing to collect additional DNA samples in cases where we do not have enough quantity of sample or our supplies are running low. Thanks for your continued help with this!

CONTINUED PARTICIPATION & CONSENT at AGE 18

When participating study subjects turn age 18, they will need to provide informed consent (instead of their parents.) Thus, beginning in March 2010, when the oldest children in the study turn 18, we will be sending a mailing with paperwork to each 18-year-old to complete and return to us in order to give permission to continue sending questionnaires and other study mailings. We will also ask for updated contact information at that time. Please let us know if you have any questions.

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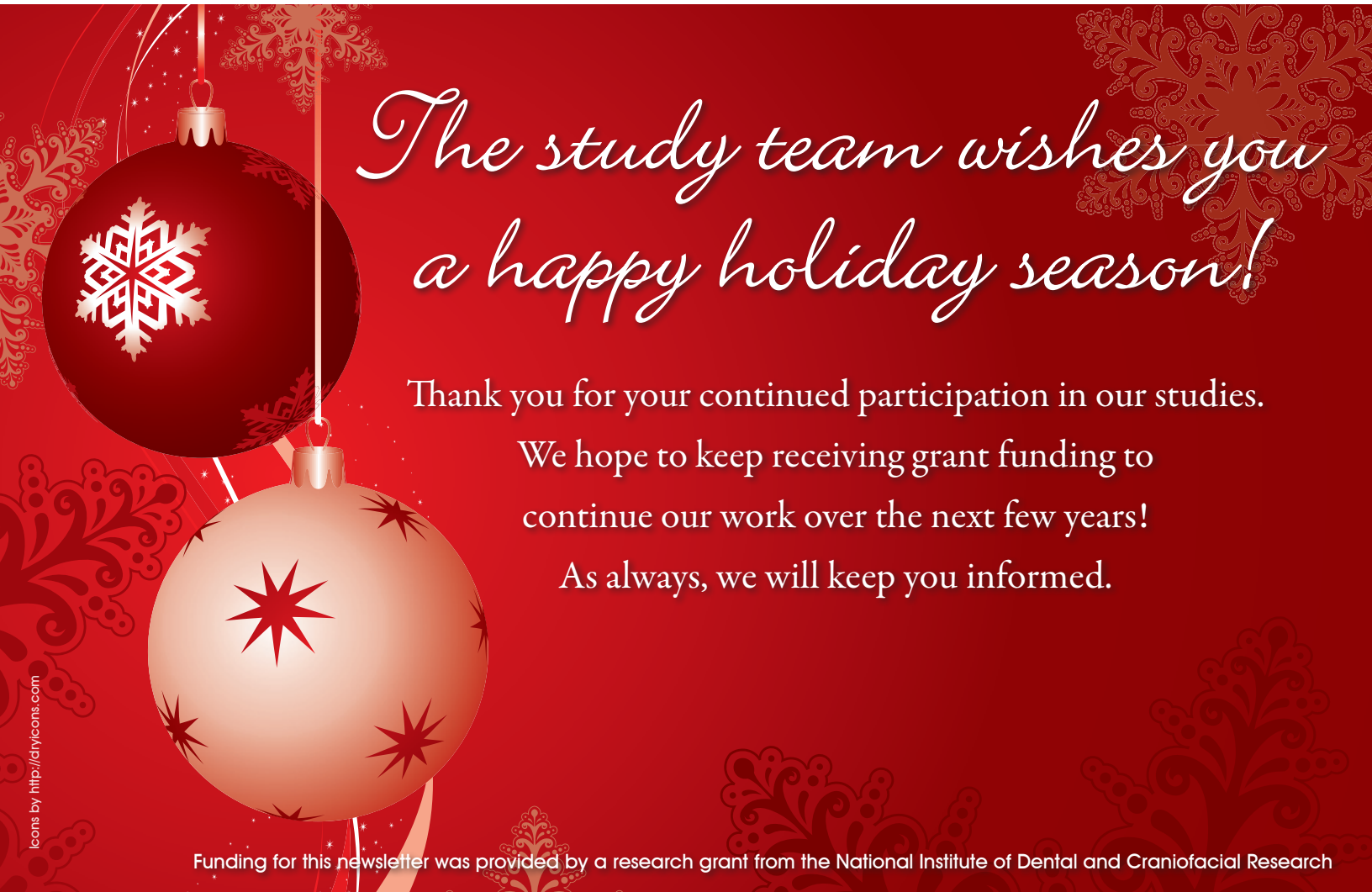

Funding for this newsletter was provided by a research grant from the National Institute of Dental and Craniofacial Research