THE UNIVERSITY OF IOWA

IOWA FLUORIDE and BONE DEVELOPMENT STUDY NEWS

NOVEMBER 2005

STARTING OUR 14th YEAR

As children transition through the "tweens", we see that they are capable of much more responsibility. The junior high years are the years when the child is gradually expected to accept more responsibility. The teachers are less willing to accept excuses for things such as undone homework or PE clothing left behind. We, as parents, are relieved that this day has come because it reduces the burden on us and we can see that the day is coming where we have indeed produced capable adults!

With this in mind, we believe that many of the children in our study have the maturity to assist you with the task of completing our mailed questionnaires. You have probably had to ask them questions in the past in order to complete the questionnaire. Maybe your child isn't ready to take it over completely, but perhaps they could do a great deal of it. This is entirely up to you. Also, during exams for Wave 3 and 4, we have short questionnaires specifically geared toward your child. The children in our study are doing a terrific job with these questionnaires!

As always, we look forward to seeing you and your child at exams. Currently, the oldest children are being invited to participate in Wave 4 of our study. Wave 4 includes both a bone scan and a dental exam. The bone scan portion this time will include scans of the back, hip, wrist, leg and whole body as well as measurements of height, weight, arm circumference and grip strength. No blood draw/cheek swab is necessary if we already obtained it at Wave 3. The dental exam will include a routine screening exam by one of our dentists, along with dental impressions and a blood sample or cheek swab. In addition, we will collect a saliva and plaque sample from your child's teeth. This is for a newer part of our study that is looking at the role of bacteria in cavity formation.

The younger children are coming in for the Wave 3 exam which involves only the bone scan (and related questionnaires, height, weight, etc.). It is fun for us when the kids come in and remember us from the last time they were in! It is also exciting to see how much they have grown!

As always, we are very grateful to you for continuing to be a part of this special group! We know the demands on your time are many and we feel fortunate that you share some of that time with us!

Some Fluoride and Bone Development Study team members gather for a photo.

(clockwise from left)

Marlys Dunphy, Joan Grabin, Linda Saleh, Heather Pallister, Barb Simon, Julie Gilmore, Dr. Steve Levy, Cheryl Richmond.

MEET the STAFF —

If you've had a dental exam recently, you may have met **Dr. Karin Weber-Gasparoni**. She is a dentist who just joined the Study team this summer. Dr. Weber-Gasparoni grew up in Londrina, Brazil and received her DDS degree from the Universidade Estadual de Londrina in 1994. She came to the University of Iowa in July 1996 where she received a Certificate in Pediatric Dentistry, a master's degree in Dental Public Health, and a PhD in Oral Science.

Before coming to the University of Iowa, Dr. Weber-Gasparoni was an Assistant Professor at Universidade Estadual de Londrina. After completing her PhD, she joined the UI Department of Pediatric Dentistry and is currently an Assistant Professor as well as Director of the "Infant Oral Health Program" at the Johnson County Department of Public Health-WIC Clinic in Iowa City.

Dr. Weber-Gasparoni is married to Alberto Gasparoni, a dentist and researcher. They have 3 children (Nathalia, age 20; Leonardo, age 4; and Isabella, age 2 1⁄2).

Dr. Jim Wefel is a "behind-the-scenes" member of the Study team. He is a chemist and Director of the College's Dows Institute for Dental Research. He has been part of the Study team since its beginning. His primary other responsibility is to guide the protocols for laboratory analyses of beverages and foods for fluoride content.

He grew up in Cleveland, Ohio and attended Valparaiso University in Indiana where he received his BS degree. He then went to the State University of New York-Buffalo for his PhD. His research interests include early caries (cavity) detection and enamel/dentin remineralization.

He and his wife, Jan, have 2 children, Jeff and Jay. In his free time, Dr. Wefel enjoys volleyball and soccer and likes to travel.

DR. LEVY RECEIVES AWARDS

Dr. Steve Levy, Principal Investigator for the Iowa Fluoride Study and Iowa Bone Development Study, was awarded a Bureau of Health Profession's Associate Administrator Achievement Award (in recognition of his outstanding achievements in advancing the dental education of the nation's health workforce). The award was from the US Dept of Health and Human Services' Health Resources and Services Administration Bureau of Health Professions.

In addition, last April, Dr. Levy was appointed to the Wright-Bush-Shreves Professorship of Research. This is only the fifth named professorship in the College of Dentistry and it is the first time that someone has been named as a permanent appointment to such a professorship. The criteria for such an endowed professorship include: having stimulated or substantially altered his/her field through scholarly or artistic work; received international recognition by peers within the field; and made exceptional teaching contributions. Congratulations!

IFS RECEIVES RENEWED GRANT FUNDING

We are pleased to report that we have recently been awarded another grant from the National Institute of Dental and Craniofacial Research to continue the Iowa Fluoride Study for the next 3 1⁄2 years. This major grant will support the ongoing costs of the collection of biannual questionnaire data, the dental examinations at age 13, and detailed statistical analyses relating the fluoride and dietary data that you provide for the dental caries and fluorosis examination results. This new award is testimony to the importance of the research we are conducting and our success in having you continue to participate actively in the Iowa Fluoride study. Thanks for your efforts to help us continue to be successful!

STUDY SHOWS that VIGOROUS ACTIVITY INCREASES CHILDREN'S BONE STRENGTH

Young children who have 40 minutes of normal vigorous activity each day have much stronger bones than other less active children. This is according to new research based on information from the Iowa Bone Development Study (IBDS). The research was reported by Dr. Kathleeen Janz and co-authors, all members of the Study team, in the journal *Medicine & Science in Sports and Exercise*. Results suggest that sustained activity during early childhood, when bone is most likely to adapt to the strains of physical activity, may have as much effect on osteoporosis as adult interventions.

"It is important that children not miss this critical window of opportunity for building strong bones," says Dr. Janz, "The process of creating healthy bones begins early. We should encourage children to get outside and play and engage in vigorous, high-intensity, muscle-flexing activities."

This research was based on data from 460 IBDS children at about 5 years of age. Parents completed questionnaires about each child's daily activity level. Each child then wore an "activity belt" for 4 days that recorded the amount and intensity of activity, minute-by-minute. Activity levels for each child were then compared to measurements of bone size and strength taken at 3 locations at and around the hip.

At each bone measurement site, children who accumulated the most vigorous activity (42 minutes or more per day of high-intensity activities like hopping, running and jumping) had significantly greater measurements of bone size and strength.

The research suggests that the increase in bone strength is due to bone's natural ability to adapt to physical activity. Our study participants wore the activity belt around the hip area. The hip is the part of the skeleton that most depends on physical activity to stay strong. This site is chosen because it is also the site of osteoporosis-related fractures later in life that are the most debilitating.

The researchers also found that boys and girls took part in similar amounts of moderate daily activity, but that boys accumulated about 10 minutes more daily vigorous activity than girls. Overall, the boys in the study had significantly stronger bones than the girls.

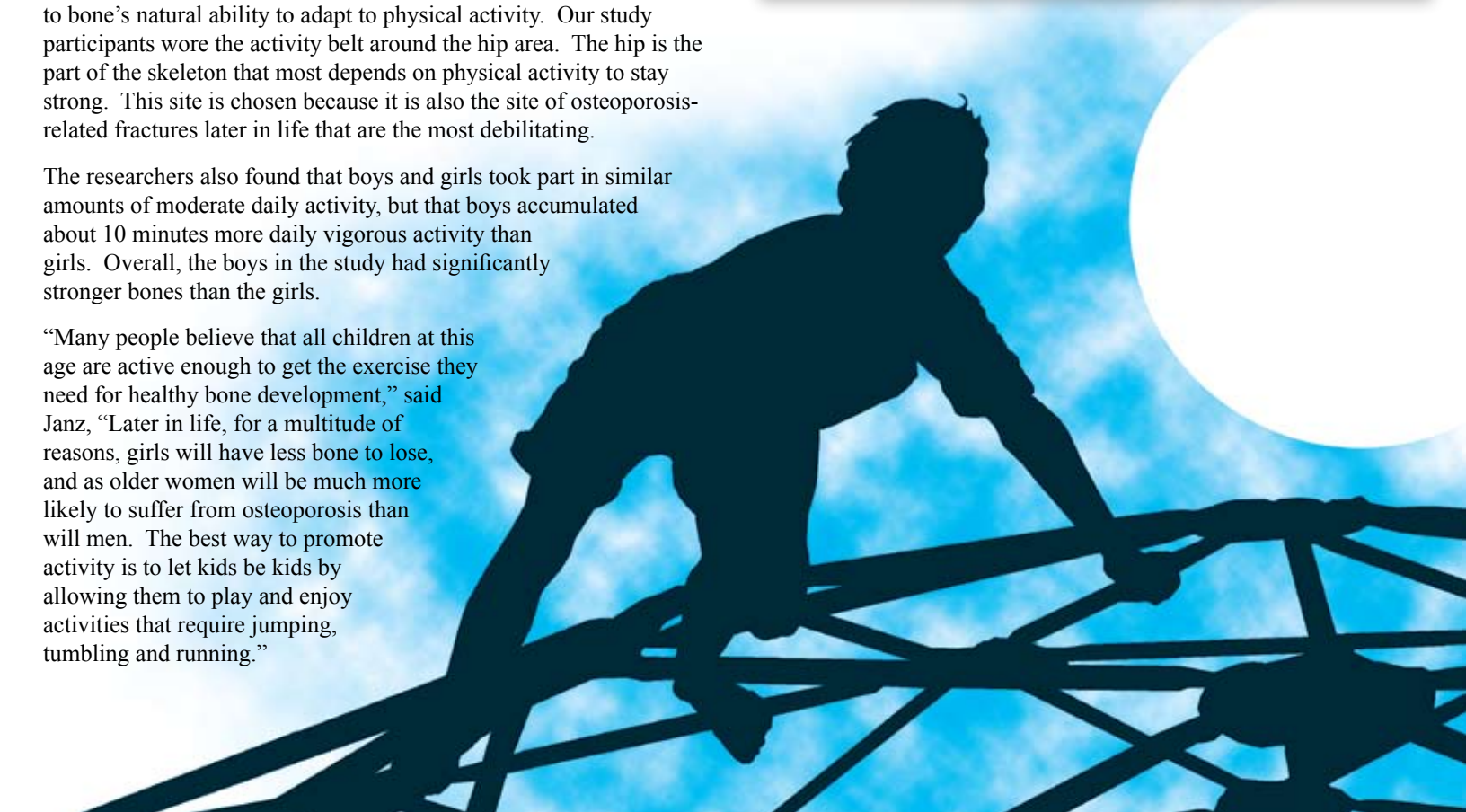
"Many people believe that all children at this age are active enough to get the exercise they need for healthy bone development," said Janz, "Later in life, for a multitude of reasons, girls will have less bone to lose, and as older women will be much more likely to suffer from osteoporosis than will men. The best way to promote activity is to let kids be kids by allowing them to play and enjoy activities that require jumping, tumbling and running."

GENETICS and TOOTH DEVELOPMENT

The Iowa Fluoride Study and the Iowa Bone Development Study continue to study new factors that arise in dental and bone research. In June, we mailed out letters to all of you who had previously provided us with a blood sample or cheek swab. The letter described an additional type of research that the Study will be conducting.

Until now, the Study has only been looking at genetics (heredity) related to bone development. We plan to expand that research now to look at genetics as it relates to tooth development, related dental conditions, and body composition. In order for us to use your sample for this new research, we need your permission.

This is a very important aspect of our Study. Thanks to all of you who have already returned your permission letter. For those who have not, please take a moment and send it in. Also, we will be sending out reminder letters to those whom we have not heard from.



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