The University of Iowa
College of Dentistry & Dental Clinics

IOWA FLUORIDE and BONE DEVELOPMENT STUDY NEWS

DECEMBER 2013

OUR 22nd YEAR

It's been a year since we last updated you and it's been quite a busy year for us here at the Iowa Fluoride Study! We would like to thank all of our families for their ongoing commitment to the Study. This year, the Iowa Fluoride Study is in its 22nd year since recruitment started 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. Thanks again!

The numbers say it all!
What we have accomplished:

698	Five-year dental exams
630	Eight-year dental exams
552	Thirteen-year dental exams
445	Seventeen-year dental exams
41,917	Completed and returned questionnaires
3,410	Activity monitor studies
471	Five-year bone exams
539	Eight-year bone exams
483	Eleven-year bone exams
489	Thirteen-year bone exams
419	Fifteen-year bone exams
382	Seventeen-year bone exams
182	Nineteen-year bone exams
978	Parent bone exams

FLUORIDE AND BONE HEALTH

Community water fluoridation (CWF) is the most cost-effective method of preventing cavities- benefiting children, young and middle-aged adults, and the elderly. This is especially true for the most disadvantaged who are less likely to receive professional dental care and benefits from other fluoride exposures. Iowans are fortunate because the large majority of people receive fluoridated water (~92% of those on public water systems).

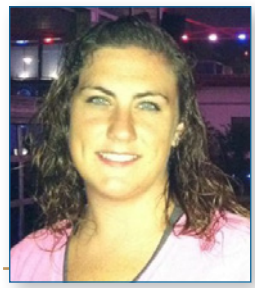
Despite nearly 70 years of evidence of safety and cavity-preventive benefits of CWF, some people continue to raise questions about CWF. One of the areas sometimes questioned is fluoride's effects on bone health, because it binds to teeth and bone. Available evidence suggests that fluoride at high levels (4-6 times the recommended level or greater) is associated with increased risks of bone fracture, but that at the recommended levels there is no increased risk.

As you know, the Iowa Bone Development Study is studying normal bone development and relationships with fluoride intake and other factors. With your help, we have had one journal article published about bone development assessed by dual-energy X-ray absorptiometry (DXA) at age 11 and fluoride intake (Levy et al., 2009) and have one about age 15 bone and fluoride in the final stages of journal review (Levy et al., 2013). You can find these articles listed on our website under Research – Newsletters and Articles. Using the detailed data you provided, both of these analyses found only weak associations between fluoride intake and bone mineral density (BMD), and no risk to adolescent bone development. These important findings help support the safety of water fluoridation and fluoride overall, and we will continue to study these relationships further.

MEET the STAFF

Suzanne Sinift

Suzanne Sinift is a new research assistant for the study. She enjoys research and has been fortunate to work on a variety of studies in the Department of Family Medicine, College of Public Health and now here at the dental college. Suzanne assists with exams at the CRU, the various mailings that are sent to our participants, as well as making phone calls to ask follow-up questions. In her spare time, Suzanne enjoys films, reading, traveling, as well as working on a small family property in hopes of making it a gathering place for family and friends. She has lived in Coralville for 30 years and has two sons and many wonderful relatives.

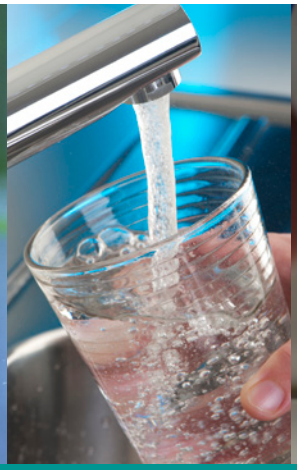


Melissa Shirk

Melissa Shirk joined the IBDS study in July 2013 as a CT imaging technologist and is currently working as a Research Assistant in Dr. Eric Hoffman's lab at the University. She is originally from Hudson, Iowa and graduated from the University of Iowa with a B.S. in Radiation Sciences. In her free time she enjoys bike rides with her boyfriend, relaxing at Lake Thunderhead in Missouri with her family, and road trips, especially to zoos!

PEAK HEIGHT VELOCITY

You may have noticed on your last visit for a bone scan that we no longer require measurements for stretch height and sitting height. Those two measures were used in the past to estimate each subject's age at peak height velocity, which is the age at which a person is growing fastest. For girls, peak height velocity generally occurs around age 12-13, but for boys it is later, around age 13-14. In the 2-3 years surrounding this growth spurt, we can see substantial increases in bone mineral content, so it was important to mark that period in our study subjects. Now that our IBDS participants are all age 18 and older, growth has slowed and we no longer need to adjust for the peak height velocity effects.



Current Happenings

We continue to be very successful with all aspects of the studies because of your great participation! Study participants' ages now range from 18¾ to 21¾ years, so we are mostly conducting one study phase at this time. Specifically, we are conducting age 19 bone exams, as well as a few dental exams as needed. The accelerometer staff have just finished working with participants for this fall, and will start with it again next September. We're also continuing to collect questionnaire data by mail every 6 months and we use that information to identify water sources and track fluoride exposures.

ELECTRONIC QUESTIONNAIRES

When you come in for an age 19 visit, you will notice that we have changed the format of a few of the questionnaires that you complete. Two of the questionnaires are now completed on the computer using the system Qualtrics®. One of the questionnaires, "Physical Activity" was previously completed on paper. The other is an entirely new questionnaire, "Lifestyle" that covers thoughts on food, exercise and the influence of others on both of these topics. The Research Assistant will load the questionnaires for you, give some brief instructions and allow you time to complete them. We hope you enjoy this new format for your visit!

RELIABILITY

When you return the 6-month study questionnaires to our office, you may be selected to answer some additional questions by our staff member, Suzanne Sinift. If you receive a message from her, please feel free to call us back during the weekdays, between 8 and 5, and any of our staff members will assist you. For those whom we have contacted or will contact, we appreciate your help with this aspect of the study!

Thank you for your continued participation in our studies. We hope to keep receiving grant funding to continue working with you over the next few years! As always, we will keep you informed.

grant STATUS

Because the Iowa Fluoride Study and Iowa Bone Development Study are such unique studies and you have all continued to participate so well, we are continuing the studies. This also means that we are always working very hard to continue to apply for grant funds to keep things going.

We received a major NIH grant supplement in September 2011 to keep the Bone Study going to conduct the age 19 exams, including the new advanced densitometry technologies and analytical approaches. We are also working to complete age 17 dental examinations with support from our grants from the Roy J. Carver Charitable Trust and the Delta Dental of Iowa Foundation.

We submitted a major grant application in July 2013 to hopefully support age 22 examinations, with an anticipated start date in later 2014.

Thank you

for your continued participation making the studies' successes possible!

WEBSITE

Check out our website to find background information about the study, a list of publications and news articles related to this study. All of this would not be possible without your participation over the last 22 years!

www.dentistry.uiowa.edu/preventive-fluoride-study

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Happy Holidays everyone!

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As always, we will keep you informed.

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