



FLUORIDE and BONE DEVELOPMENT STUDY

JANUARY

201

CELEBRATING OUR 25TH YEAR -Thanks To all of you!

For nearly 25 years, the Iowa Fluoride Study team has had the honor of working with so many great individuals and their families. Your participation is one of the reasons we have been successful for so long. Dr. Levy exclaimed, "I can't believe that the Iowa Fluoride Study grant has been going for 25+ years and the oldest participants will soon be age 25! It has been incredible that we have kept the study going and continue to receive National Institutes of Health (NIH) funding."

We collected some memorable moments, highlights, and comments from the Iowa Fluoride Study team:

- ★ Several of us have been here since day one of the Iowa Fluoride Study and we have enjoyed seeing you transform from babies to young adults. Dr. Warren recounted, "I've done a lot of the exams and what's interesting is what's happened to all those little kids that we saw – they've grown up!"
- ★ It's been great hearing about many of your life milestones, including school-related activities, graduations, marriages, children, jobs and more. Barb Simon, a research assistant commented, "One of our participants even came to her research appointment the day before her wedding!" Another team member, Heather Pallister stated, "I helped with the recruitment for the study and it is amazing how fast time flies! I really enjoy my time on the phone with them and hearing their dreams, plans, and stories of their lives."
- ★ "Working with Dr. Levy, who is the principal investigator and team leader of the lowa Fluoride study, is rewarding. He goes the extra mile to the build the bridges," explained Barb Simon. Furthermore, Dr. Levy appreciates everyone's effort from the simple tasks to the complex matters. Everyone plays a vital role and works as a team to keep the study going!
- ★ When we were applying for NIH funding to conduct the bone assessments at age 13 and 15 years, the grant reviewers didn't believe that we could be so successful
 - with keeping participants enrolled and awarded grant monies at a lower level. Yet, we exceeded their projections and demonstrated that the study continues to thrive. Recently, the study was awarded an additional year of funding taking us through October 2018 – a great testimony to the importance of your contributions!
- ★ When Dr. Levy first started working on the lowa Fluoride Study grant, he was a fairly new faculty member with young children. Now his children are 24-33 years of age and he has a 9-month-old grandson!



YEARS

The Numbers Say It All!

To date, we have accomplished:

698	Five-year dental exams
630	Eight-year dental exams
552	Thirteen-year dental exams
465	Seventeen-year dental exams
8,941	Completed and returned IFS questionnaires
4,121	Activity monitor studies
979	Parent bone exams
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
381	Seventeen-year bone exams
329	Nineteen-year bone exams
100	Twenty three wear evens

109 Twenty-three-year exams completed

Meet the Staff



Monica High

Monica is the Iowa Bone Development Study dual energy x-ray absorptiometry (DXA)/peripheral quantitative computed tomography (pQCT) technologist. She is a graduate of Mercy/St.Luke's School of Radiologic Technology in Cedar Rapids and is certified in Mammography as well. She came to the University of Iowa with 20 years of experience in her field. Her family relocated to Solon, Iowa four years ago and she began working for UIHC at the Iowa River Landing location where she helped to implement the DXA scanning. She began scanning for the Iowa Bone Development Study last December. In her free time, she enjoys spending time with her husband and three children, fishing, and crafting.



Eileen Olderog-Hermiston

The Department of Preventive and Community Dentistry at the College of Dentistry welcomes Eileen Olderog-Hermiston. Eileen is a Research Associate and the Coordinator for the Iowa Fluoride Study/Iowa Bone Development Study. Eileen graduated from the University of Iowa with a bachelor's degree in dental hygiene. She has many years of experience as an instructor in the Department of Pediatric Dentistry and as a research assistant with several other research grants. Eileen is a lifelong Iowan and resides in Coralville with her husband and four children. In her spare time, she enjoys cooking, reading, and traveling.

UPDATES

- ★ Our participants now range in age from 21.9 years to 24.9 years old. We continue to be very successful with all aspects of the studies because of your great participation!
- ★ Reliability testing will begin in January. When you return the 6-month study questionnaires to our office, you may be selected to answer a few additional questions by our staff. For those whom we will contact, we appreciate your help with this aspect of the study and you'll receive an additional small incentive for your participation.
- ★ We will be offering text messaging as a new way of staying in touch with the lowa Fluoride Study. Our IFS cell number is 319-499-8010.

Featured Study Findings for the Year 2016

What have we discovered with all of those plaque samples?

Original Research Article

PCR-Based Identification of Oral Streptococcal Species - Banas J, Zhu M, Dawson D, Cao H, Levy S

Plain language summary:

We used the plaque samples from the IFS to study the prevalence and the ascendancy of certain species of bacteria that could be linked to an increased risk of dental decay. Identifying the species of interest is difficult. We developed a streamlined method to aid our identification and that can be used in other studies that require examination of large numbers of samples.

From all those impressions of your mouths, we have made study models to look at mouth shapes. What was discovered?

Original Research Article

Patterns of Morphological Integration in the Dental Arches of Individuals with Malocclusion -Miller S, Vela K, Levy S, Southard T, Gratton D, Moreno Uribe L

Plain Language Summary:

This study sets out to understand how similar the upper and lower jaws are in shape. While it makes sense that the shape of the upper and lower jaws are closely tied together, we found that people who have longer, more projecting upper jaws had a weaker association between the upper and lower jaws compared to individuals with longer lower jaws. This is interesting because it predicts that treatment plans for malocclusion that target the upper jaw should have less of an effect on the shape of the lower jaw, but treatment of lower jaw malocclusion can potentially have a much stronger effect on the upper jaw (either intended or not).

Did the fluoride dietary questionnaires and examination of teeth reveal new findings?

Original Research Article

Timing of Fluoride Intake and Dental Fluorosis on Late-Erupting Permanent Teeth -

Bhagavatula P, Levy S, Broffitt B, Weber-Gasparoni K, Warren J

Plain Language Summary:

Timing of fluoride intake and the development of dental fluorosis, a slight discoloration of the teeth, can affect not only the front teeth, but also the canines, premolars, and molars. The late-erupting permanent teeth (canines, premolars, and second molars) are susceptible for a period from 2-8 years of age. Findings suggest that the 6th year of life is the most critical period for development of fluorosis in late-erupting permanent teeth.

Did the bone and body scans show us any new findings?

Original Research Article

The Relationship between Greater Pre-Pubertal Adiposity, Subsequent Age of Maturation and Bone Strength during Adolescence - Glass N, Torner J, Letuchy E, Burns T, Janz K, Eichenberger J, Schlechte J, Levy S

Plain Language Summary:

Findings suggest a possible influence from higher amount of fat tissue in the body on the timing of puberty and bone strength in teenage girls. However, this is not present to the same extent in boys. Some studies have shown that early puberty is associated with higher bone mass. Future studies will be important to determine whether these findings are sustained in adulthood. Furthermore, the study confirmed a strong association between muscle mass and bone strength during adolescence.

Please visit the lowa Fluoride and lowa Bone Development Study website to find out more about the publications and news articles related to the study. All of this would not be possible without your participation over the last 25 years! Website: **www.dentistry.uiowa.edu/preventive-fluoride-study**





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