Centre for Pediatric Pain Research

Dr. Christine Chambers' Research Team Newsletter

Summer 2010

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What's new in the lab?

It's been a busy year for the Chambers' team in the Centre for Pediatric Pain Research and we would like to thank the more than 200 families who have participated in our research this past year.

Over the last year we have presented our research at local conferences here in Halifax, national conferences in Ottawa, Calgary, and Toronto, and at international meetings in places like Chicago, Kansas City, and Mexico! We have also had 12 articles published in scientific journals, including *Pain*, the *Journal of Pain*, *Clinical Therapeutics*, *Pain Research and Management*, *Journal of Pediatric Psychology*, and *Children's Health Care*. Our students received over \$300,000 in grants and won several awards - Melanie Noel received a Trainee Research Award from the Canadian Pain Society and the Marion and Donald Routh Student Research Grant from the Society of Pediatric Psychology and Meghan McMurtry received a student research award from the Society of Pediatric Psychology.

We've been busy sharing our results with the public. Last Fall, with the H1N1 outbreak, Dr. Chambers was interviewed about how to reduce children's pain during immunization. Stories appeared in the National Post and the Canadian Press, and several live interviews about reducing children's fear of needles aired on the CBC radio. We have also given a series of workshops about how scientists study pain to groups of children and teens at Supernova science camps at Dalhousie University.

We have launched our new website where families, students, and health professionals can learn more about our research - you can check out the latest news on our blog, participate in our research, and find information and resources on pain assessment and pain management.

Participate in our research!

We have several on-going research projects and we are always looking for more participants.

Right now, we are looking for **8-14 year olds**.

Interested in participating? Call **(902) 470-6906** or check out our website for more information!



www.pediatric-pain.ca/content/ Chambers_CurrentResearch



Katie started her PhD in the Dalhousie Clinical Psychology program last fall.

Do you enjoy participating in research? Children and parents' experiences with the cold pressor task

After children and their parents participate in our research we often send home a short survey asking them about their experience. Recently, we summarized surveys from 5 studies using a cold water task in our lab where children are asked to put their hand in cold water for a few minutes.

We found that children and parents rated their overall experience very positively and that children who did this task twice rated their experience even better than those who only did it once. Children said that the best parts of research included, answering questions, having fun and learning, the friendly researchers, and helping others. Parents said that most positive aspects were their child's enjoyment, the interesting research, contributing to science, participating with their child, and the compensation. All of the children said they were happy they had participated and almost all of the parents said they would participate again.

Katie has presented her research at several local, national, and international conferences this year!



Sara was recently interviewed for an article that was published in the August issue of Today's Parent Magazine!

"She thinks I'm weird": Social abilities in children with chronic illness

About 10%-30% of children have a chronic illness (e.g., juvenile arthritis, inflammatory bowel disease) and this can affect their social abilities in many ways. For example, they may not be able to participate in activities at school or with friends and may miss out on social events due to doctor's appointments; however, very little research has looked at social abilities of children with chronic health conditions.

In this study, Sara asks 8- to 12-year-old children, some who are healthy and some who have a chronic illness (juvenile arthritis and inflammatory bowel disease) what they would do in several common social situations. She also asks them questions about the different types of thinking skills that influence the way children act in social situations. We are almost finished collecting data for this study and we are excited to see what the results will show – stay tuned for our conclusions!

> Sara's research is funded by the Canadian Child Health Clinician Scientist Program

The spit study

Kristin, a Dalhousie medical student, completed a summer studentship with us and studied how a hormone called cortisol, which can be found in saliva, might be related to pain in children.

In this study, 8-12 year olds were asked to give us a sample of their saliva both before and after they put their hand in a cooler of cold water for a few minutes. She was looking to see if cortisol levels changed in 8-12-year-old children after they had their hand in cold water. What we found was that cortisol levels did not change and weren't related to how much children said that the cold water hurt. This might be because children were excited to be in the lab, which affected their levels of cortisol.



This research was featured on "Housecalls" for the Live at 5 News and on CTV's Breakfast Television.

What to do when your child is having a painful medical procedure

- **Use distraction** (e.g. conversation unrelated to the procedure, humour, toys, games, pretend play, books, storytelling, or music).
- Make suggestions on how to cope (e.g. deep breathing, blowing bubbles or pinwheels, cuddling, massage, hand-holding/squeezing, counting, or relaxation exercises).
- **Prior to the procedure, you can use a numbing product like EMLA® or AMETOP Gel**[™] (available over-the-counter at most pharmacies) to lessen pain.



Young children use and understand the word "hurt" best.

Hurt, sore, ouch, owie, boo boo, pain, or ache: Which word is best?

When do children learn and use different types of words to describe pain and is this different for children who have chronic medical conditions, like cancer or diabetes?

Tessa, who now works as a speech-language pathologist in NS, found that parents reported that their children used and understood the word 'hurt' the best and were not as familiar with the words 'pain' and 'ache.' Also, when children who had a medical condition were compared to those that did not, there weren't any differences in children's use or understanding of any of the pain words. So, the next time you or your doctor is asking questions about your child's pain, the word 'hurt' might be the easiest for your child to use and understand.

Look for our next study when we'll be recruiting parents of young children to respond to an online survey about their children's everyday pains!

Are you okay? Everyday pains in young children

As every parent knows, children hurt themselves on a regular basis. Minor everyday bumps and scrapes are the most common causes of pain in young children. Although most of these everyday pains are not serious, the number of times they occur make them important and may help children learn how to respond to pain.

In this study, 12-32 month olds and a parent came to a 2 hour play party at a local indoor playground. Parents filled out a few ques-

tions and we watched children as they played. We found that, on average, young children have an everyday pain about once every 1-2 hours that's a lot of bumps and bruises! Parents generally checked in with their child ("are you okay?"), took them out of the play setting, or comforted them with a hug or kiss.



This research was funded by the Nova Scotia Health Research Foundation (NSHRF).

Don't worry: Children's opinions about parental reassurance



In August, Meghan will be working at the University of Guelph as an Assistant Professor! Getting a needle is both painful and frightening for many children and their experience is shaped by the behaviour of adults around them. Surprisingly, when parents reassure kids during medical procedures it makes kids feel worse.

In this study, Meghan compared reassurance (e.g. "it's okay") with distraction to figure out whether children think their parents are worried when they reassure. One hundred 5-10-year-old children and their parents were filmed during blood draws. Next, children watched videos of parental reassurance and distraction from the blood draws and rated their parents' emotions. Finally, children watched videos we created and gave more ratings. In the meantime, the parents answered some questions.

We found that children think parents are more worried when they reassure versus distract. But, children also paid attention to facial expression (especially a happy facial expression!) and vocal tone

when rating adult emotions. Thank you very much to the families and the staff in the blood draw lab!

Meghan was interviewed about this study by Discovery News!

http://news.discovery.com/human/ children-parents-pain.html

Can I get you a band-aid? Children's expressions of empathy for others

While playing, children have many chances to watch and learn how others, like their parents, respond to pain.

In this study, Nancy examined how toddlers show their concern for others. During play, a researcher pretended to hit herself with a plastic hammer (expressing pain) and pretended to break a toy (expressing sadness). The 18-36 month olds in our study

showed a lot of really interesting responses ranging from becoming upset themselves to ignoring the researcher's distress entirely to providing help or comfort (e.g., offering a Band-aid, trying to fix the toy, saying, "It's ok").

We were surprised to discover that children were actually more likely to show concern for the researcher when she was sad than when she was in pain. Thank you to all of the families who participated in this study!



Nancy defended her thesis in May and is working at Cincinnati Children's Hospital during her internship next year.

This study was published in the journal *Children's Health Care* in July of 2010.

What healthy children think about friends with a chronic health condition

Research has shown that children with chronic health conditions often have difficulties making friends. Two reasons for their difficulties may be how noticeable the child's condition is and whether the condition can be explained medically or not.

In this study, Mandi presented 50 healthy children between the ages of 8 and 12 year old with stories depicting children with various health conditions and asked them to tell her how much they think they would like the child in the story.

Mandi's findings were very interesting – she found that children with visible, non-medically explained conditions were more likely to be perceived negatively by healthy children. This is important to know,

because these negative opinions and attitudes could lead to more serious friendship problems if they're not addressed.





Erin defended her thesis in July and will be working at BC Children's Hospital for her internship next year.

What about dads?? Comparing what mothers and fathers say when their children have pain

We know that what mothers say when their children have pain is very important. For example, when mothers use distraction (e.g., "Let's talk about your birthday party"), children experience less pain.

In her study, Erin asked, "What about dads?" She investigated whether mothers and fathers said similar things when their children had pain. Each 8- to 12-year-old child in this study completed a cold pressor task, once with his/her mother in the room and once with his/her father in the room. This task is a safe method for studying pain that involves putting the hand in a container of cold water.

Erin found that mothers and fathers used similar amounts of attention and distraction when their children had pain. Thank you to all of the mothers, fathers, and children who took part in this study!

Rebecca is now a Masters student in School Psychology at Mount Saint Vincent University and is continuing her research in our lab.

Spreading awareness about chronic illness to children -Who should it come from?

Some children have an illness that other children may not understand. In this study, we wanted to find out the best way to tell children about other children who may have a chronic illness.

In this study, 8 to 12 year olds came into our lab and watched an informational video about arthritis featuring a 12-year-old child who has arthritis or a doctor from the IWK Health Centre. Next, we asked the children how they would respond if a child with arthritis were in their class.

We have just finished collecting data for this study, and found that children's thoughts about chronic illnesses, like arthritis, are more easily changed after learning about the illness from a doctor rather than from a friend.

Thank you to all of the families who participated in this study!

"My needle was really scary!" Children's memory for painful medical procedures

Pain isn't over for children when the needle is over. What children remember about painful medical procedures can play a role in how they cope with needles the next time.

In this study, Melanie and Meghan videotaped children getting blood draws at the IWK. They asked them how painful and scary it was immediately after the needle and then 2 weeks later over the telephone.



Children who had more pain during the needle remembered the needle as being even scarier 2 weeks later than they did immediately after the needle was over. Children also remembered more about the procedure when the nurse giving the needle said things to distract them. Thank you so much to the families who helped make this research possible!

Melanie's research was published in the *Journal of Pediatric Psychology* in July 2010!



Lindsay received her PhD from Dalhousie in 2009 and is currently working as a psychologist at the IWK Health Centre.

Can young children use a faces scale to rate pain?

Faces scales are a common way for children to tell us about pain. They involve picking 1 of 6 pictures of faces showing different amounts of pain. Most children aged 5 and older can use these scales. For 3 and 4 year olds, it would be helpful to have a way to identify which children can understand and use them.

In this study, we tested different tasks to see if we could find a way to predict which children can accurately use faces scales. Two hundred children (aged 3 to 7) who were scheduled for day surgery completed 4 tasks before their operation. They included choosing the middle-sized cup among 3 cups and rating pain experienced by storybook characters. Each child and their parent rated the child's pain before surgery and for 3 days after using a faces scale.

As expected, older children were better at using faces scales to rate their post operative pain than younger children, but we found that none of the tasks helped us predict children's ability to use the faces scale better than just knowing their age.

We are grateful for the collaboration with Dr. Carl von Bayer

from the University of Saskatchewan on this study!

Faces Pain Scale—Revised (FPS-R)



"These faces show how much something can hurt. This face [point to left-most face] shows no pain. The faces show more and more pain [point to each from left to right] up to this one [point to right-most face] – it shows very much pain. Point to the face that shows how much you hurt [right now]."

Score the chosen face 0, 2, 4, 6, 8, or 10, counting left to right, so '0' = 'no pain' and '10' = 'very much pain.' Do not use words like 'happy' and 'sad'. This scale is intended to measure how children feel inside, not how their face looks.

Hicks, C. L., von Baeyer, C. L., Spafforda, P. A., van Korlaarc, I., & Goodenough, B. (2001). The Faces Pain Scale – Revised: Toward a common metric in pediatric pain measurement. *Pain, 93*, 173-183. See also www.painsourcebook.ca This figure has been reproduced with permission of the International Association for the Study of Pain® (IASP®). The figure may not be reproduced for any other purpose without permission.

Centre *for* Pediatric Pain Research

SCIENCE HELPING CHILDREN

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The most important people in our research are the people who volunteer their time to take part in our studies. We would like to send a HUGE THANK YOU to all of you!

If you had fun taking part in one of our studies and know someone who would also like to, please give them our phone number, website address, or e-mail.

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DALHOUSIE

UNIVERSITY Inspiring Minds



Social Sciences and Humanities

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Canada Foundation











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Junior Scientist Challenge

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Try and find all of the junior scientist words hidden in this puzzle!!!

> SCIENTIST PAIN RESEARCH OUCH OK DOCTOR NEEDLE NURSE HEALTHY DISTRACTION LABORATORY