

## COPS FOR KIDS AND THE AUSTRALIAN PAIN SOCIETY: WORKING TOGETHER TO SUPPORT RESEARCH INTO PAIN IN CHILDHOOD

[Cops for Kids](#) (CFK) began in 2006 when a group of police officers in Port Adelaide, South Australia, wanted to support the sick children and families of their colleagues. These officers began donating a small amount of their salaries to the children's charities that supported these families. Since an initial donation of \$500 in 2007, CFK has grown to more than 1,900 members and donated more than \$1,200,000 to South Australian children's charities.

In 2016, CFK was approached by Anne Burke—[Australian Pain Society](#) (APS) South Australian Director at the time—with a proposal to fund a clinical research grant into ways to manage paediatric pain by tapping into the established [APS Pain in Childhood Special Interest Group \(SIG\)](#). This was a ground-breaking moment for CFK; an opportunity to pioneer clinical research that directly benefited children. Together with Tracy Hallen (Project Officer at the APS Secretariat), Anne helped guide CFK to form a collaboration with the APS and the [Australian Pain Relief Association](#) (APRA) to partner in the [APS-APRA-CFK Clinical Research Grant Program](#).

As part of the APS-APRA-CFK Clinical Research Grant Program, CFK committed \$90,000 over three years to support clinical research that explores various aspects of paediatric pain management and will ultimately lead to improvements in health outcomes for children. It is hoped that the research supported by this grant program will act as a platform for future research

and continue to influence healthcare development long after the initial donations.

### Managing pain in children with cerebral palsy

For [Dr Adrienne Harvey](#)—a paediatric physiotherapist from the Murdoch Children's Research Institute in Melbourne and recipient of the inaugural APS-APRA-CFK#1 Clinical Research Grant—it was a case of being in the right place at the right time. "I'm new to the pain field—my research has focused on children with cerebral palsy and other disabilities. We had recently started a program of research into pain in children with cerebral palsy when someone alerted me to this grant scheme. I thought it would be ideal for me to apply for" said Harvey.

[Cerebral palsy](#) is a physical disability that affects movement and posture and is the most common physical disability in childhood. Pain is a common symptom in children with cerebral palsy, particularly in those with severe motor impairments. Harvey and her team—which included doctors physiotherapists, and occupational therapists from the [Royal Children's Hospital](#), the [Children's Hospital at Westmead](#), the [Women's and Children's Hospital](#) in Adelaide, and the [Queensland Children's Hospital](#)—set out to study the effects of a commonly used medication called [gabapentin](#) in children with cerebral palsy.

“We’ve been using gabapentin to treat children with cerebral palsy for a long time and know that it works from a clinical perspective, but there have been no studies specifically in the cerebral palsy population for this drug”, explained Harvey. “The APS-APRA-CFK#1 Clinical Research Grant allowed us to undertake a pilot study investigating the effects of gabapentin for managing pain in this paediatric population.”

Thirteen children with dystonic cerebral palsy were recruited over a 15-month period and were prescribed gabapentin using a standardised dosing regimen. “We found that gabapentin decreased pain-related behaviours and dystonia while improving wellbeing and comfort”, Harvey reported. “A number of families told us that for the first time their child was comfortable and sleeping through the night—not constantly crying out [due to their pain]. One family reported that their child started vocalising during the study—he was six and had never previously done this before.”

While Harvey acknowledges that these initial results must be interpreted with caution, she sees the potential benefits this treatment could have. “I think this will be a really key paper for clinicians around the world to refer to as it seems to be effective and have tolerable side effects compared to a number of the other medications we use in children with cerebral palsy. We’re just trying to improve the lives of these children and these results will be a key plank in guiding future studies that can potentially be incorporated into routine clinical care. We’re very appreciative of the funders for allowing us to do this study.”

### Reducing needle pain and distress in children

[Associate Professor Tasha Stanton](#)—a National Health & Medical Research Council (NHMRC) Career Development Fellow

from the University of South Australia and recipient of the APS-APRA-CFK#2 Clinical Research Grant —was drawn to the APS-APRA-CFK Clinical Research Grant Program as it provided the opportunity to promote a novel collaboration with [Associate Professor Melanie Noel](#) from the University of Calgary and the [Alberta Children's Hospital Research Institute](#). “I've never worked in the area of paediatric pain, so it's lovely to have the opportunity to get a grant that lets you do a focused research project in that area”, said Stanton.

Stanton and Noel set out to reduce the fear and pain associated with needles in children in the context of receiving a flu vaccination. “Bad experiences with needles as a child can result in significant needle-related fear when they are older”, explained Stanton. “This can lead to things such as vaccine hesitancy—meaning you can potentially get outbreaks of preventable diseases—but also a more general avoidance of medical encounters because they don’t like needles.”

“We’re looking at two specific interventions as part of the study—a positive memory reframing intervention that tries to reframe the pain associated with needles, and a sensory strategy which aims to see if we can actually make the needle hurt less”, Stanton described. Following on from [previous research into memory-reframing interventions](#) led by Noel, the first intervention aims to increase self-efficacy—the belief in our innate ability to achieve goals—and uses cognitive strategies to reframe the pain: “Let’s be positive, let’s be realistic, and let’s be brave.”

The sensory strategy builds on [earlier research from Stanton](#) showing that when we divide our attention between two areas of skin, applying a stimulus in-between these areas makes it hurt less compared to when attention is not divided. Stanton and Noel are turning this sensory intervention into a game with these children to see

if it works. Children recruited as part of the study are allocated into one of four groups—memory reframing, dividing attention, a combination of the two, or a group where they do not receive either intervention (but receive usual, best standard care strategies implemented by the nurse administering the vaccine).

Since starting the pilot study Stanton and Noel have recruited 37 child-parent dyads but are continuing to collect data this year to better examine the effects of the two interventions. “The initial results from our blinded analysis are really promising. Regardless of the group the children are in, we see a reduction in fear and [pain-related catastrophising](#) immediately after the needle compared to the reported levels before the children receive their injection. We see a further reduction two-weeks after the injection”, Stanton reported.

“We didn’t see any overall effect on pain in our initial analysis, but we see some initial evidence that there is a specific effect of intervention group—that is, only certain interventions lead to reductions in pain ratings after the child receives the injection”, Stanton explained. “Ideally we would have 15 child-parent dyads per group, which would give us more robust pilot data that could help us to plan better testing in a larger setting.” These initial results suggest that implementing small changes to the way children receive vaccinations could have significant impacts on their experience of the needle. This could have important influences on the development (or avoidance!) of needle-related fear.

### Testing an activity monitoring app in children

The recipient of the final APS-APRA-CFK#3 Clinical Research Grant—[Dr Nicole Andrews](#), an occupational therapist and clinical researcher from the University of Queensland—saw the grant scheme as an

opportunity to test whether an adult pain management approach could be modified for use in children. “We had just finished a really successful implementation of the [Pain ROADMAP app](#) in adults and there were a lot of paediatric clinicians around Australia that really wanted to use it. But we knew we would have to adapt the app for use in children”, explained Andrews.

Pain ROADMAP is a mobile health platform with an accompanying app. People wear an activity monitor—like a Fitbit—which transmits data to an online portal where clinicians can analyse and review the activity related data. “Basically, the platform monitors activity in people with chronic pain and you can see really clearly which activities have caused an exacerbation in pain. As a clinician, you can then give specific feedback on how your patients can adapt those activities to eliminate pain exacerbations or flare ups”, Andrews described.

“There were really promising results from the pilot [in adults]”, said Andrews. “People were monitored for three one-week periods and received feedback over a three-month period. At the end of the three months basically no-one was getting activity related pain exacerbations or flare-ups any more. Their pain really stabilised, which resulted in increased productivity, decreased opioid use, and improvements in mood.”

Andrews and her team—including clinicians from the Queensland Children’s Hospital, the Royal Melbourne Hospital, and the [Perth Children’s Hospital](#) and a software engineer from the [CSIRO](#)—are currently determining how the app will be gamified for use in children. “A gamified version would require more graphics, built-in rewards, and opportunities for interaction”, Andrews said. “The aim of the research is to provide the justification of why you need to gamify an app for kids—which no one has

actually done. It is just assumed that if you are going to make an app for kids you need to have all these special features in it.”

“This small grant is mainly focused on developing a modified version of the app, and doing a really small trial where people get randomised into either the modified or original version of the app. We’re really interested in seeing if gamifying an app actually works—are we going to get a better compliance from a paediatric population with a modified version, or could they just use an adult app?” Andrews will provide an update on her research at the [40th Annual Scientific Meeting of the Australian Pain Society](#), which will be held in Hobart from April 5-8, 2020.

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**TRACY HALLEN AND DR ADRIENNE HARVEY**



**DR ADRIENNE HARVEY, DR ANNE BURKE AND ASSOCIATE PROFESSOR TASHA STANTON**



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