innovative
Behind this presentation is a research team striving for excellence in oral health

The Hall Technique
What is the Hall Technique?

- Method for managing carious or hypoplastic primary molars using SSCs.
- It involves cementing the crown onto the tooth GIC, without the use of local anaesthesia, caries removal, or crown reduction.
- This technique is not an easy, quick fix solution to the problem of the carious deciduous molar.
- Careful case selection, high level of clinical judgement, and good patient management.

= No anaesthetic  No drill

Innes & Evans, 2011
Development of the Hall Technique

- Scotland 1998 audit found one dentist placed extraordinary number of SSCs on children
- A pilot study was then carried out to check this technique
- found to be acceptable to clinicians and their patients (Evans et al, 2000)
- A further clinical trial in Scotland (Innes & Evans et al 2007, 2011) compared Hall crowns placed by dentists with traditional restorative techniques
  1. Children, parents and their dentists preferred the Hall technique to conventional restorations
  2. The Hall technique was more effective than conventional restorations placed
     - At 4 years, 92% of the teeth with Hall Technique were successful compared to 52% of the teeth with conventional restorations.

Dental Health Services Victoria
Oral Health for Better Health
The Hall Technique has the potential to:

• Improve compliance in young children and reduce anxiety associated with dental treatment
  – behavioural management technique
• Increase the use of SSCs by clinicians
• Avoid negative child health impacts and costs of repeat treatment
• Reduce tooth extractions and extensive treatment
• In conjunction with a preventive program will reduce hospital admissions for dental treatment under general anesthesia
Phase 1 Objectives:

1. To determine the success of the Hall Technique used to manage carious lesions, affecting primary molars, and extending to less than the outer half of dentine (i.e., with no pulpal involvement) in a group of 3 to 5 year old preschool children at high risk to dental caries attending a public oral health clinic.

2. To determine the acceptability of the Hall Technique to the public oral health practitioners, the preschool children and their primary carers.
Phase 1 Methods:

- 3 - 5 years-old, no relevant medical history
- One or two primary molars with caries within the outer half of dentine and no pulpal symptoms or pathology on radiograph
- Informed consent from parent/carer and acceptance of treatment by child
- All dental staff inducted into the study:
  - Protocol
  - Case selection - ICDASII and radiography
- 4 dentists were trained in the Hall Technique and calibrated in ICDASII
Recruitment

160* screened

125 not suitable

Recruitment first stage
35 considered suitable

Final recruitment
18 children considered suitable

14 children HT
Crowns placed
(N=22)

4 children did not have HT crowns placed
Phase 1 Early results

- Average time for Hall Technique procedure 5.27 minutes
- OVD generally increased by 1.5 to 2mm and returned to baseline by 30 days
- Clinicians reported positive behavior for all children who had HT crowns placed.
- Clinicians reported that the HT was a much easier procedure to perform than a conventional restorative techniques and children generally experienced low or no discomfort
- Comfort levels correlated with parent reports of child’s experience
# Parent/carer Acceptability

<table>
<thead>
<tr>
<th>THEMES</th>
<th>COMMENTS from questionnaire</th>
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<tbody>
<tr>
<td>Pain Free</td>
<td>“pain free, mild amount of discomfort”</td>
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<tr>
<td>Quick and easy</td>
<td>“very quick to put on compared to filling this is good for little kids who don’t stay still for long”</td>
</tr>
<tr>
<td>No anaesthetic</td>
<td>“no need for weird numb feeling”</td>
</tr>
<tr>
<td>No drill</td>
<td>“because when he hears the noise of the &quot;machine&quot; he gets anxious”</td>
</tr>
<tr>
<td>Child can feel sense of achievement</td>
<td>“showed everyone proudly, very proud that she had achieved getting crown”</td>
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# Developments

## ICDAS II And Radiographic Assessment Confirmation

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<thead>
<tr>
<th>Tooth</th>
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<th>Lower Right</th>
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<td>MODBL</td>
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<td>(Y/N)</td>
<td>(Y/N)</td>
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<tr>
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### Lower Right

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### Reason To Exclude From Study

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[Image of the form]
The Hall Technique
Sealing tooth decay with stainless steel crowns

What is a stainless steel crown?
Stainless steel crowns (SSCs) are metal caps used to restore badly decayed baby teeth. SSCs:
- are the same size and shape as a tooth
- last more than four years (compared to other fillings which last less than three years in baby teeth)
- are easy to clean
- contain only safe metals
- cover the entire tooth.

What is the Hall Technique?
The Hall Technique is a process of applying an SSC to a baby tooth. The Hall Technique seals decay and helps stop it from progressing. The tooth does not need to be made numb, does not need to be drilled and the whole thing only takes a few minutes.

How is it applied?
There is no drilling needed to apply a Hall Technique crown and your child will not need their mouth numbed. The crown is fitted on the tooth and the child helps to place the crown by biting down on it.

What happens afterwards?
After a Hall Technique crown is placed, your child may find that biting feels unusual. This feeling will return to normal in a few days. Their gums may also feel tight at first but this will go away quickly.

Your child’s gum may look blue around the tooth with the crown. This is just the colour of the metal sitting under the gum.

It is important that your child still brushes their teeth.

Avoid giving your child sticky foods (such as chewing gum) for the first few days after the crown is placed as they may pull the crown out of place.

How can I help my child to take better care of their teeth?
Avoid giving your child foods that are high in sugar and give them water instead of soft drinks, cordials and juices. A healthy diet is essential to a healthy mouth.

Make sure your child brushes their teeth twice a day with a fluoride toothpaste and has regular dental check-ups.

For more information visit www.dhsy.org.au

Hall Technique crowns will fall out when the baby tooth falls out naturally.

Will capping a tooth stop the decay?
A Hall technique crown covers and protects all of the tooth surfaces. The crown seals any tooth decay and helps stop it from progressing.

A crown will not protect your child’s other teeth from decay but will prevent new decay from occurring on the tooth with the crown.
Media

18 Dec 2012 Herald Sun Melbourne & Adelaide Advertiser (News Ltd)

Steely smiles dodge the drill

CHILDREN with tooth decay could soon have access to a painless, less invasive and cheaper way to skip the drill.

An Australian-first pilot study is trialling using steel crowns to seal in decay in baby teeth, avoiding the need for dentists to use a drill, needle or general anaesthetic.

The Dental Health Services Victoria trial involves avoiding the crowns which dentists

Lucas van den Berg

Teeth crowns are little hats for their teeth — on the tooth.

Pediatric dentist, Prof Harry Calka said stainless steel crowns had been used in dentistry for more than five years, but using them to seal in decay in baby teeth was a new technique.

Sealing the decay in the teeth aims to stop the existing decay spreading prevents it spreading to other teeth and reduces stress.

Prof Calka said it was hoped the trial technique could mean dentists did not have to cut out the decay, cut the tooth back or give the child a local or general anaesthetic.

The steel crown trial is being conducted on baby molars of Victorian children aged three to six.
The Bite Magazine
March 2013 – national circulation
In an Australian-first, Dental Health Services Victoria is investigating a painless method of treating tooth decay in young children.

A research team, led by Professor Hanny Calache, is conducting a pilot study using stainless steel crowns to seal decay in young children’s teeth without using a needle or a drill.

“We believe this technique can make a real difference,” Prof. Calache, a pediatric dentist said. He said children do not experience any discomfort during the procedure. It takes less than 15 minutes to complete and can be provided at a reasonable cost.

Stainless steel crowns have been in use for more than 60 years, but this is the first time in Australia that they have been investigated to seal tooth decay in preschool aged children. Known as the Hall Technique, the method has been tested in Scotland in primary school aged children with much success over a five year period.

Prof. Calache, Director of Clinical Leadership, Education and Research at DHSV, said unfortunately it was not unusual for very young children to suffer decay in their first teeth.

He said this problem was usually managed by

Dr Deborah Cole, the Chief Executive Officer of DHSV, said preventing dental decay was a priority as it was the most preventable cause of hospital admissions in young children in Victoria. She said tooth decay was one of Victoria’s most prevalent health problems, with more than half of all children affected.

If shown to be successful this technique, combined with appropriate preventive care, could significantly reduce the need for children to be hospitalised for the management of tooth decay.

The stainless steel crown is fitted over a toddler’s tooth and remains there until the tooth falls out naturally. By completely covering the decay, the crown prevents existing decay from progressing and new decay from developing on another part of the tooth, therefore preventing further problems, such as abscesses.

“The beauty of this is that the baby tooth treated in this way is unlikely to require further treatment after the crown is put in place and the crowned tooth functions just like an unaffected tooth,” Prof Calache said.

Dr Cole said DHSV was passionate about improving Victoria’s oral health and ensuring greater levels of access and...
What next?

• Clinical review of all teeth with Hall Technique crowns at 6 and 12, 24 and 36 months with radiographic review at 12, 24 and 36 months

• Secured funding for next 3 years

• Phase 2
Phase 2 Objectives

1. To determine the success of the Hall Technique used to manage carious lesions, affecting primary molars, and extending no further than the middle third of dentine (i.e. with no pulpal involvement) in a group of children 3 to 7 years of age at high risk to dental caries.

2. To determine the acceptability of the Hall Technique to the public oral health practitioners, the children and their primary carers.

3. To assess the cost effectiveness of the Hall Technique compared to multi-surface restorations in the management of carious lesions affecting primary molars.

4. To develop and implement policies, clinical guidelines and a statewide training program in the Hall Technique for oral health practitioners.
Phase 2 Hall Technique Research

- 3-7 year olds in 3 community dental agencies
- Training oral health and dental therapists as well as dentists
- Utilising online training capability of DHSV
- Updating data collection tools on Titanium
- Including matched control group from Titanium
- Radiographic criteria widened
- Introducing Facial Image Scale for assessment of child’s acceptability of the HT
- Involved more investigators including interstate collaboration, and renewed advisory group, including international colleagues
Funding and Sponsorship

Phase 1: DHSV Research and Innovation Grant
Phase 2: William Buckland Foundation, ANZ Trustees

With thanks to 3M