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Crosshouse hospital uses ditto™ in their orthopedic unit to lower kids' anxiety during procedures



I have been using ditto™ when having my dressings changed. ditto™ really helps when you're trying to put your mind off any pain that you have to go through..."

James, age 10



We are excited to incorporate the ditto™ into our patient care routine," said Karene Baird, an Orthopedic Specialist Nurse at the facility.

"Using the ditto™ to ease anxiety in pediatric patients is helpful not only to improve the patient's outcome but helpful to clinicians so they can best perform a procedure."



Injured child!

75% reduction in pain.

Breakthrough medical device reduces treatment time by 30% and healing time by 20%. Trial it in your clinic at no charge!



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The breakthrough device that reduces pain, speeds healing and cuts health costs

Until recently, diversionary therapy has been an art — albeit one with undeniable benefits.

Today, as a result of years of work (and 8 randomised clinical trials), medical professionals have both clinical validation of diversionary therapy and a medical device that delivers consistent and verifiable outcomes — with significantly greater efficacy and lower cost than traditional methods.

This medical device is called ditto™.

ditto™ is a hand-held multi-media device that uses diversionary therapy to reduce pain and anxiety, and improve healing times for traumatised children in the clinical environment. Developed in collaboration with research and hospital partners, ditto™ maximises distraction and diversion through educational segments and immersive challenges.

Clinical case studies and trials have shown ditto™ to reduce treatment times for children by 30% and healing time by 20%.

Call for your free ditto™ trial

Diversiónary Therapy Technologies has multiple sets of trial units in rotation in the USA, UK and Australia. If you'd like to trial a device in your clinic, contact us today and we'll arrange to send one out.



Ten reasons to use ditto™

- 1 ditto™ is clinically proven through randomised trials.
- 2 ditto™ improves healing times by 20%.
- 3 ditto™ reduces pre- and post-treatment anxiety.
- 4 ditto™ reduces the pain children feel by up to 70%.
- 5 ditto™ increases health professionals' productivity by up to 25%.
- 6 ditto™ allows administrators to do more with the same resources.
- 7 ditto™ is engineered for clinical use.
- 8 ditto™ educates as well as distracts children.
- 9 ditto™ outperforms other similar pain-management devices.
- 10 ditto™ meets infection control standards.

Anxious children are more difficult to treat

The clinical environment can be an intimidating, confusing and frightening experience for young children who are ill and need to undergo medical or surgical treatment.

In the short-term this inadvertently heightens their perception and experience of post-operative pain. In the longer-term it can cause a range of post-trauma emotional and behavioural problems such as bedwetting and anti-social behaviour.

Anxious and stressed children also impose costs on the health system: surgical treatments can be cancelled or delayed. Even ordinary medical treatments, such as dressing changes, take longer.

ditto™ employs diversionary therapy to alleviate the anxiety responsible for these problems.



ditto™ employs diversionary therapy to alleviate the anxiety"



Unique form factor and appearance is designed to engage children

Design allows children with impaired fine-motor skills to play without anxiety

Dedicated sponsorship panel for donating organisation

Docking station ensures device is always charged and housed where it should be

Lightweight, rugged and waterproof

Dual headphone port for child and parent

Easy clean and infection-control compliant

No value outside the clinical environment (minimising the likelihood of theft)

Intuitive design allows children to pick it up and use it straight away

Distract and educate with stories, games and information



Hospital Procedural Preparation stories educate the child about hospital procedures.



Look and find Stories get the child to help a character progress through a narrative by finding hidden items.



Interactive Games involve navigating an object or character through an obstacle course collecting rewards along the way.

How ditto™ works

ditto™ is a rugged multi-media tablet that's waterproof, easy to charge and which engages, distracts, educates and comforts children through interactive digital play. In fact, everything from avatar design, 3D interaction, colours and parental involvement is optimised to maximise immersion, and thus anxiety- and pain-management.

Because it's immersive, ditto™ distracts the child's mind from the procedure they're having, or about to have.

Because it's intuitive and easy for even children with impaired fine-motor skills, it distracts the patient not the care giver.

And because it's educational, it removes the uncertainty about clinical procedures that can elevate anxiety.

The clinical evidence for ditto™

Controlled, randomised trials prove ditto™ measurably and significantly reduces pain, distress and anxiety in children in the clinical environment, improves the productivity of medical professionals and delivers substantial cost benefits to health administrators.

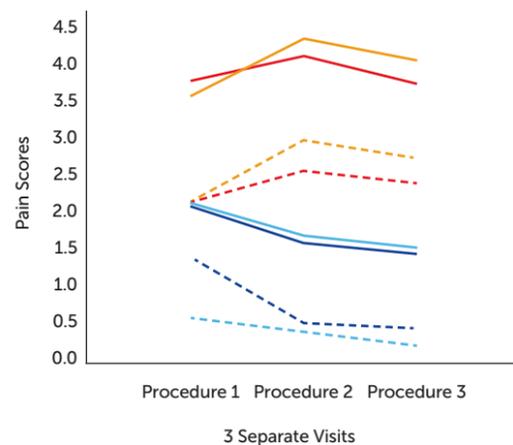
Clinically proven pain and anxiety reduction

The Royal Children's Hospital Brisbane Centre for Burns Research recorded children's pain and anxiety levels during burns dressing application and removal over three separate outpatient visits.

Children watching Procedural Preparation content on ditto™ recorded the lowest pain and anxiety scores before the procedure. ditto™ with Distraction content produced the lowest pain and anxiety scores during the procedure.

Another orthopaedic study of 60 children found ditto™ had a significant (p<0.05) effect in reducing child and clinician pain reports during cast application and removal, and care giver reports of child anxiety during these procedures.

Pre-Procedural and Procedural Child Pain Report for Dressing Application and Removal over 3 Separate Visits



Pre-Procedural
 - ditto™ Procedural Preparation
 - ditto™ Distraction
 - Playstation Portable™
 - Standard Distraction

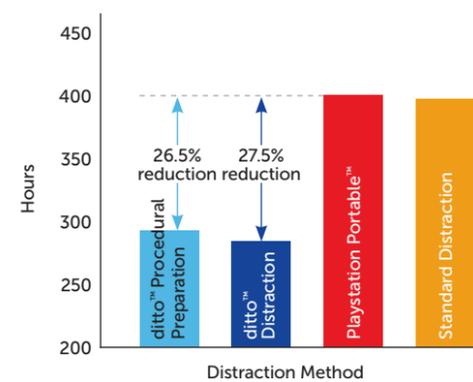
Procedural
 - ditto™ Procedural Preparation
 - ditto™ Distraction
 - Playstation Portable™
 - Standard Distraction

Clinically proven productivity improvements

The same study revealed that ditto™ Procedural Preparation increased clinic efficiency and reduced a clinic visit to remove and apply a burns dressing from a 60-minute visit to one lasting only 45 minutes.

Children using ditto™ Procedural Preparation take between 24% and 29% less time to treat. Children using ditto™ Distraction take between 21% and 34% less time to treat compared to standard distraction methods.

Annual hours required to complete dressing changes for 500 new patients (3 dressing changes per child)



Clinically proven faster healing

With ditto™, the total healing time for burn injuries measured in the length of treatment dropped from 18 days to 15 days — a 20% improvement over current standard practice.

Annual cost savings (based on healing of 600 new acute burns)



Cost savings are based on reduced staff hours and reduced use of dressing consumables

Clinically proven cost savings

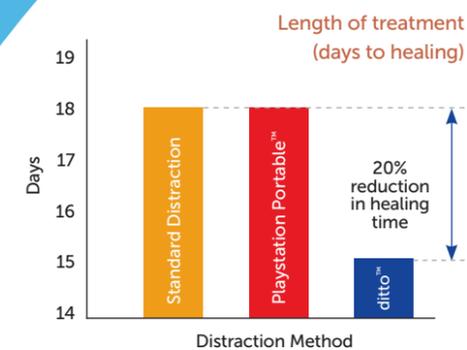
Queensland Health's Royal Children's Hospital analysed ditto™'s cost-effectiveness. Their analysis revealed ditto™ significantly cuts the cost of treatment for both hospital and family.

ditto™ reduced the total costs of treating a child until healing (including nursing staff costs and dressing consumables) by \$76.59.

Faster treatment and faster healing time cut total annual costs (including nursing staff costs and dressing consumables) by \$45,952 compared to standard methods of distraction — a saving of almost 25%.

By comparison, use of a Playstation Portable reduced costs by only \$6,516.

Cost-benefit analysis that takes into account includes initial purchase price and annual service costs indicates ditto™ would save \$461,740 over a 10-year period.



Papers referenced

1. Miller K, Rodger S, Kipping B, Kimble RM. A novel technology approach to pain management in children with burns: A prospective randomised controlled trial. Burns. 2011;37(3):395-405.
2. Miller K, Rodger S, Bucolo S, Greer R, Kimble RM. Multi-modal distraction. Using technology to combat pain in young children with burn injuries. Burns. 2010;36(5):647-658.
3. Mott J, Bucolo S, Cuttle L, Mill J, Hilder M, Miller K, et al. The efficacy of an augmented virtual reality system to alleviate pain in children undergoing burns dressing changes: A randomised controlled trial. Burns. 2008;34(6):803-808.
4. Miller K, et al. Cost Effectiveness Analysis of ditto™, November 2010 (to be submitted for publication 2011).



User case study: ditto™'s effect on pre and post-operative anxiety

This study investigated the effect of ditto™ on pre-operative anxiety using a randomised controlled trial of 60 children (aged 5 to 12 years) requiring a general anaesthetic surgery.

Participants were randomised to either (1) a technology based Multi-Modal Distraction device (ditto™) for preparation or (2) standard preoperative preparation prior to their surgical procedure.

Anxiety ratings, using the Modified Yale Preoperative Anxiety Scale, were collected by blinded assessors on presentation to the hospital, in the operating room holding bay and on anaesthetic induction.

Children self-reported using a fear thermometer at presentation and in the holding bay.

Results: Significant reductions ($p < 0.05$) in anxiety and fear were reported for children in the wait period and anaesthetic induction using ditto™ for pre-operative procedural preparation compared to standard hospital procedures.



...reducing pain, improving clinical productivity and speeding-up healing."



User case study: Combatting pain in young children with burn injuries

A prospective randomised control trial of ditto™ was completed in a paediatric tertiary hospital Burns Outpatient Clinic. The trial studied 80 participants over their first three dressing changes. Pain was assessed using validated child report, caregiver report, nursing observation and physiological measures.

Results: ditto™ significantly ($p < 0.05$) relieved reported pain and reduced time to change dressings compared to standard distraction and video game distraction. Results held true in subsequent dressing changes. The use of ditto™ as a preparatory or a distraction tool in an outpatient burns clinic offered superior pain reduction across three dressing changes to children when compared to standard practices or hand held video games.



User case study: Efficacy of ditto™ for children undergoing burns dressing changes

Forty-two children with an age range of 3-14 years and a total burn surface area ranging from 1 to 16% were randomised into a treatment (ditto™) group and a control (basic cognitive therapy) group after administration of analgesia and/or sedation.

Pain scores, pulse rates, respiratory rates and oxygen saturations were recorded pre-procedurally, at 10-minute intervals and post-procedurally. Parents were also asked to grade their child's overall pain score for the dressing change.

Results: Mean pain scores were significantly lower ($p = 0.0060$) in the ditto™ group compared to the control group, as were parental pain assessment scores ($p = 0.015$). Respiratory and pulse rates showed significant changes over time within groups, however, these were not significantly different between the two study groups. Oxygen saturation did not differ significantly over time or between the two study groups. This trial shows that ditto™ is a useful adjunct to pharmacological analgesia.



Trial ditto™ in your clinic and see the difference

Diversionary Therapy Technologies has multiple sets of trial units in rotation in the USA, UK and Australia right now. If you'd like to trial ditto™ in your own clinic (at no expense, of course), simply get in touch with us using the contacts listed on the back. We'll arrange to send you a unit.

You'll be able to see for yourself just how effective ditto™ is at reducing pain, improving clinical productivity and speeding-up healing.

Some of the unique programs you can trial on ditto™ in your clinic include:

General hospital

- Bobby has an IV Cannula
- Ben has a Blood Test
- Ben has an Injection
- Jessica has an NG Tube
- Emily has a Lumbar Puncture

Casting

- Bobby has a Cast
- Bobby has his Cast Off

Operating Room

- Bobby has an IV Induction
- Bobby has a Gas Induction

Wound closure

- Ben has Stitches
- Emily has Staples
- Jessica has Glue
- Ben has his Stitches Removed
- Emily has her Staples Removed

Radiology

- Bobby has a Chest Xray
- Bobby has a Leg Xray
- Bobby has an Arm & Hand Xray
- Bobby has an MRI
- Jessica has a CT Scan

Burns

- Bobby has a Burn
- Bobby has a Skin Graft
- Bobby has a Pressure Garment

Games

- Marble World Tour
- Dipsee Hedge Maze
- Downhill Dash
- Mini Golf
- Dipsee Castle Maze

Stories

- Delilah Goes to Zippo's Birthday
- Ellie Finds a Hobby
- Ellie Sing-Along



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UNITED STATES

603 115th Street
#196 New York
N.Y. 10025-7816 USA

P +1 845-750-7185
emily@dttdt-usa.com

UNITED KINGDOM

328 Hill Lane
Southampton
SO15 7NW England

P +44 (0) 7711 819903
dlaffar@dttdt.net.au

AUSTRALIA

Level 11, 39 Sherwood Rd
Toowong
Queensland 4066

P +61 7 3870 3820
trialditto@dttdt.net.au