**Innovation to improve the life experience for young children with cancer**

[Dr Jess Power](https://www.hud.ac.uk/ourstaff/profile/index.php?staffuid=sdesep) heads up the project team working on designing a central line harness for children with cancer. Based in the School of Art, Design and Architecture, Jess is also part of the [Institute of Skin Integrity and Infection Prevention](http://www.hud.ac.uk/research/researchcentres/isiaip/), working alongside colleagues from across the seven Schools. A Senior Fellow of the Higher Education Academy, Member of the Chartered Management institute and a Trustee of the Textile Institute, Jess focuses on applying innovative textile research to practical applications which have a real impact on society.

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The Wiggle Bag project was initiated after [Little Heroes Cancer Trust](http://littleheroes.org.uk/) contacted the University of Huddersfield with little more than a concept. The initial idea was

for a small, flat pouch made from soft material with antibacterial properties to be developed to improve the life experience of children with cancer by containing the Hickman lines. In the space of nine months the team of interdisciplinary researcher led by [Dr Jess Power](https://www.hud.ac.uk/ourstaff/profile/index.php?staffuid=sdesep), including [Professor David Leaper](http://www.hud.ac.uk/ourstaff/profile/index.php?staffid=1396) and [Joanne Marie Harris](https://www.hud.ac.uk/ourstaff/profile/index.php?staffuid=SDESJMH), investigated the design and development of a product to contain these external lines, provide greater comfort and safety for the child whilst also meeting the needs of the medical community. Though initial funding support from the [Collaborative Ventures Fund](http://www.hud.ac.uk/news/2014/november/collaborativeventuresfund.php), followed by top-up funding from the [Yorkshire Innovation Fund](http://www.yorkshireinnovationfund.org/) and Little Heroes Cancer Trust, the project team has been able to carry out initial research and to develop the designs to prototype stage. Thus moving away from the original bag concept to provide a sophisticated ergonomic design with antibacterial properties and real commercial potential.

**Background**

Children with cancer regularly have long term central line catheters inserted in the chest to deliver medication. Often termed ‘Hickman Lines’, they result in tubing protruding from the chest, which can result in medical issues including infections, but also discomfort for the child, particularly when sleeping. The need was identified for a product to contain long term central lines. Right from the beginning, the team were keen to focus on the children themselves and providing the best levels of comfort possible. Working with Little Heroes and consulting with experts from across the medical community focus groups were carried out with parents and carers of children with cancer to ensure that those using the product were at the heart of the design.

Part of the [Institute of Skin Integrity and Infection Prevention](http://www.hud.ac.uk/research/researchcentres/isiaip/), the project team brings together innovative research from across the Schools of Art, Design and Architecture, Computing and Engineering and Human and Health Sciences. This interdisciplinary team includes experts in performance materials, surface design and infection control – all areas integral to the development of a product which must meet the needs of children, families, carers and the medical community.

**The product**

The Wiggle Bag makes use of innovative experimental and industrial research to develop a strategically designed harness for children aged 5-9 years with cancer. The aim is to reduce the chances of infection around the central line as well as combat common issues such as discomfort when sleeping due to the line becoming tangled, snagged or pulled out. The product contains materials with antibacterial properties, sourced both locally and nationally, which will reduce levels of infection whilst also maximising comfort. A key focus of the project has been to ensure that the harness can be produced using cost-effective processes to ensure it can be made available to all children with cancer through NHS trusts and services.

There are plans to trial the first prototypes this summer in six test hospitals across the UK, Little Heroes Cancer Trust is poised for a full product launch to the UK medical sector in the autumn of 2015.





**To find out more about the research in this article, please contact:**

**Dr Jess Power –** **jess.power@hud.ac.uk**