Tic Attire – An Occupational Therapy Concept Design Project to Reduce Tic-Related Pain and Injury

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Introduction

Research suggests that experiences of tic-related pain and injury (TRPI) are common in individuals with tics and Tourette Syndrome (TS) and have a moderate to severe impact on activities of daily living, economic, social, and emotional wellbeing.[1,2,3,4,5]

Additionally, TRPI is a known driver for accessing medical and cognitive behavioural intervention. However, numerous intrinsic, social, and economic factors impact access to care and treatment for TS within the UK and beyond.

Objective

This undergraduate occupational therapy co-created concept project aims to design adaptive apparel to reduce TRPI and increase occupational participation and wellbeing in individuals with TS in line with the compensatory and social model of disability.

Methodology

The researcher explored existing literature and case studies relating to TRPI and carried out market research into adaptive apparel.

Six participants shared their experiences of TRPI through brief online semi-structured interviews and written product feedback, which formed the basis of the design principles.

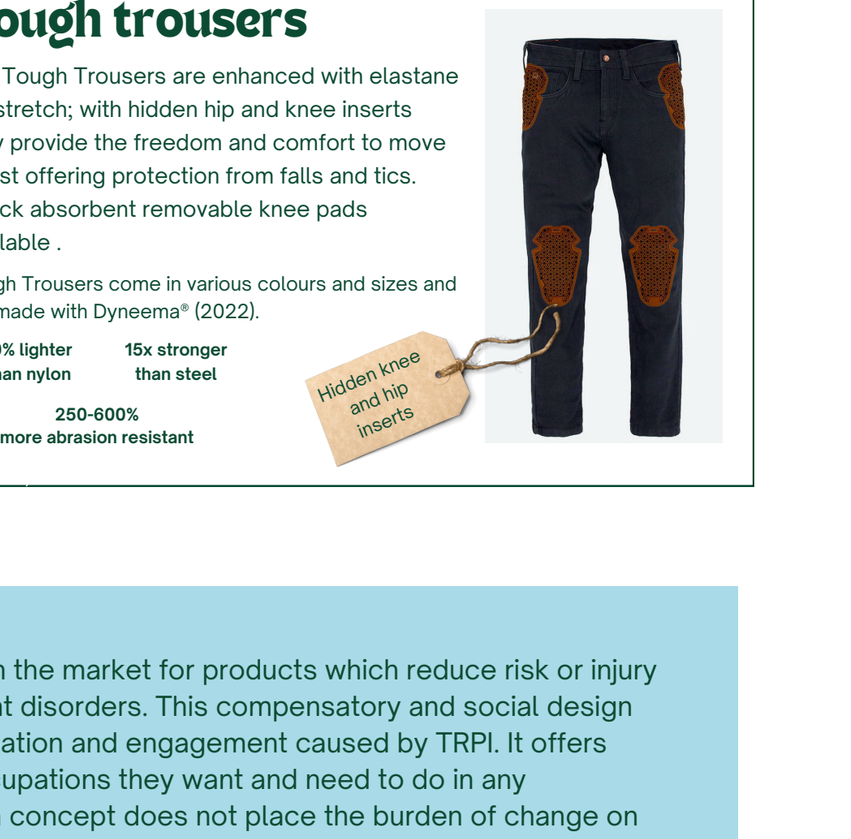
What matters most?

- For the treatment to reduce TRPI without reducing the tics themselves
- To reduce the emotional distress experienced during TRPI
- To reduce accident and emergency admissions
- To reduce contact with emergency medical professionals
- To improve work attendance and financial security

Practical Considerations

- Range of colour options to suit individual styles
- Removable or over clothing options (i.e. knee pads, gloves) to be worn with any outfit
- Non tear fabrics
- Waterproof options
- Washable products
- Sensory considerate fabric
- Removable components to accommodate tic fluctuation

Location & occupational impact of TRPI



Design Outcomes

Be bold
Be you

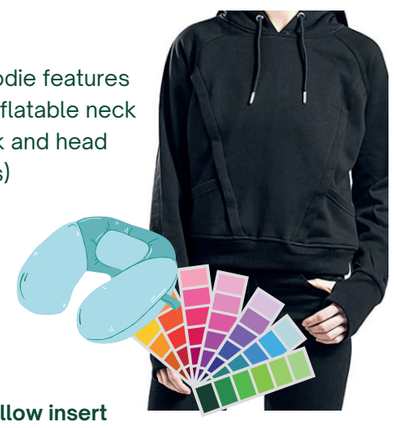
TIC ATTIRE – ADAPTIVE APPAREL

Poodie (Padded hoodie)

Our super soft made to measure Poodie features long padded sleeves and a hidden inflatable neck pillow to offer protection during neck and head tics (and is great for a nap on the bus)

Mix-and-match features:

- **Thumbholes**
- **Padded sleeves**
- **Removable gloves**
- **Padded stomach insert**
- **Padded back insert**
- **Inflatable or memory foam neck pillow insert**



Tough trousers

Our Tough Trousers are enhanced with elastane for stretch; with hidden hip and knee inserts they provide the freedom and comfort to move whilst offering protection from falls and tics. Shock absorbent removable knee pads available .

Tough Trousers come in various colours and sizes and are made with Dyneema® (2022).

30% lighter than nylon

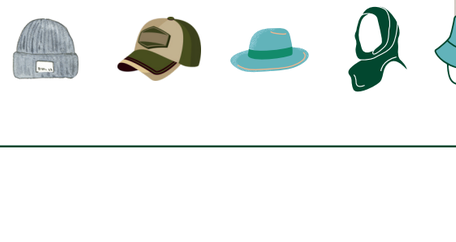
15x stronger than steel

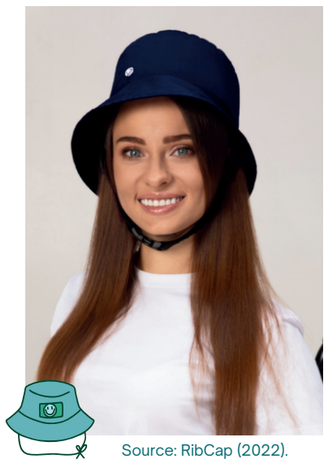
250-600% more abrasion resistant

Heads-up hats

Fashionable protection that changes with you

Our Heads-up hats are a stylish solution to reducing injury caused by head-and neck tics. Our medical-grade helmet covers are machine washable and have removable chin straps.





Source: RibCap (2022).

Conclusion

The research highlights a significant gap in the market for products which reduce risk or injury for individuals with TS and other movement disorders. This compensatory and social design project aims to remove barriers to participation and engagement caused by TRPI. It offers people opportunities to engage in the occupations they want and need to do in any environment. Significantly, the intervention concept does not place the burden of change on the individual with tics, nor does it aim to reduce the tics themselves, something many participants shared was important to them.

Related literature

1. Fasano, A., Galluccio, V. 2018. Brain injury due to head banging in Tourette. Parkinsonism & Related Disorders (49), pp 114-115.
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3. Robertson, M.M., Trimble, M.R., and Lees, A.J. 1989. Self-injurious behaviour and the Gilles de la Tourette syndrome: a clinical study and review of the literature Psychology Medicine.
4. Taylor, E., Anderson, S., Davies, E.B. 2022. "I'm in pain and I want help": An online survey investigating the experiences of tic-related pain and use of pain management techniques in people with tics and tic disorders. PMID: 35990066;
5. Conelea, C.A. et al. 2013. The impact of Tourette syndrome in adults: results from the Tourette syndrome impact survey. Community Mental Health Journal 49, pp. 110-120. Doi: 10.1007/s10597-011-9465-y.
6. Dyneema. 2022. https://www.dyneema.com
7. Rib Cap. 2022. https://ribcap.uk