

# The Effectiveness of the T.Jacket for Children with Autism Spectrum Disorders

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## **Aim:**

This study sought to explore the effectiveness of the T.Jacket, a remotely controlled variable air pressure vest designed to provide deep touch pressure and proprioceptive input on attentional behaviour among young children with Autism Spectrum Disorders (ASDs).

## **Trial design and method:**

A preliminary trial with six children at an early intervention centre in Singapore was carried out. All participants had a clinical diagnosis of ASD and attended a program at the centre catered to children with the potential of accessing the regular curriculum in mainstream schools. This study was conducted in a naturalistic setting with the distraction of other children with ASD.

The trial consisted of 14-18 sessions which lasted 15-40 mins each. However, only 15 minutes of observation data was collected. While the entire trial was carried out under 3 different conditions, each session was carried out under the same condition. The 3 conditions are:

- A. Without the T.Jacket
- B. With an uninflated T.Jacket
- C. With an inflated T.Jacket

The trial design was as such:

- 1. A (3-4 sessions)
- 2. B (2-4 sessions)
- 3. C (4-8 sessions)
- 4. B (1-2 sessions)
- 5. A (1-2 sessions)

During each session, several variables were measured via behavioural observations. More information follows below.

## **Measures:**

Behavioural observation: Each 15 minute observation episode was divided into 60 15-second intervals giving a possible range of 0 to 60 for each of the observed behaviours. Dependent variables consist of the following were observed by an observer:

1. On – seat behaviour - Child staying in his/her seat for any duration during the interval, a positive, goal-directed behaviour.
2. Off - seat behaviour - Child’s bottom not in contact with the seat/floor when required during any duration of the interval, a negative behaviour.
3. Self-stimulation/stereotypic behaviour - Child engages in any form of non-goal directed repetitive behaviour which may be verbal (making sounds), tactile (saliva play), visual (flicking objects in front of eye) or vestibular (rocking) for any duration during the interval.

**Results:**

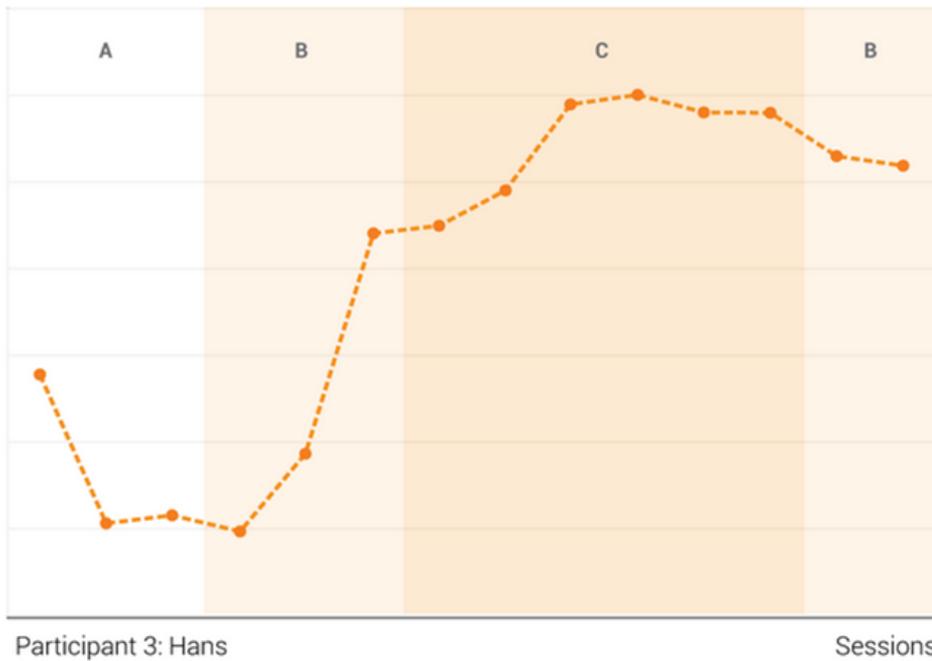
1. 83% of the subjects showed improved on-seat behaviour once they had T.Jacket on.
2. 60% of these subjects showed further improved on-seat behaviour when T.Jacket was inflated.
3. 67% of the subjects showed less off-seat behavior (positive outcome) when T.Jacket was inflated

Examples of the improved on-seat behaviour can be seen in the graphs of 3 children below.

X-axis: Sessions

Y-axis: Attentional behavior





**Implications:**

The findings of this study indicate that T.Jacket improves on-seat behavior and reduces off-seat behaviour of children wearing it when it is inflated. This improvement in on-seat behavior can potentially translate into less time spent on managing behaviours, and more time can be dedicated to spending quality time with the child or helping the child engage in learning the task at hand.