

**pmg** National Training Event  
University of Warwick 9 – 11th April 2008



Does postural support influence  
the ability to perform attention tasks  
in children with cerebral palsy?

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## Postural Support

- Wheelchair/static seating is provided to help maintain a stable posture and:
  - Slow deterioration of contractures & deformities
  - Increase functional ability and independence
  - Improve attention performance

... lack of evidence

## Objective

Postural support  
provided by a  
seating system



Attention  
performance

## Study Design

- Randomised cross over trial
- 30 children
- Inclusion:
  - Bilateral CP
  - Age range 4 to 16 years
  - Level 3, 4 or 5 on GMFC for CP
  - Chailey sitting level 1-4
- Exclusion:
  - Reliable yes/no response not possible

## Intervention

- Three levels of support
- Chailey Adaptive Postural System (Caps2 seat)





## Configuration 1



Backrest

Ramped seat  
cushion

Foot support

## Configuration 2

Lateral pelvic  
supports

Kneeblock



Sacral pad

Pelvic strap

## Configuration 2





## Configuration 2



## Configuration 2



### Configuration 3

Lateral thoracic  
supports

Tray  
(support arms)



Anterior chest  
support

## Configuration 3





## Configuration 3



## Configuration 3



## Outcome Measures

- Test of Attentional Performance (TAP test)
  - Alertness
  
- Game of “Snap”
  - Latency and accuracy
  
- Personal Preference
  - Which configuration was preferred when doing the test?

# **Test of Attention Performance (TAP Test)**





without sound



with sound

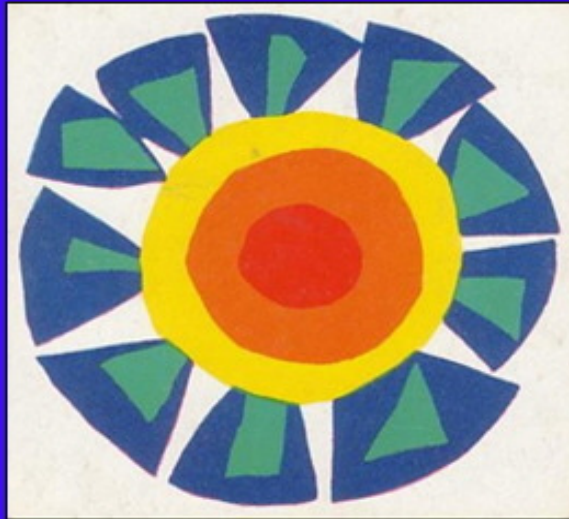


## **TAP Test**

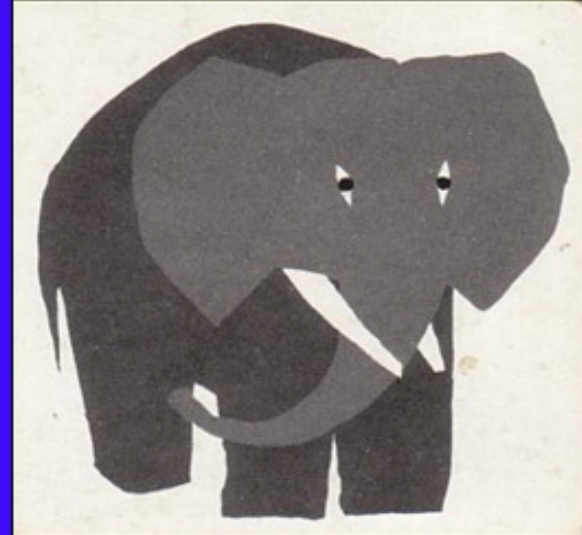
- General slowness
- Phasic alertness
- Lapses in attention



## Game of “Snap”











Configuration 3



## Configuration 1





## Configuration 2

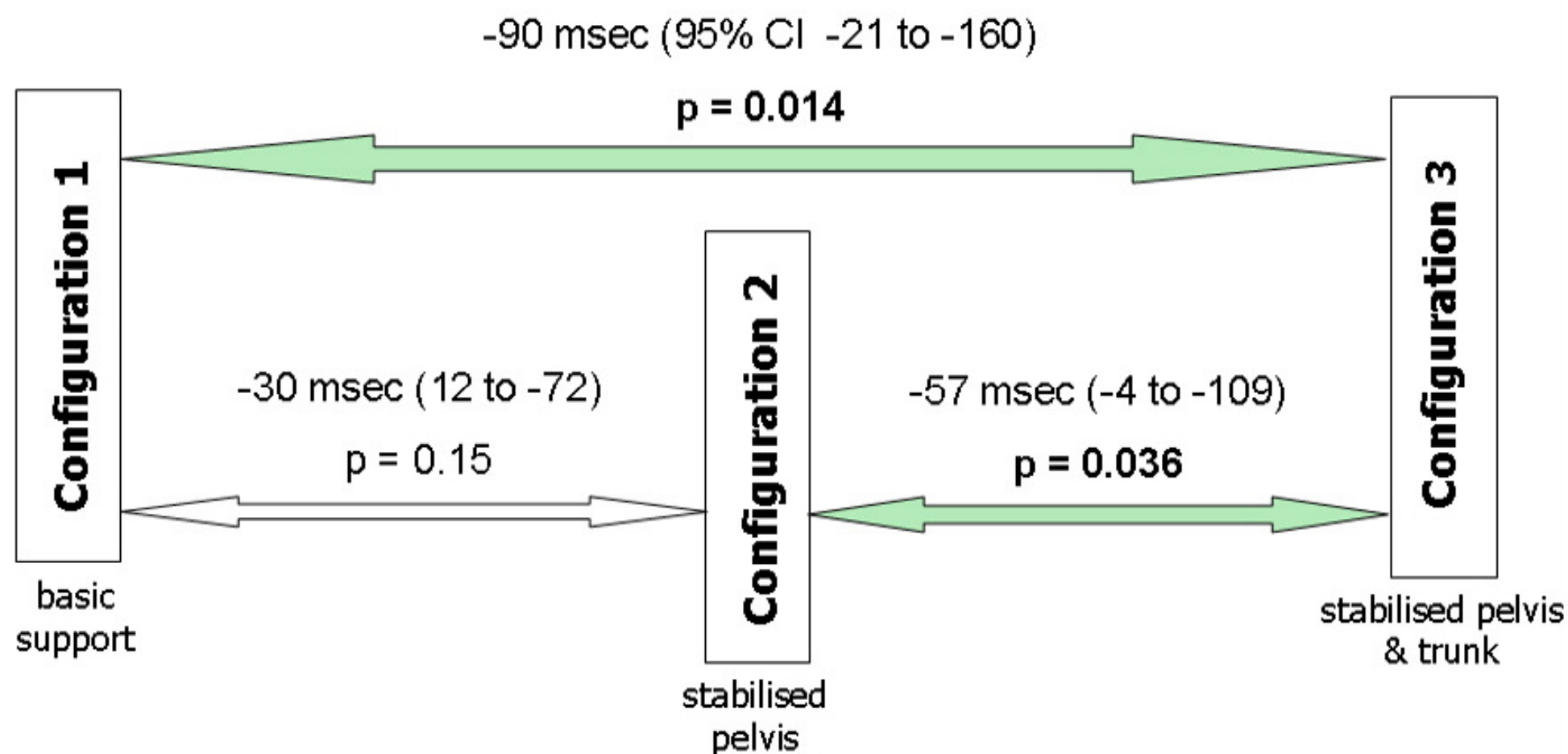


## Results to Date

### Participants:

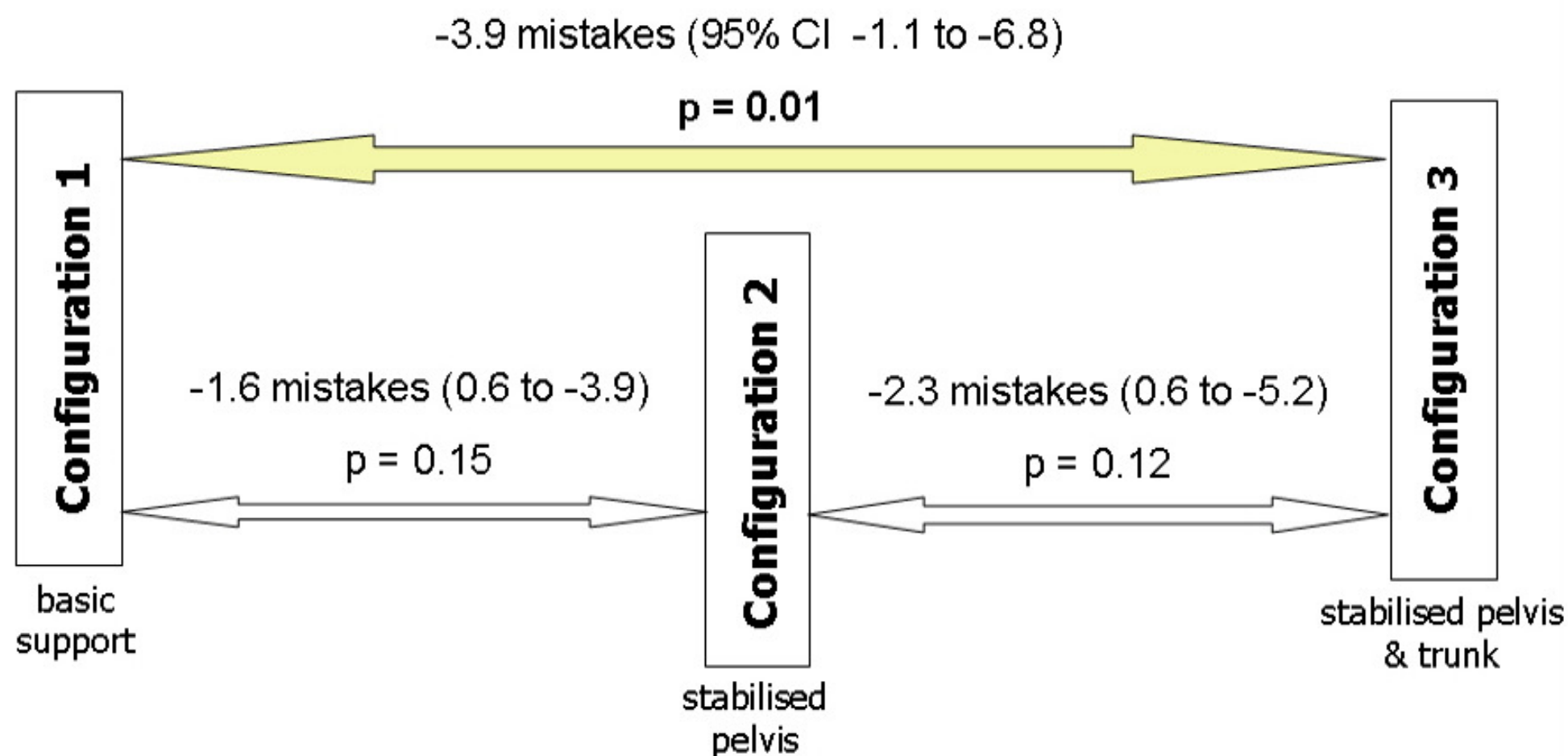
- $n = 25$
- Gender: 10 female and 15 male
- Age range: 7 – 16 years  
(mean age = 11 years 9 months)
- 22 completed TAP test
- 25 completed Snap game

## TAP – Response Time

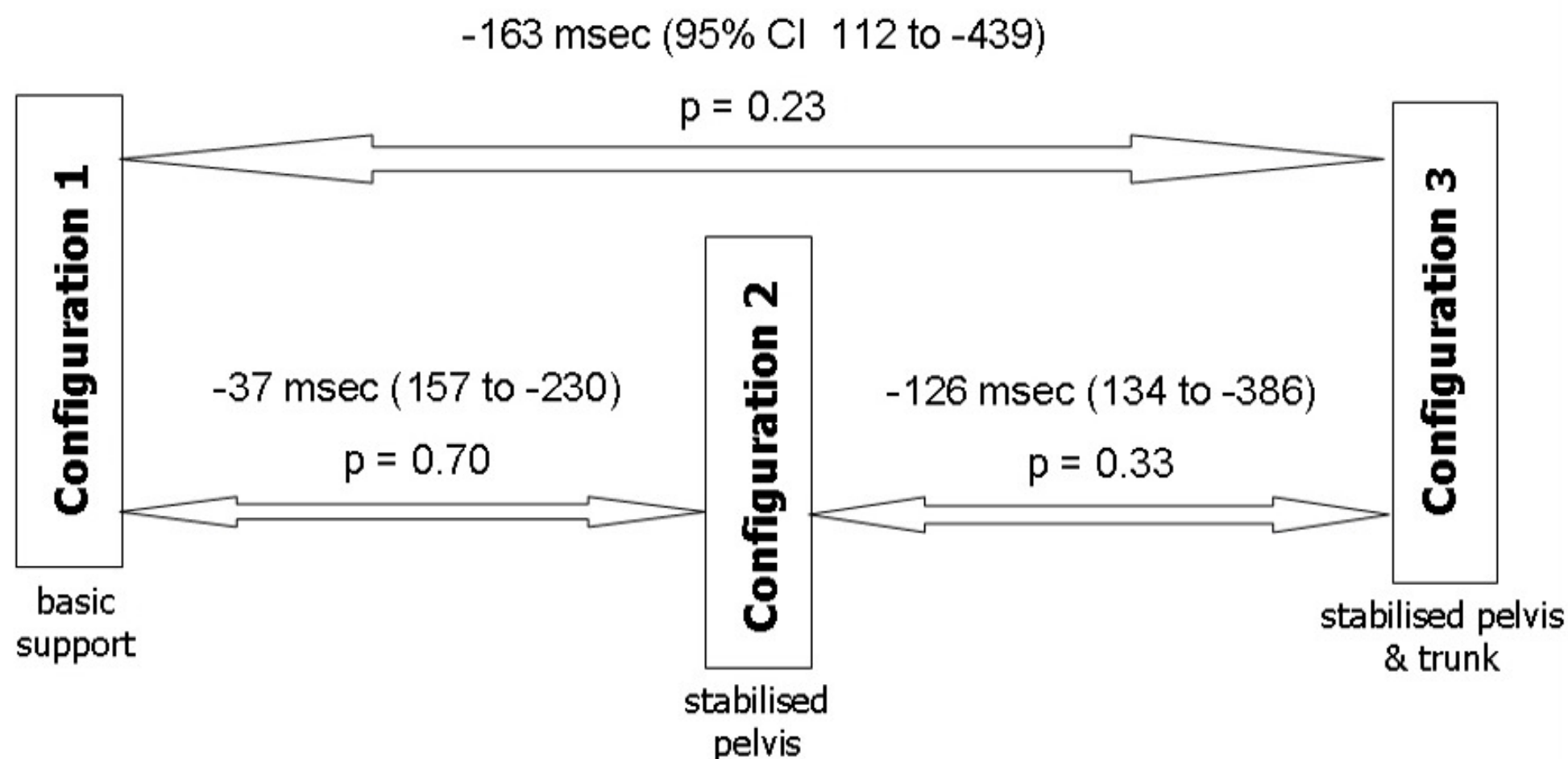




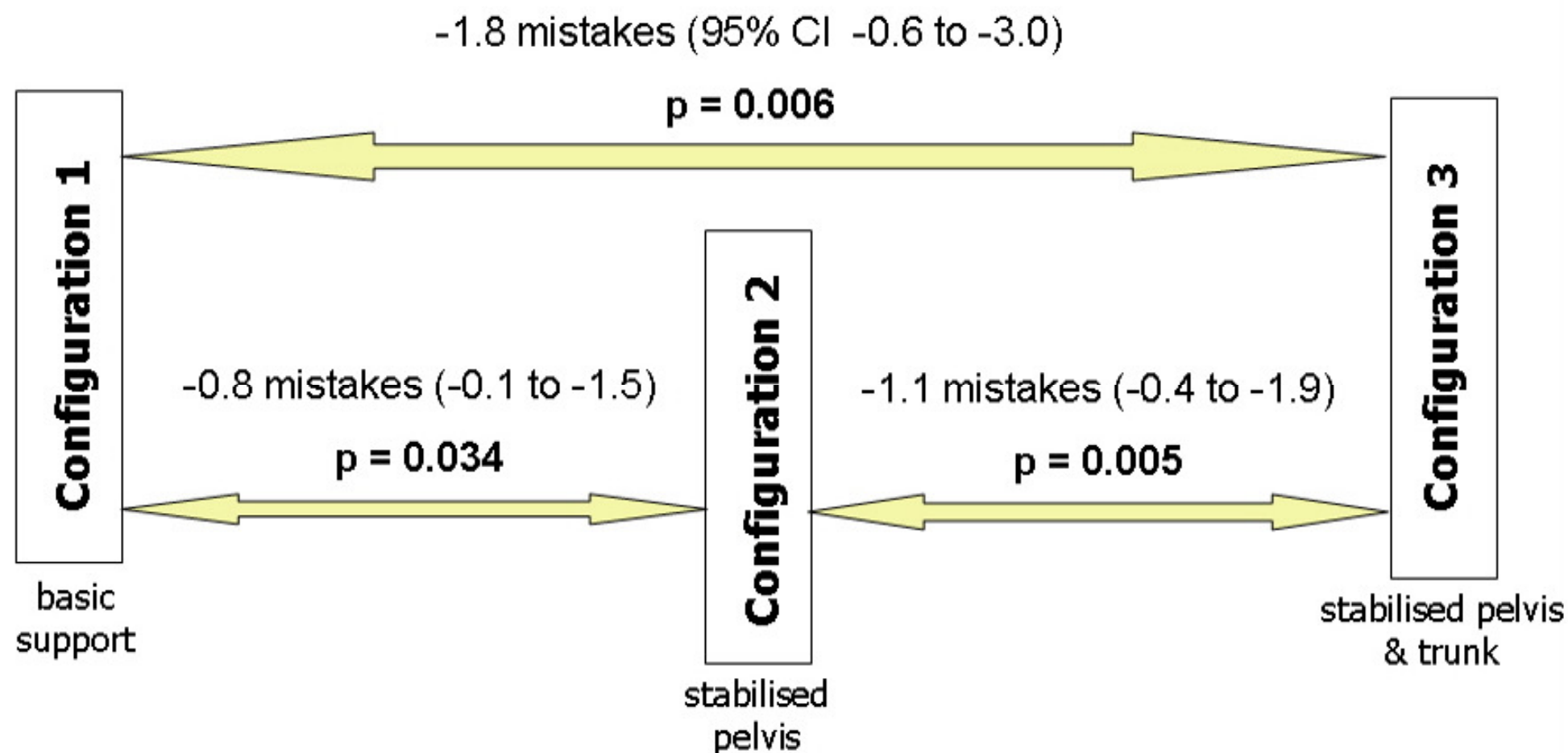
## TAP – Mistakes



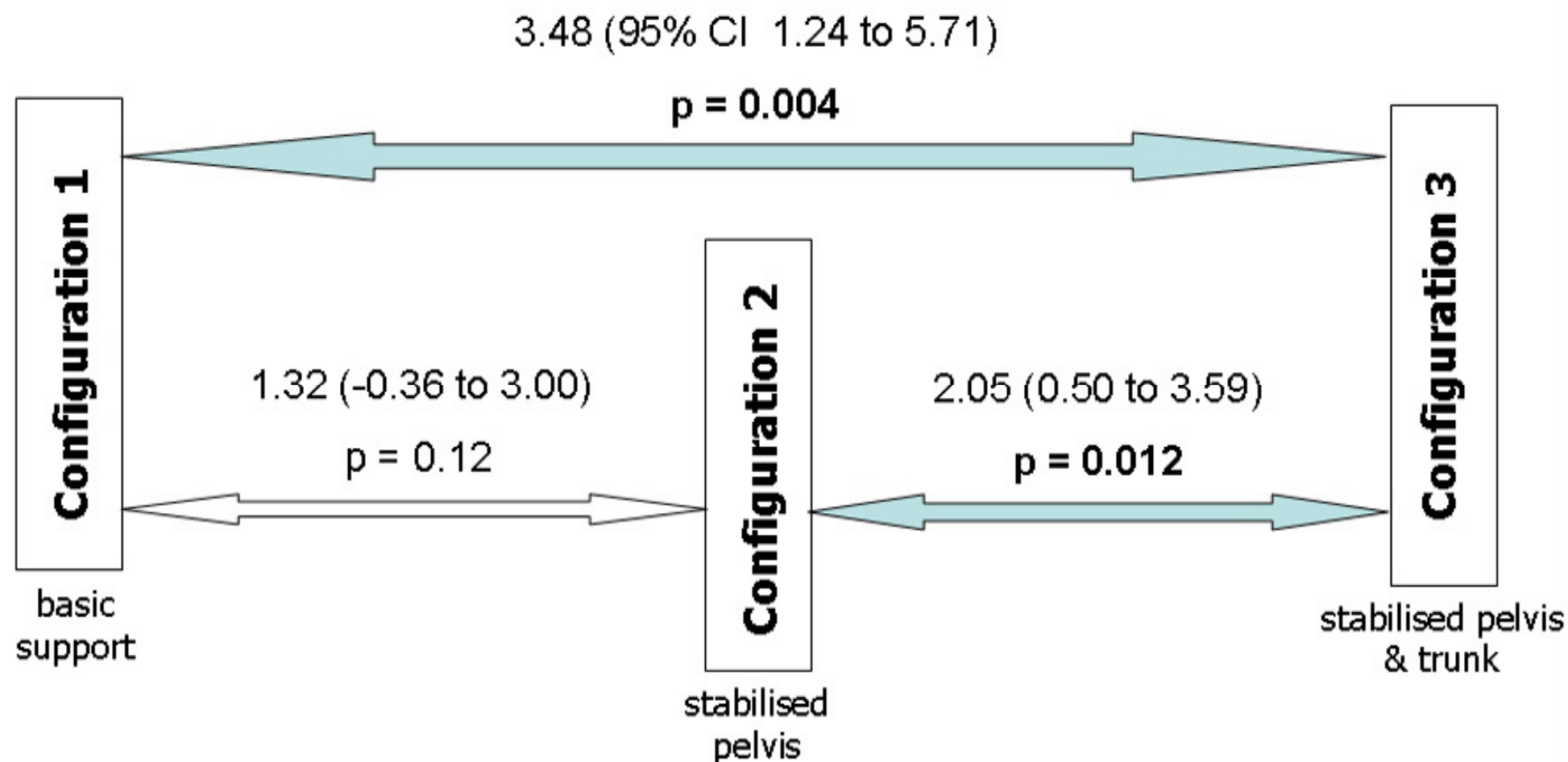
## Snap – Response Time



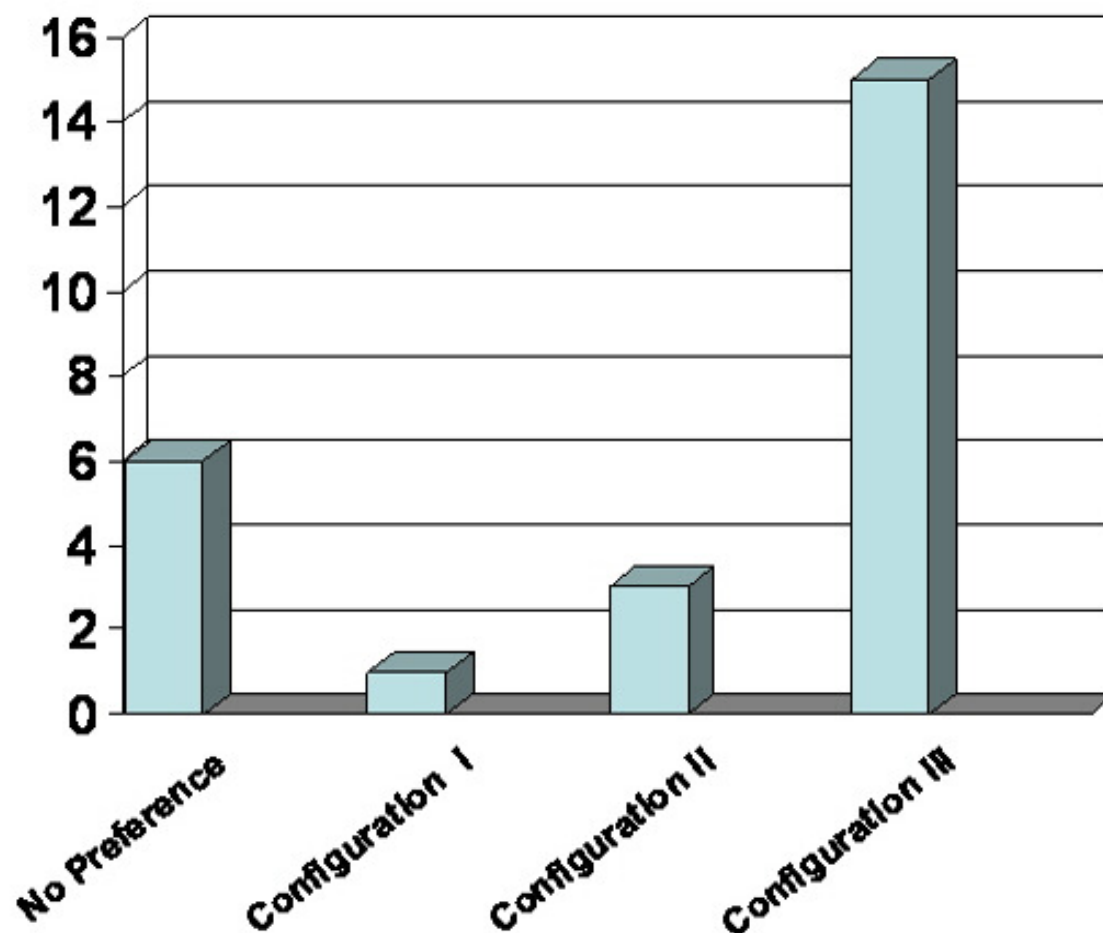
## Snap - Mistakes



## Snap - Score



## Preference



"...easier to do test"

"...easier to concentrate"



## Preliminary Findings

- Improvement in alertness using TAP test  
( ↓ reaction time and ↓ lapses in attention )
- Improvement in performance playing a SNAP game  
( ↑ score and ↓ lapses in attention )
- Most participants preferred configuration 3 when carrying out the tests.

## Preliminary Findings

Tap test:

- Validated measure (response time & lapses of attention)

Snap game:

- Lacked sensitivity in relation to response time ?
- Indicated lapses of attention & quality of performance
- Completed by all participants – more engaging ?

## Acknowledgements



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Chailey Heritage Clinical Services
- Dr Janet Cockburn, Reading University

**Thank you for your attention**