Considering High Performance, Self Propelling Wheelchairs For Young Children

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- Definition of terms
- Overview of current literature
- Case study: Justin
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- Questions
Definitions

- Young children
- Standard wheelchair
- High performance wheelchair
Overview of current literature
How do we choose?

- **Buggies**
- **Powered wheelchair**
- **Self propulsion**

With encouragement, parents can often come to see how a wheelchair can be a positive experience for their child that can enhance their lives...
Overview of current literature

- ‘Childhood-onset wheelchair users... have fewer limitations due to shoulder pain than those who began using their wheelchairs as adults’ (Sawatzky et al 2005)

- ‘Self-propulsion is grossly inefficient’ (De Groot 2005)

- ‘Wheelchair users operate at much higher levels of energy expenditure, force and power... Over time it is thought that this produces overuse syndromes, injury and pain.’ (Sabick & Kotajarvi 2004)

- ‘Paediatric aluminium folding frame wheelchair could weight more than 50% of a four- to six-year-old child’s body weight. However a rigid titanium framed wheelchair could weigh... less than 30% of the mean body weight of four- to six-year-old children.’ (Meiser & McEwen 2007)
Justin

- Little boy aged 2 years old.
- Congenital deformity affecting lower limbs
- Functional walking is not possible
- Short stature, poor prognosis for growth
- Moves around independently on the floor using his upper limbs
- Using a standard buggy.
- Keen for independent mobility
Justin... the assessment process

Wheelchair Skills Training

Powered vs. manual

Trialled standard wheelchair

Environment Assessment

Cost vs. NEED

Limited availability

'Car'
Outcomes

- Positive attitude
- Ease of propulsion
- Freedom to play!
- Able participate in his environment on a level with his peers.

- Mum’s view: ‘Justin loves his wheelchair. He is a lot more confident now. He is able to do more himself and is more independent out and about’
Implications for practise

- Raised the bar!
- Mobility is key to development
- Implications for all children

We need to:
- Maximise performance
- Ease development of wheelchair skills
- Unlock developmental potential
What we’re doing...

- Joint work with Community therapists
  - Wheelchair vs. buggy
  - Early referral
- Joint funding
  - education
  - voluntary sector
- Training skills programmes
  - Local wheelchair services
  - Whizz-Kidz
- Developing a fleet of lighter wheelchairs
- Wheelchairs that include growth kits
- Bring the cost down
Conclusion

- **Give children same opportunities to succeed as we offer adult active users**

- **Challenge current accepted practise**

- **Think creatively!**
Reference List

- Pictures c/o: www.gblwheelchairs.co.uk