

# Considering High Performance, Self Propelling Wheelchairs For Young Children

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Sarah Brown, OT  
Croydon Wheelchair Service

# Content

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



# Definitions

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- Young children



- Standard wheelchair

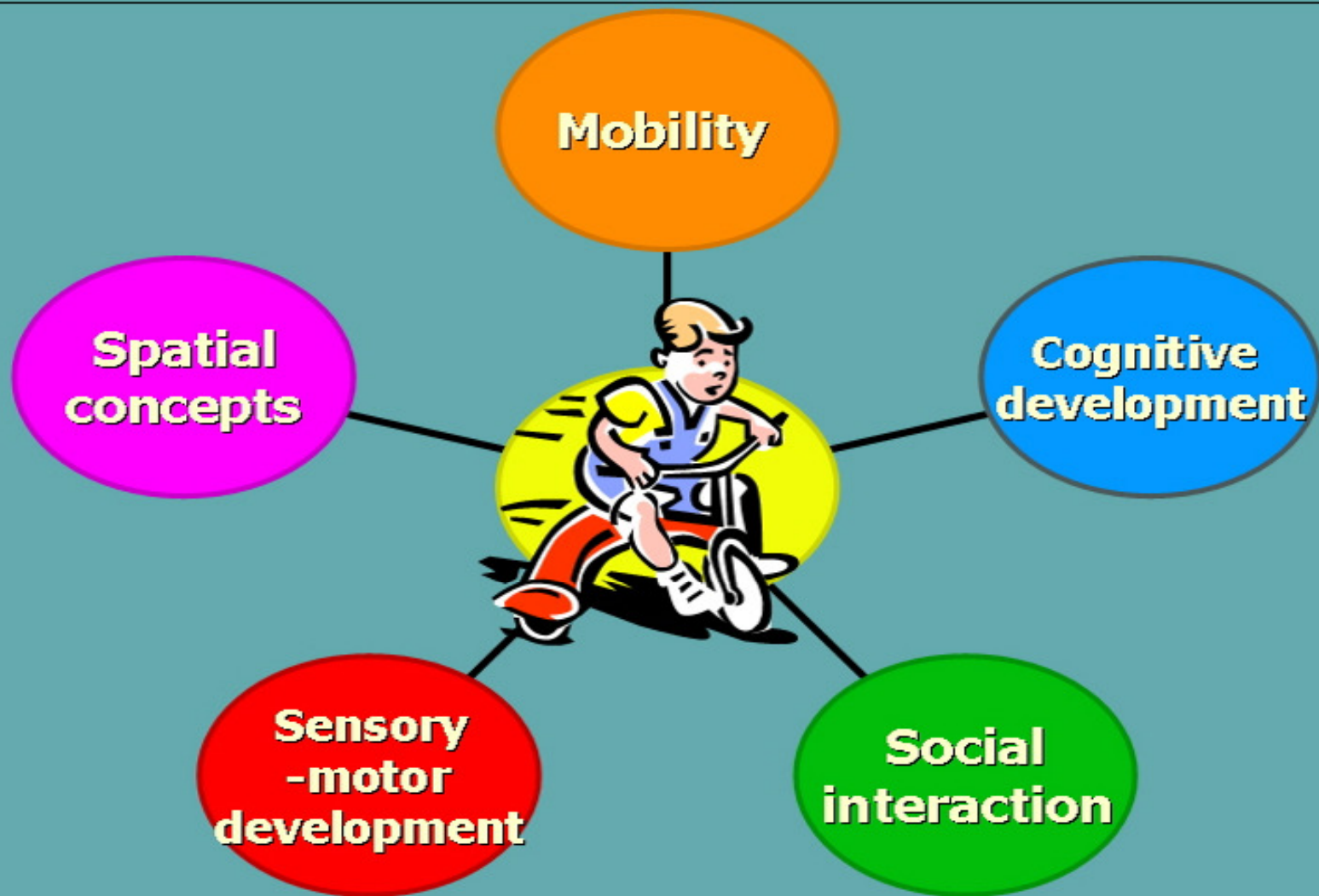


- High performance wheelchair



# Overview of current literature

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# How do we choose?

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- 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

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- *'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 weigh **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)

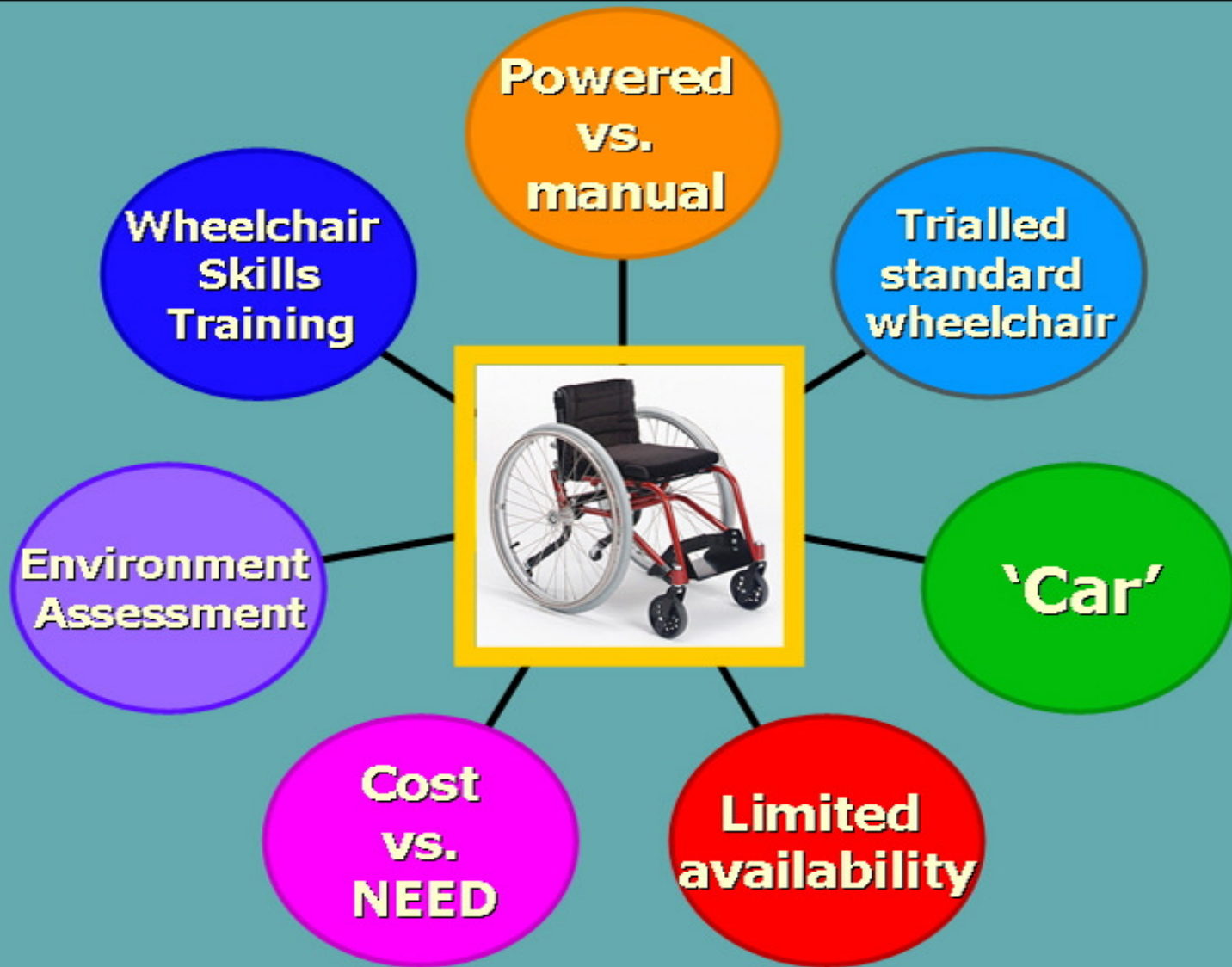
# Justin

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- 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





# Outcomes

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

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- 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...

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- 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

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- **Give children same opportunities to succeed as we offer adult active users**
- **Challenge current accepted practise**
- **Think creatively!**





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- Pictures c/o: [www.gblwheelchairs.co.uk](http://www.gblwheelchairs.co.uk)