

# MASTERY OF MANUAL SKILLS

Recent insights into typical  
and atypical development  
of manual ability

PROGRAMME



umcg

19 -21 april 2012

The Netherlands  
Groningen



# MASTERY OF MANUAL SKILLS

## Recent insights into typical and atypical development of manual ability

Impaired hand function has a big impact on daily life activities, as we use our hands for instance for self care, play, work, gestures and writing. Typically, hand mobility is characterized by a large repertoire of possibilities allowing for a great flexibility and ability to adapt to environmental constraints. This amazing capacity to adjust is mediated by complex neural control. Gradually our understanding of typical development of manual ability has increased. Likewise, our knowledge on the mechanisms involved in impaired hand mobility in children with a developmental motor disorder, such as cerebral palsy and Developmental Coordination Disorder, has improved.

Themes addressed at the 'Mastery of Manual Skills' Meeting are 'typical and atypical development of reaching, grasping and visuomotor integration', 'impaired hand function in children with cerebral palsy', 'impaired hand function in children with Developmental Coordination Disorder' and, last but not least, 'possibilities for and challenges in intervention'.

The congress will be a meeting place of scientists involved in fundamental aspects of brain development and scientists and clinicians dealing with children with minor and major developmental disorders. Ample time will be devoted to general discussions. Participants are encouraged to bring posters with their latest results.

### Organization:

Mijna Hadders-Algra  
Beatrix Children's Hospital  
Inst. Developmental Neurology

Arend Bos  
Beatrix Children's Hospital  
Division Neonatology

Karel Maathuis  
Center for Rehabilitation

Loes de Weerd  
Beatrix Children's Hospital  
Inst. Developmental Neurology

Harry Gubbels  
Wenckebach Instituut

Beatrix Children's Hospital  
Center for Rehabilitation  
Wenckebach Instituut



8.15 - 9.00 Registration and coffee

9.00 - 9.20 Welcome

### Neural mechanisms involved in reaching, grasping and manipulation

9.20 - 10.00 John Rothwell (London, UK):  
*Cortical circuitries involved in reaching, grasping and manipulation.*

10.00 - 10.40 Melvyn A. Goodale (London, ON, Canada):  
*Perception – action: making sense of upper limb activities.*

10.40 - 11.10 Coffee / tea

### Typical and atypical development of reaching and grasping

11.10 – 11.50 J. Cole Galloway (Newark, DE, USA)  
*Development of visuomotor integration in infancy.*

11.50 - 12.30 Arend Bos (Groningen, the Netherlands)  
*Development of manual abilities in preterm infants.*

12.30 - 13.10 Mijna Hadders-Algra (Groningen, the Netherlands)  
*Development of postural control during reaching: typical and atypical development.*

13.10 - 13.45 Lunch

13.45 - 15.00 Poster session with tea

THURSDAY APRIL 19th

### Typical and atypical development of visuomotor integration

- 15.00 – 15.40** Janet Atkinson (London, UK)  
*Dorsal stream and dorsal stream vulnerability in the developing infant's brain.*
- 15.40 - 16.20** Oliver Braddick (Oxford, UK)  
*Visual control of action in typical and atypical infant and child Development.*
- 16.20 - 17.00** Koen Van Braeckel (Groningen, the Netherlands)  
*Visual and proprioceptive control of action in typically developing and preterm born children at early school age.*
- 18.00 – 20.00** Welcome reception

FRIDAY APRIL 20th

### Pathophysiology of impaired hand function in children with cerebral palsy

- 9.00 – 9.40** John Martin (New York, NY, USA)  
*Pathophysiological mechanisms of impaired limb use after unilateral lesion of the developing brain.*
- 9.40 – 10.20** Andrew Gordon (New York, NY, USA)  
*Pathophysiology of impaired hand function in children with cerebral palsy.*
- 10.20 – 11.00** Bert Steenberg (Nijmegen, the Netherlands)  
*Impaired motor planning and motor imagery in children with cerebral palsy.*
- 11.00 - 11.30** Coffee / tea

### Visuomotor integration in children with cerebral palsy

- 11.30 – 12.10** Andrea Guzzetta (Pisa, Italy)  
*Plasticity of the visual system after early brain damage.*
- 12.10 – 12.50** Geert Savelsbergh (Amsterdam, the Netherlands)  
*Effect of vision on upper limb activity in children with unilateral spastic cerebral palsy.*
- 12.50 - 13.30** Lunch
- 13.30 – 14.20** Poster session with tea



## FRIDAY APRIL 19th

### Intervention to improve manual abilities in children with cerebral palsy

- 14.20 - 15.00** Eva Brogren Carlberg (Stockholm, Sweden)  
*Goal setting as a means to improve skills.*
- 15.00 – 15.20** Pauline Aarts (Nijmegen, the Netherlands)  
*Pros and cons of constraint-induced movement therapy in children with cerebral palsy.*
- 15.20 – 15.40** Lucianne Speth (Valkenburg, the Netherlands)  
*Pros and cons of treatment with botulinum A toxin on upper limb activity in children with cerebral palsy.*
- 15.40 – 16.10** coffee / tea
- 16.10 – 16.30** Mick Kreulen (Amsterdam, the Netherlands)  
*Functional effects of surgery of the spastic hand in children with cerebral palsy.*
- 16.30 – 17.10** Doreen Bartlett (London, ON, Canada)  
*Intervention in children with cerebral palsy: lessons from the Move & Play study.*
- 18.00** Departure for dinner

## SATURDAY APRIL 20th

### Manual skills in children with Developmental Coordination Disorder (DCD)

- 9.00 – 9.40** Bouwien Smits-Engelsman (Leuven, Belgium)  
*Pathophysiology of impaired hand function in children with DCD.*
- 9.40 – 10.00** Lieke Peters (Groningen, the Netherlands)  
*Neurological correlates of DCD.*
- 10.00 – 10.20** Jessika van Hoorn (Groningen, the Netherlands)  
*Neurological correlates of dysgraphia and impaired visuomotor integration.*
- 10.20 - 10.50** Coffee / tea
- 10.50 – 11.30** Peter Wilson (Melbourne, Australia)  
*Effect of sensory impairments on manual abilities in children with DCD.*
- 11.30 – 12.10** John Cairney (Hamilton, ON, Canada)  
*DCD: long-term consequences for participation.*
- 12.10 – 13.15** Forum Discussion:  
*How can we improve manual skills in children with developmental motor disorders?*
- 13.15** Take away lunch

## **WELCOME TO GRONINGEN** <sup>®</sup>

As a lively university city, Groningen has the youngest average population in the Netherlands. It has a long and turbulent history, which becomes evident from the historic warehouses, courts and buildings. Groningen is also a city with nerve, with the most numerous examples of innovative architecture within its boundaries. In addition, it was once proclaimed the city with the best city centre in the Netherlands because of its charm. Experience all of this and explore Groningen!

