 # OP3

KANGAROO MOTHER CARE FROM A BRAIN-TO-FUNCTION PERSPECTIVE: A "BUTTERFLY EFFECT" IN PEOPLE BORN PREMATURELY?

Prof. Cyril Schneider,
Quebec, Canada title & abstract,
9e INK, Ahmedabad

Abstract:

Prematurity interferes with brain development and cerebral differences have been reported with clinical significance in childhood and beyond (motor/physiological disorders, cognitive and psychosocial impairments, etc.). Given the importance of sensory stimulation for brain maturation during the third trimester of gestation, it has been suggested that early care such as Kangaroo Mother Care (KMC) could influence brain growth. In this context, the hypothesis of a "butterfly effect" means that the smallest changes induced by KMC after birth in the premature brain could result in substantial differences of function over time. The presentation will address this twofold question as follows: what is the impact of a preterm birth on brain development (to explain functional impairments) and how does KMC contribute to improve this portrait, neurologically and functionally (to explain prevention from long-term impairments)? Recent scientific evidences will be discussed and should contribute to raise new hypotheses on brain plasticity underlying KMC influence.

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Cyril Schneider, PhD

POSITION = Associate Professor, Université Laval (Department of Rehabilitation, Faculty of Medicine)
Researcher, Centre de recherche du CHU de Québec, Neuroscience
Director, Clinical neuroscience and neurostimulation lab. (CNS lab)

ACADEMIC TRAINING		
DISCIPLINE	DEGREE	INSTITUTION
Mathematics & Psychology	1st cycle	Université d'Aix-Marseille I, France
Neuroscience & Behavior	2nd cycle (MSc)	Université d'Aix-Marseille I, France
Neurophysiology & Biomechanics of Movement	PhD	Université de Paris-Sud, France
Neurophysiology	Post-doctorate	Université Laval, Québec City, QC

Teaching Activities

— Motor Learning & rehabilitation of movement (responsible) in MSc Physical Therapy
— Specialized therapies in paediatrics (responsible) in MSc Physical Therapy
— Neuroscience & Language (responsible) in BSc of Cognitive Sciences of Language
— Motor control of balance (collaborator) in MSc Physical Therapy
— Neuroembryology & nervous system organization (collaborator) in MSc Neuroembryology

Research Interests

— Motor control and learning, cognitive function (memory, language)
— Brain reorganization in people with stroke, brain injury, preterm birth, cerebral palsy, low back pain
— Magnetic neurostimulation to improve function in these people

Research Funding

Six last years = 1 million $ (cad) for basic research on brain function (NSERC) and clinical research in collaboration (CIHR, SSHRC, Parkinson Society, Rehabiliation Research Networks) + high-tech brain stimulation and imaging laboratory (470,000 $, Canadian Foundation for Innovation).

Scientific Publications

— **Articles:** 18 in the last 5 years, 2 under review
— **Abstract:** 51 for congresses, conferences, talks (including with my students) in the last 5 years
— **Invited conferences:** 26 in the last 5 years

Contributions to Training, Research & Knowledge

— **Training (from 2001 to current):** 9 PhD students, 6 MSc students, 27 summer trainees in research, 1 post-doctoral trainee
— **Other contributions:** Students Affairs Commission (Université Laval), Prof Committee of MSc Physical Therapy, Chair of an International Symposium on neurostimulation (2011)/ Responsible of Training Courses on Motricity for PT Professionals (2010-11)/ Co-responsible of 8e INK (2010), Consultant for Health Family Encyclopedia, Workshops on Nervous System in Schools at Québec City, + numerous other committees for MSc/PhD/clinical research platform/journals/grant organisms, etc.