



Sally Goddard Blythe

# Neuromotor Immaturity in Children and Adults

The INPP Screening Test for  
Clinicians and Health Practitioners

WILEY Blackwell



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# DEDICATION

*For Peter Blythe*

*If I have seen further, it is by standing on the shoulders of giants*  
Sir Isaac Newton, Letter to Robert Hooke, 5 February 1675.





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# FOREWORD

As a paediatrician with a special interest in neuro-development, I have been inspired by Sally Goddard Blythe's work and the work of INPP. To me, the link between balance and movement difficulties and learning difficulties is self-evident. Much, if not all, of what Sally Goddard Blythe has written in the past has been written for parents and teachers. Here is a book for doctors. Teachers and parents look to doctors for an explanation of their child's developmental problem, but doctors (particularly primary care doctors) consider neuro-development as 'specialist territory'. The doctors who have insight into child development work from child development centres, and these are often in specialist centres, which may not always be easy to access. However, children with neuromotor immaturity, whose development is not quite normal, and children with school-related problems are very common – so common that they could be considered part of the wider spectrum of normality. The medical culture now is the culture of specialism. The system demands that and parents expect a specialist opinion and a specific developmental diagnosis.

As a paediatrician with an interest in development, children were referred to me with a range of symptoms with the expectation of one or other specific diagnosis. Parents would often bring a checklist of symptoms for specific conditions (taken from a book or the Internet). Their child fulfilled most of the criteria. They wanted me to confirm their diagnosis, as it would then open doors to access funding from the education department. I was struck by the fact that checklists for separate specific conditions had so many overlapping symptoms. On examination, the physical findings overlapped considerably. Most had signs of neuromotor immaturity. I had this perception that most of these children were potentially normal children, who had for whatever reason, drifted from a normal developmental pathway, and with the correct support and nurture could be welcomed back to normal health and development.

Do all children have to be referred to a specialist? Should not a generalist have insights into common problems; into those conditions that are not yet diseases and disorders but deviations from normal; the grey areas?

A good health promotion and preventive service sees grey areas as its bread and butter! There was once a group of doctors who understood this grey area very well. These were the Community Medical Officers of yesteryear. They had wide-ranging community and public health roles including immunization and screening, and they were the school doctors. It was their role to identify children who may have learning difficulties in school. They knew their communities, their schools and teachers. They also knew their child development! They knew that there was a connection between subtle developmental difficulties and learning difficulties, and they also knew that soft neurology was important. They would follow up the children with developmental difficulties in school, and support their teachers, and be advocates for them if they needed additional resources. They would have welcomed this book because this book gives an understanding and an explanation of something they always knew. However, neurologists or hospital paediatricians were somewhat dismissive about 'soft neurology'. They were only interested in neurological signs which pointed to structural damage or specific neurological lesions. Immaturity did not interest them. The bodies that recommended the health and prevention programmes were either hospital (disease oriented) doctors or public health academics. Screening, they pronounced, had to be targeted to conditions with a medical label and medical intervention. Developmental surveillance was dropped from the programme.

Over the decades, the Community Medical Officers have been reorganized out of existence. Their duties have been divided up between health visitors, GPs, school nurses and community paediatricians. Community paediatricians' work is diluted between so many responsibilities (including child protection work, children in the care system, adoption and fostering and in working in specialist child development centres) meaning that the work for school is now confined to the statutory role of providing medical advice for the statement of special educational needs; this is an essentially bureaucratic role. They have little time left for that valuable preventive and health monitoring role that was the follow-up of children with developmental delays and motor immaturities and in liaison with the teachers.

We are told that various emotional and developmental disorders (e.g., dyslexia, dyspraxia, Asperger's syndrome, autism and ADHD) are on the increase, and we are facing an epidemic of mental health problems. Many mental health problems that society faces today have their origins in childhood. We cannot afford to drop our health promotion and prevention. We know that in general better nurture of our children could lead to better mental (and physical) health in adults, but beyond these vague generalizations, we have had no models or specific programmes. This book provides the evidence and the rationale and the methods for such a model.

Preventive health services understand the concept of monitoring the health of both individuals and populations. People don't need to be ill or unwell to qualify for health surveillance. We do need to understand what we are monitoring. We understand the concept of growth monitoring. The pattern of normal growth is well understood, deviations from the normal pattern are easily recognized and specific interventions and referral pathways have been worked out. In countries or communities where undernutrition is common, health care workers will give energy or protein supplements as soon as the child's growth begins to deviate from normal and long before the clinical signs of protein calorie malnutrition are evident. (The appearance of frank signs of protein calorie malnutrition in a child or a population would be considered a failure of the health care programme.)

Could we not apply a similar model to monitor development? Examining for neuromotor immaturity is more complex than measuring and monitoring growth. The issues are a little more difficult to grasp, the procedures a little less objective. The model is still the same. Neuromotor immaturity is common and can be identified before the criteria for specific disorders become apparent. Simple measures that can be incorporated into a pre-school or school curriculum and its benefits have been demonstrated. The measures used need not even be considered as interventions or treatments (any more than nutritional supplements are considered treatments). They are means by which the child can be encouraged back onto the natural pathway of health and normal development. Surely, this is not beyond the territory of a health service. Surely, it is relevant for primary care physicians to understand these issues and be able to examine and monitor children with these difficulties.

The curative model of health care (the model that likes the idea of specific diagnosis and specific treatment) is the model that the public and politicians buy into and is supported by the media and most of the medical profession. The medical profession likes certainty and is uncomfortable with grey areas – with 'soft neurology'. Our training and management system appears to steer us in the direction of a specific medical diagnosis and steer us away from grey

areas. Yet, it is precisely the grey areas in life that lend themselves to proactive health care and primary prevention.

Relating behavioural difficulties and school-related problems (difficulties in reading, attention difficulties, dyslexia, etc.) to developmental issues may be a completely new territory to many non-specialist doctors. The first part of this book provides the research evidence and a neuro-developmental explanation as to why neurological immaturity in children results in subtle learning difficulties, and the difficulties these children have accessing the full curriculum.

The second part of the book develops the theme that neuromotor immaturity is not confined to childhood and reviews the evidence that many debilitating disorders in adult life (e.g., anxiety disorders, agoraphobia and panic attacks) not only have their origins in childhood but show clinical signs of immaturity in symptoms of movement balance and vestibular dysfunction, and as in childhood, these conditions can respond to remedial movement programmes. It is an exciting prospect that many of these debilitating conditions could be prevented by movement- and balance-oriented remedial education in childhood. All this strengthens the case for proactive programmes in childhood.

The clinical methods described in this book will enable the doctor to do more than take a history of development. It describes a thorough clinical examination to demonstrate motor immaturity signs in retained primitive reflexes. The link between these findings and the actual difficulties in the classroom can be explained to teachers and parents and an easily understood programme implemented. This is a fulfilling role for the doctor and empowering to parents and teachers.

I hope this book will be of interest to paediatricians (acute and community) as well as to primary care doctors. I hope it inspires school doctors. The section comparing the various schools of thinking in the tour and movement problems (sensory integration, Vojta, Bobath, INPP) will be particularly interesting to the school doctor. I myself have been aware of these systems and have referred children to various therapists practising these methods, but have not been quite sure of their precise differences in approach.

I hope it rekindles an interest in understanding neuro-development and in primary care developmental surveillance. Can we prevent this predicted epidemic of mental health problems in the future?

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