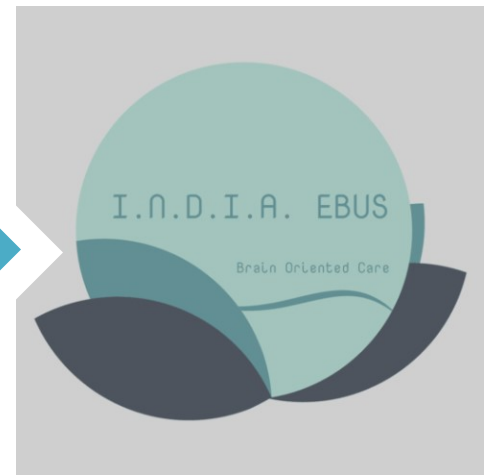


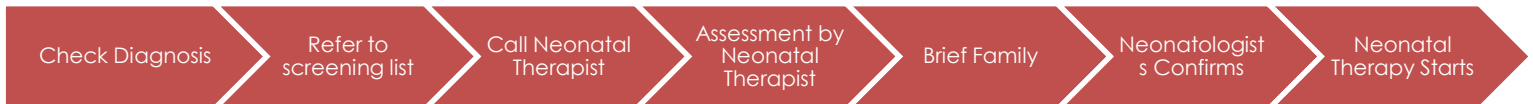


# Neonatal Therapy

Neonatal Therapy is the art and science of integrating typical development of the infant and family into the environment of the NICU. At this early point in the lifespan, Neonatal Therapy promotes optimal long-term developmental outcomes and nurtures infant-parent relationships by addressing the following synergistic neurodevelopmental systems: neurobehavioral, neuromotor, neuroendocrine, musculoskeletal, sensory, and psychosocial. These systems provide the foundation for the development of functional skills. (Sue Ludwig, 2019)



## Neonatal Therapy Referral Guide



Diagnosis		Overview of Neonatal Therapy Content
<input type="checkbox"/>	Preterm (Birth at less than 27 0/7 weeks)	Assessment/Evaluation – Standardized, Observational, Non-Standardized
<input type="checkbox"/>	Low birth Weight (<1500g)	Continuous /ongoing <input type="checkbox"/> Environment (including equipment) <input type="checkbox"/> Neurobehavior <input type="checkbox"/> Neuromotor <input type="checkbox"/> Pre-feeding skills <input type="checkbox"/> Oral feeding and Swallowing (non-instrumental assessment) <input type="checkbox"/> Musculoskeletal <input type="checkbox"/> Sensory <input type="checkbox"/> Family
<input type="checkbox"/>	MAS	Interpreting Results Continuous /ongoing <input type="checkbox"/> Utilize critical thinking skills <input type="checkbox"/> Synthesize information
<input type="checkbox"/>	Perinatal hypoxia with HIE	Treatment Planning Continuous /ongoing <input type="checkbox"/> Determine frequency and duration of treatment <input type="checkbox"/> Set specific goals
<input type="checkbox"/>	MMC	
<input type="checkbox"/>	RDS	Treatment/Intervention Family
<input type="checkbox"/>	Downs Syndrome	<input type="checkbox"/> Educate/Guide/Promote parental participation and independence in early parenting skills through transition to home. <input type="checkbox"/> Provide psychological support. <input type="checkbox"/> Facilitate bonding and attachment.
<input type="checkbox"/>	Seizure Disorder	ADLs: <input type="checkbox"/> Feeding o Facilitate/Support:
<input type="checkbox"/>	Torticollis/Plagiocephaly	<input type="checkbox"/> Oral-sensory-motor development <input type="checkbox"/> Pre-feeding skills <input type="checkbox"/> Transition to oral feeding (not including instrumental assessment)
<input type="checkbox"/>	Intraventricular hemorrhage	<input type="checkbox"/> Sleep o Protect sleep o Facilitate/support: <input type="checkbox"/> Transition to sleep <input type="checkbox"/> Safe sleep practices



	<ul style="list-style-type: none"> <li>○ Facilitate: <ul style="list-style-type: none"> <li><input type="checkbox"/> State regulation</li> <li><input type="checkbox"/> Self-regulation</li> <li><input type="checkbox"/> Neuromotor stability</li> <li><input type="checkbox"/> Play/Interaction</li> </ul> </li> <li>○ Assist with attainment of age appropriate developmental skills through guided exploration of and interaction with the environment</li> </ul>
<input type="checkbox"/>	Abnormal cranial ultrasound (Gr 3 or 4 bleed, PVL, congenital anomaly)
<input type="checkbox"/>	IUGR
<input type="checkbox"/>	CTEV
<input type="checkbox"/>	Multiple congenital abnormalities
<input type="checkbox"/>	BPI
<input type="checkbox"/>	Feeding issues
<input type="checkbox"/>	Congenital abnormalities of the central nervous system
<input type="checkbox"/>	Asphyxia neonatorum (5 min apgar <7)
<input type="checkbox"/>	Hypoglycaemia (symptomatic or severe/prolonged)
<input type="checkbox"/>	Infection (especially CNS)
<input type="checkbox"/>	Ventilation >48 hours (IPPV / oscillation)
	<p><b>Neurobehavioral</b></p> <p>Facilitate/Support:</p> <ul style="list-style-type: none"> <li>○ Autonomic Regulation</li> <li>○ Motor Regulation</li> <li>○ State Transition/Regulation</li> <li>○ Attention/Interaction</li> <li>○ Self-regulation</li> </ul> <p><b>Neuromotor</b></p> <p>Facilitate/Support:</p> <ul style="list-style-type: none"> <li>○ Neurodevelopmental Positioning</li> <li>○ Neurodevelopmental Handling</li> <li>○ Development of normal movement patterns</li> <li>○ Normal reflex development</li> <li>○ Normal tone development and tonal changes</li> </ul> <p><b>Musculoskeletal</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Facilitate/Support development of normal posture and alignment</li> <li><input type="checkbox"/> Prevent or mitigate effects of iatrogenic deformities</li> <li><input type="checkbox"/> Facilitate/support development of antigravity movements and symmetric strength</li> <li><input type="checkbox"/> Improve/Promote physiologic tolerance to activity</li> </ul> <p><b>Sensory</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Facilitate/Protect the typical progression of sensory development of the following systems: <ul style="list-style-type: none"> <li>○ Tactile</li> <li>○ Proprioceptive</li> <li>○ Vestibular</li> <li>○ Gustatory</li> <li>○ Olfactory</li> <li>○ Auditory</li> <li>○ Visual</li> </ul> </li> <li><input type="checkbox"/> Facilitate/support sensory integration</li> </ul> <p><b>Pain</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Provide non-pharmacological interventions</li> </ul>

## Neonatal Therapy Process

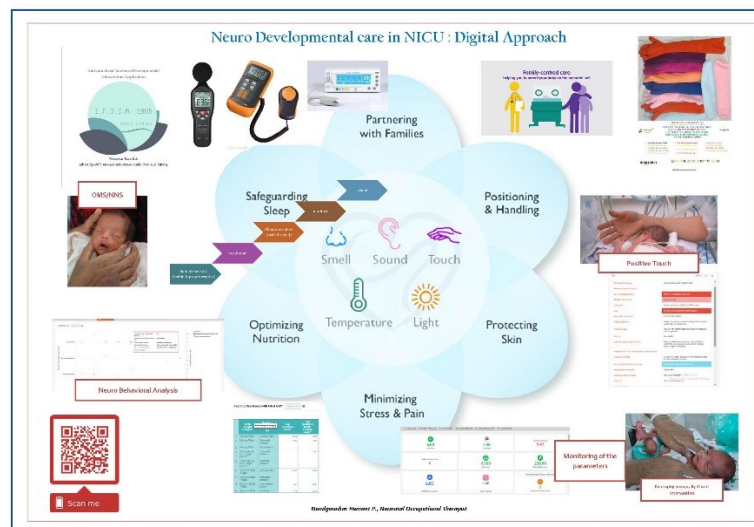


## Standardized Testing by Neonatal Therapist

Referral Age	Name of the test	Description
34 weeks post conceptual age	<b>The Test of Infant Motor Performance (TIMP)</b>	<p>The TIMP is a test of functional motor behaviour in infants. The TIMP can be used to assess infants between the ages of 34 weeks postconceptional age and 4 months post-term. The test assesses the postural and selective control of movement needed for functional motor performance in early infancy and has been shown through research to:</p> <ol style="list-style-type: none"> <li>1. discriminate among infants with varying degrees of risk for poor motor outcome based on perinatal medical conditions</li> </ol>



		<ol style="list-style-type: none"> <li>predict 12-month motor performance with sensitivity 92% and specificity 76% and preschool motor performance with sensitivity 72% and specificity 91% at 3 months of age</li> <li>be sensitive to the effects of therapy provided to high risk infants in the special care nursery or home exercise programs offered to premature infants post-hospital discharge</li> <li>reflect demands for movement placed on infants by caregivers in daily life interactions</li> <li>diagnose motor developmental delay from 34 weeks postconceptional age through 4 months post term based on age standards.</li> </ol>
<b>Full term</b>	<b>Dubowitz neonatal neurological examination (CJ., 2013)</b>	The exam consists of 34 items organised into six groups: tone, tone patterns, reflexes, movements, abnormal signs and behaviours.
<b>16 days corrected age</b>	The Bayley Scales of Infant and Toddler Development, Third Edition (Bayley-III; Bayley, 1993, 2006)	BSID - is an individually administered instrument designed to assess the developmental functioning of infants, toddlers, and young children aged between 1 and 42 months. The Bayley-III provides coverage of the following five domains: cognitive, language, motor, adaptive, and social-emotional development. These domains are critical to the comprehensive assessment of young children, as they are key in documenting delays and are pertinent to informing response to intervention efforts.



## References

- CJ., W. (2013). *Arch Dis Child Educ Pract Ed*, 148.
- Sue Ludwig. (2019). *National Association of Neonatal Therapists (NANT) Web site*. Retrieved from Resources: <http://www.neonataltherapists.com>