

# Development and Supportive Care (DSC) Foundation for Newborn & Children (India)

Workshop on  
Developmentally Supportive Care (DSC) in Premies &  
Neuroprotection in the NICU



Chief Scientific Editor  
**Dr Amitava Sengupta**

**Work Book**  
Edition August 2019



**Development and Supportive Care (DSC)  
Foundation for Newborn & Children (India)**

B - 106, Chitranjan Park, New Delhi - 110 019, India

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## Foreword



The field of Neonatology has experienced some remarkable progress over the last four decades in care of the newborn. This has reflected with dramatic reductions in both neonatal and infant mortality and has enabled the neonatal team to save more babies of lower gestational age and extremely low birth weight (ELBW). In the present times, the incidence of prematurity is high in both western and eastern worlds. **However, morbidity rate of neurodevelopmental impairment has not decreased for this population.**

The preterm infant experiences a hostile environment in the intensive care (NICU) setting as compared to the womb. This altered sensory experience can have a negative impact on an infant's brain development.

The in-utero environment of a developing fetus is characterized by generalized extremity flexion and containment, limited light and noise exposure, sleep cycle preservation, and unrestricted access to mother via somatosensory, auditory, and chemosensory pathways. This environment is favorable for positive sensory input which is crucial for normal fetal brain development.

A newborn preterm infant is deprived of these basic developmental needs upon transition from the womb to the environment of the newborn intensive care unit. This environment is typically characterized by painful procedures, excessive light and noise exposure, interrupted and inadequate sleep, and separation from mother. Negative replaces positive sensory input into the developing fetal brain which, as research shows, can permanently alter normal brain development.

Developmentally Supportive Care (DSC) practices are evidence based interventions that promote newborn brain and neurobehavior development. They minimize the stress of NICU environment, support autonomic stability, normal motor, sensory neurological development and promote behavior state organization.

Developmental Care in the NICU involves efforts in unit design, equipment selection, policies, care protocols, and staff training to maintain the basic physical, sensory, and interpersonal needs of the preterm infant while minimizing exposure to noxious and painful stimuli.

A successful developmental care program is the product of a multidisciplinary team of parents, nurses, nurse practitioners, neonatologists, occupational/physical therapists, administrators, architects, engineers, and social workers.

It requires a shift of attitudes regarding ownership of an infant's care and the personhood of the preterm patient. As neonatal care providers, our goal should be to improve functional outcome, have positive neuro developmental outcome and achieve the gold standard of "INTACT SURVIVAL" of the preterm, fragile and/or critically ill infants.

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