

Webinar on Developmentally Supportive Care

1. Welcome to the webinar on DSC
2. In this webinar, you will learn what is DSC, why we need it and what are the components and methods of DSC
3. We need to remember that the growth of the preterm brain is occurring mainly outside the uterus.
4. The brain can be compared to the piano. What keys are pressed determine if the output from the piano is music or noise. Similarly the outcome of the preterm brain development is determined by the experiences of the preterm neonate.
5. These experiences are provided by the neonatal sensory system. The development of the neonatal sensory system occurs in a particular sequence. The tactile-vestibular sense develops first followed by the gustatory-olfactory. The auditory and visual senses develop last.

Stimulation of the early maturing senses has positive influence on the late maturing senses. Untimely stimulation within this sequence disrupts normal maturation. We therefore need to stimulate the senses in the same sequence as its development.

6. Now, the challenge is to integrate the high technology neonatal care with sensitive individualized approach for optimal neurobehavioral development.
7. This is DSC – providing a structured care environment which supports, encourages and guides the developmental organization of the premature/critically ill infant. In simple words, DSC is to reduce the stress of NICU and promote womb like growth.
8. Now let us see the different methods of DSC in relation to the developing senses. For the earliest maturing tactile sense: A balance is sought between stimulating correctly (by prone position, nesting, swaddling, facilitated tuck and massage therapy) and protection from overstimulation such as pain.
9. Slide 11: Swaddling and facilitated tuck reduce pain and promote development
10. Slide 12: Massage therapy promotes neurobehavior, weight gain, sleep, and it reduces pain , stress and hospital stay.
11. The next important question isdoes the newborn esp the preterm experience pain? Yes ! Yes! Yes! A newborn including a preterm feels, responds to and remembers pain. Exposure to repeated pain could affect the developing brain adversely.
12. You will learn from subsequent videos the recognition of various behavioral and physiological expressions of pain in the neonate. Prevention & minimization of this pain is possible and prevention is better than treatment. Protection from pain is a vital component of DSC and you will more about the methods in videos..
13. After the tactile sense the olfactory-gustatory sense are the next senses to develop. Neonates > 32 weeks not only can smell and taste but discriminate, remember and habituate to them. The breast milk, KMC and non nutritive sucking are best forms of stimulating these senses.

14. NNS reduces length of hospital stay and improves feeding
15. The next system to develop is auditory system. As this is a late developing sense, the preterm needs to be protected from noise. Noise affects physiological variables, reduces sleep and increases stress. It is also associated with hearing loss, IVH, PVL and lower intelligence.
16. Hence it is important to do environmental & behavioral modifications to protect neonates in NICU from noise.
17. Music therapy may help in pacification, stabilizing vital signs, promoting feeding and sleep.. Mothers singing in a soft voice to her baby helps to reduce stress and stimulate appropriately.
18. The last developing sense is vision and the NICU can be harmful for visual development. Exposure to bright light interferes with normal endogenous brain cell activity and results in sleep deprivation. You will see in videos how a healing environment would avoid direct exposure to intense light, use point source of light for procedures and use adjustable light.
19. A healing environment & Protection of sleep are key components of DSC. Sleep is important to promote normal brain growth. The activity occurring during REM sleep is particularly important. Deprivation of sleep results in neuronal death and reduced brain mass. Promote a womb like environment to promote sleep.
20. The best form of DSC is KMC.
21. KMC is exceptional as it provides an appropriate balance between the under-stimulated tactile-proprioceptive system and the overwhelmed later-developing sensory modalities.
22. With this background of the developing senses, the 5 core components of DSC are pain management, protected sleep, developmentally Supportive of activities of daily living, family centred care and providing a healing environment.
23. We need to remember that DSC is a continuous process and not an end. It starts right at birth of the infant The infants are unique and display wide variety of behaviors. DSC has to be individualized for the infant
24. In conclusion, the Key messages
 - a. DSC – reduces stress and promotes growth.
 - b. It is based on the principle of Sequential stimulation of the senses
 - c. KMC is the best form of DSC
 - d. We should remember the 5 core components of DSC
 - e. DSC has to be individualized based on infants' cues .
25. Slide 28: thank you