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### Neonatal pain: Assessment and treatment

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**E**ffective management of procedural and postoperative pain in neonates is required to minimize acute physiological and behavioral distress and may also improve acute and long-term outcomes. Pain management in the neonatal ICU remains challenging for many clinicians and in many complex care circumstances. Neonates frequently experience pain as a result of diagnostic or therapeutic interventions or as a result of a disease process. Neonates cannot verbalise their pain experience and depend on others to recognise, assess and manage their pain. Neonates may suffer immediate or long-term consequences of unrelieved pain. Accurate assessment of pain is essential to provide adequate management. Observation scales, which include physiological and behavioural responses to pain, are available to aid consistent pain management. Painful stimuli activate nociceptive pathways, from the periphery to the cortex, in neonates and behavioral responses form the basis for validated pain assessment tools. However, there is an increasing awareness of the need to not only reduce acute behavioral responses to pain in neonates, but also to protect the developing nervous system from persistent sensitization of pain pathways and potential damaging effects of altered neural activity on central nervous system development. Analgesic requirements are influenced by age-related changes in both pharmacokinetic and pharmacodynamic response, and increasing data are available to guide safe and effective dosing with opioids and paracetamol. Regional analgesic techniques provide effective perioperative analgesia, but higher complication rates in neonates emphasize the importance of monitoring and choice of the most appropriate drug and dose. There have been significant improvements in the understanding and management of neonatal pain, but additional research evidence will further reduce the need to extrapolate data from older age groups.

#### Recent Publications

1. Postoperative pain management in children: Guidance from the pain committee of the European Society for Paediatric Anaesthesiology (ESPA Pain Management Ladder Initiative) Paediatric Anaesthesia 2018 | journal-article DOI: 10.1111/pan.13373.

#### Biography

Dr. Dmytro has completed his PhD at the age of 24 years from Vinnitsa national medical University and postdoctoral studies from Odessa National medical university. Now I am a chief PICU Vinnitsa national medical university and Vinnitsa regional children hospital, a chief – editor Pain Medicine Journal (<http://painmedicine.org.ua>). I have published more than 200 papers (Ukrainian journal) in more 15 reputed journals. ESPA ACORN Member (representative ESPA member –Ukraine). Reviewer US-Medical Science Journal.

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