

REFERENCES :

TITLE: **Perinatal Neuroscience and Skin-to-Skin Contact (part 1 / 4)**

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OBJECTIVES

1. Neurobehaviour

- A. Fetal brain growth. (1-7)
- B. Understanding components. (2;8;8-10)
- C. The behavioural programs. (11)
- D. Neonate mammal behaviour. (12-17)
- E. Behaviour determinants. (11;18-21)

2. Perinatal physiology

- A. Human perinatal behaviour. (18;22-24)
- B. Attachment and regulation. (5;25;25)
- C. Physiology of transition. (Critical period) (10;26)
- D. Competence of prematurity. (11;27;28)
- E. Definition of KMC. (29-31)

3. Physiology of separation

- A. Protest despair behaviour. (25;32-37)
- B. Physiologic effects of crying.(38-41)
- C. Schore's perspective. (6;34;42)
- D. Scorpions !!! (43;44)

Reference List

- (1) Hofer MA. Early relationships as regulators of infant physiology and behaviour. *Acta Paediatr* 1994;Suppl 397:9-18.
- (2) McCain MN and Mustard JF. Reversing the Real Brain Drain: Early Years Study Final Report. 1075 Bay street, Toronto ON M7A 1E9: Ontario Children's Secretariat; 1999.
- (3) Porges SW. Emotion: an evolutionary by-product of the neural regulation of the autonomic nervous system. *Ann N Y Acad Sci* 1997 January 15;807:62-77.
- (4) Schatz C. The Developing Brain. *Scientific American* 1992;267(3):60-7.
- (5) Schore AN. Effects of a secure attachment relationship on right brain development, affect regulation, and infant mental health. *Infant Mental Health Journal* 2001;22(1-2):7-66.

- (6) Teicher M. Developmental Neurobiology of Childhood Stress and Trauma. *Psychiatric Clinics of North America* 2002;25:397-426.
- (7) Laughlin CD. Pre- and Perinatal brain Development and enculturation: a biogenetic structural approach. 1991.
- (8) Despopoulos A, Silbernagl S. *Color Atlas of Physiology*. 3rd Revised and Enlarged ed. Stuttgart: Georg Thieme Verlag; 1986.
- (9) Porges SW. The polyvagal theory: phylogenetic substrates of a social nervous system. *Int J Psychophysiol* 2001 October;42(2):123-46.
- (10) Shore R. *Rethinking the Brain: new Insights into Early Development*. New York: Families and Work Institute, 1997.
- (11) Alberts JR. Learning as adaptation of the infant. *Acta Paediatr* 1994;Suppl 397:77-85.
- (12) Blass EM. Behavioural and physiological consequences of suckling in rat and human newborns. *Acta Paediatr* 1994;Suppl 397:71-6.
- (13) Keverne EB, Kendrick KM. Maternal behaviour in sheep and its neuroendocrine regulation. *Acta Paediatr Suppl* 1994 June;397:47-56.
- (14) Modney BK, Hatton GI. Maternal behaviors: evidence that they feed back to alter brain morphology and function. *Acta Paediatr Suppl* 1994 June;397:29-32.
- (15) Rosenblatt JS. Psychobiology of maternal behaviour: contribution to the clinical understanding of maternal behaviour among humans. *Acta Paediatr* 1994;Suppl 397:3-8.
- (16) Smotherman WP, Robinson SR. Milk as the proximal mechanism for behavioural change in the newborn. *Acta Paediatr* 1994;Suppl 397:64-70.
- (17) Gallagher W. *Motherless Child*. *The Sciences* 1992;12-5.
- (18) Righard L, Alade MO. Effect of delivery room routines on success of first breast-feed. *Lancet* 1990 November 3;336(8723):1105-7.
- (19) Aaron Jones N, McFall BA, Diego M.A. Patterns of brain electrical activity in infants of depressed mothers who breastfeed and bottle feed: the mediating role of infant temperament. *Biological Psychology* 2004;67:103-24.
- (20) Ohgi S, Fukuda M, Moriuchi H, Kusumoto T, Akiyama T, Nugent JK et al. Comparison of Kangaroo Care and Standard Care: Behavioural Organization, Development and Temperament in Healthy, Low-Birth-Weight Infants Through 1 Year. *Journal of Perinatology* 2002;22:374-9.
- (21) Rojas MA, Kaplan M, Quevedo M, Sherwonit E, Foster LB, Ehrenkranz RA et al. Somatic growth of preterm infants during skin-to-skin care versus traditional holding: a randomized, controlled trial. *J Dev Behav Pediatr* 2003 June;24(3):163-8.

- (22) Koepke JE, Bigelow AE. Observations of Newborn Suckling Behaviour. *Infant Behaviour and Development* 1997;20(1):93-8.
- (23) Widstrom AM, Ransjo-Arvidson AB, Christensson K, Matthiesen AS, Winberg J, Uvnas-Moberg K. Gastric suction in healthy newborn infants. Effects on circulation and developing feeding behaviour. *Acta Paediatr Scand* 1987 July;76(4):566-72.
- (24) Graven SN. Early neurosensory visual development of the fetus and newborn. *Clin Perinatol* 2004 June;31(2):199-216, v.
- (25) Bowlby J. Attachment and loss, vol 1: Attachment. New York: Basic Books; 1969.
- (26) MacDorman M.F., Declercq E., Menacker F., Malloy M.H. Infant and neonatal Mortality for Primary Cesarean and vaginal Births to Women with "No Indicated Risk," United States, 1998-2001 Birth Cohorts. *Birth* 2006 September 3;33:175-82.
- (27) Als H, Duffy FH, McAnulty GB, Rivkin MJ, Vajapeyam S, Mulkern RV et al. Early experience alters brain function and structure. *Pediatrics* 2004 April;113(4):846-57.
- (28) McKenna JJ, Thoman EB, Anders TF, Sadeh A, Schechtman VL, Glotzbach SF. Infant-parent co-sleeping in an evolutionary perspective: implications for understanding infant sleep development and the sudden infant death syndrome. *Sleep* 1993 April;16(3):263-82.
- (29) Cattaneo A, Davanzo R, Bergman N, Charpak N. Kangaroo mother care in low-income countries. *International Network in Kangaroo Mother Care. J Trop Pediatr* 1998 October;44(5):279-82.
- (30) Rey SE, Martinez GH. Maejo racional del nino prematuro. Proceedings of the Conference 1 Curso de Medicina Fetal y Neonatal, 1981;Bogota, Colombia: Fundacion Vivar, 1983. (Spanish).(Manuscript available in English from UNICEF, 3 UN Plaza, New York, NY: 10017).
- (31) Whitelaw A, Sleath K. Myth of the marsupial mother: home care of very low birth weight babies in Bogota, Colombia. *Lancet* 1985 May 25;1(8439):1206-8.
- (32) Harlow HF. The nature of love. *American Psychologist* 1958;13:673-85.
- (33) Kjellmer I, Winberg J. The neurobiology of infant-parent interaction in the newborn: an introduction. *Acta Paediatr Suppl* 1994 June;397:1-2.
- (34) Schore AN. The effects of early relational trauma on right brain development, affect regulation, and infant mental health. *Infant Mental Health Journal* 2001;22(1-2):201-69.
- (35) Kanitz E., Tuchscherer M., Puppe B., Tuchscherer A., Stabenow b. Consequences of repeated early isolation in domestic piglets (*sus scrofa*) on their behavioural, neuroendocrine and immunological responses. *Brain, Behaviour and Immunity* 2004;18:35-45.

- (36) Morton D, Thierry B, Peretta G, Lankeit M, Ljungberg T, van Hooff J A R A M, and Scott L. The welfare of non-human primates used in research. Report of the Scientific Committee on Animal health and Animal Welfare. European Commission Health and Consumer Protection Directorate-general; 2002 Dec 17.
- (37) Barker DJ, Eriksson JG, Forsen T, Osmond C. Fetal origins of adult disease: strength of effects and biological basis. *Int J Epidemiol* 2002 December;31(6):1235-9.
- (38) Anderson GC. Current knowledge about skin-to-skin (kangaroo) care for preterm infants. *J Perinatol* 1991 September;11(3):216-26.
- (39) Christensson K, Cabrera T, Christensson E, Uvnas-Moberg K, Winberg J. Separation distress call in the human neonate in the absence of maternal body contact. *Acta Paediatr* 1995 May;84(5):468-73.
- (40) Ludington-Hoe SM, Cong X, Hashemi F. Infant crying: nature, physiologic consequences, and select interventions. *Neonatal Netw* 2002 March;21(2):29-36.
- (41) Michelsson K, Christensson K, Rothganger H, Winberg J. Crying in separated and non-separated newborns: sound spectrographic analysis. *Acta Paediatr* 1996 April;85(4):471-5.
- (42) Schore AN. Dysregulation of the right brain: a fundamental mechanism of traumatic attachment and the psychopathogenesis of posttraumatic stress disorder. *Aust N Z J Psychiatry* 2002 February;36(1):9-30.
- (43) Bergman NJ. Clinical description of *Parabuthus transvaalicus* scorpionism in Zimbabwe. *Toxicon* 1997 May;35(5):759-71.
- (44) Bergman NJ. Scorpion sting in Zimbabwe. *S Afr Med J* 1997 February;87(2):163-7.