

Some Research Related to Preterm Infants

Preterm Infant Massage in Five Days: Preterm infants gained more weight following as few as 5 days of massage therapy. Dieter, J., Field, T., Hernandez-Reif, M., Emory, E and Redzepi, M. (2003). Preterm infants gain more weight and sleep less following 5 days of massage therapy. Journal of Pediatric Psychology, 28, (6) 403-411.

Preterm Neonates' Responses to massage and Heelsticks: Routine heelstick procedures and tactile-kinesthetic massage were performed on stabilized preterm neonates to examine the differential effects on Transcutaneous Oxygen Tension (TcPO₂). TcPO₂ levels during the heelstick were significantly lower than during the massage stimulation. The findings indicate that social forms of touch such as massage do not appear to have a medically compromising effect on TcPO₂. Morrow, C., Field, T., Scafidi, F.A., Roberts, J., Eisen, L., Larson, S.K., Hogan, A.E., and Bandstra, E.S. (1991). Differential effects of massage and heelstick procedures on Transcutaneous Oxygen Tension in preterm neonates. Infant Behavior and Development, 14, 397-414.

Preterm Newborns Gain More Weight: Preterm infants gained 47% more weight, became more socially responsive, and were discharged 6 days earlier at a hospital cost savings of \$10,000 per infant (or 4.7 billion dollars if the 470,000 preemies born each year were massaged). The underlying biological mechanism for weight gain in the massaged preterm newborns may be an increase in vagal tone and, in turn, an increase in insulin (food absorption hormone). Field, T., Schanberg, S. M., Scafidi, F., Bauer, C. R., Vega-Lahr, N., Garcia, R., Nystrom, J., & Kuhn, C. M. (1986). Tactile/ kinesthetic stimulation effects on preterm neonates. Pediatrics, 77, 654-658.

Although the underlying mechanism for this relationship between massage therapy and weight gain has not yet been established, possibilities that have been explored in studies with both humans and rats include (a) increased protein synthesis, (b) increased vagal activity that releases food-absorption hormones like insulin and enhances gastric motility and (c) decreased cortisol levels leading to increased oxytocin. Field, T. (2001). **Massage therapy facilitates weight gain in preterm infants.** Current Directions in Psychological Science, 10, 51-54.

Preterm Newborns Sleep Better: Preterm infants who were massaged before sleep fell asleep more quickly and slept more soundly with better sleep patterns. They showed improved weight gain as compared to infants who were not massaged before sleep. Scafidi, F., Field, T., Schanberg, S., Bauer, C., Vega-Lahr, N., & Garcia, R. (1986). Effects

of tactile/kinesthetic stimulation on the clinical course and sleep/wake behavior of preterm neonates. Infant Behavior and Development, 9, 91-105.

Preterm Newborns Have a Better Clinical Course: Preterm Infants received tactile/kinesthetic stimulation over a 10-day period. The infants averaged 21% greater weight gain per day and spent more time awake and active during sleep/wake behavior observations. Scafidi, F., Field, T., Schanberg, S., Bauer, C, Tucci, K., Roberts, J., Morrow, C., & Kuhn, C.M. (1990). Massage stimulates growth in preterm infants: A replication. Infant Behavior and Development ,13,167-188

Preterm Infants Who Benefit the Most From Massage: Preterm infants received three daily 15-minute massages for 10 days. The massage therapy infants gained significantly more weight per day than did the control infants. For the massage therapy group, the pattern of greater caloric intake and more days in Intermediate care before the study period along with more obstetric complications differentiated the high from the low weight gainers, suggesting that the infants who had experienced more complications before the study benefited more from the massage therapy. Scafidi, F., Field, T., & Schanberg, S. (1993). Factors that predict which preterm infants benefit most from massage therapy. Developmental and Behavioral Pediatrics, 14, 176-180.

Field, T (2002). **Preterm infant massage therapy studies: An American approach.** Seminars in Neonatology, 7, 487-494.

Preterm Infants Develop Better: Preterm infants who received massage therapy as newborns showed greater weight gain and more optimal cognitive and motor development eight months later. Field, T., Scafidi, & Schanberg, S. (1987). Massage of preterm newborns to improve growth and development. Pediatric Nursing, 13, 385-387.

Preterm Infants' Weight Influences Massage Therapy Benefits: In a review of preterm infant massage studies, massage therapy was found to facilitate weight gain only when the intervention was started when the preterm infant weighed between 1100 and 1300 g. Hernandez-Reif, M., Field, T., Diego, M., & Beutler, J. (2001). Letter-to-the-Editor: Evidence-Based Medicine and Massage. Pediatrics, 108 (4), 1053.

Field, T. (2001). **Massage therapy facilitates weight gain in preterm infants.** Current Directions in Psychological Science, 10, 51-54.