AMTA Position Statement Proposal Form

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BACKGROUND INFORMATION:

Research has shown that neonatal handling affects the neurochemical brain development of certain regions in the brain that regulate the response to stress[7]. The benefits of massage therapy for pre-term infants **have** been well documented in several studies; some of the cited research involves small sample sizes, taken together, however, the total research cited is supportive. These benefits include the following:

- Massage is a cost-effective therapy for pre-term infants.[1]
- Pre-term infants gained more weight with just five days of massage.[1,3,5,6]
- Massage therapy by mothers in the perinatal period serves as a strong time cue, enhancing coordination of the developing circadian system with environmental cues.[2]
- Over the 6-week period, the massage therapy infants gained more weight, showed greater improvement on emotionality, sociability, and soothability temperament dimensions and had greater decreases in urinary stress catecholamines/hormones (norepinephrine, epinephrine, cortisol).[3]
- Infants receiving massage showed fewer sleep delay behaviors and had a shorter latency to sleep onset by the end of the study.[4]
- Massage may have a stress reducing effect on pre-term infants in the NICU.[7]
- Reduction of illness and diarrheal episodes in orphaned children in Ecuador.[8]
- Improve quality of sleep and reduce sleep-disordered breathing in Low Birth Weight babies.[9]

RATIONALE:

There is a clear and consistent correlation between the effects of massage and the development of infants. The importance of touch to infants (especially pre-terms) needs to be stressed in our fast paced, high stress society. This position supports the following core values of AMTA:

- We are a diverse and nurturing community working with integrity, honesty and dignity.
- We believe that massage benefits all.

The position also supports the 10-30 Year Vivid Descriptions in the AMTA Strategic Plan:

- People recognize the power of touch to affect the mind/body/spirit continuum.
- The role of massage therapy will be expanded in all practice settings
- AMTA members are the choice for massage as a routine part of society's health and well-being.
- There will be international recognition for the value of massage. All societies will be educated and accept massage therapy and AMTA will be a global networking resource for massage therapy and therapists.

POSITION STATEMENT:

It is the position of the American Massage Therapy Association (AMTA) that newborns (especially pre-term infants) may benefit from massage therapy.

REFERENCES:

1. Dieter, J.N.I., Field, T., Hernandez-Reif, M., & Emory, E.K. (In Review). Preterm infants gain more weight following five days of massage therapy. Acta Pediatrica.

   RESULTS: The stimulated neonates averaged a 47% greater weight gain per day (mean 25 g versus 17 g), were more active and alert during sleep/wake behavior observations, and showed more mature habituation, orientation, motor, and range of state behavior on the Brazelton scale than control infants. Finally, their hospital stay was 6 days shorter, yielding a cost savings of approximately $3,000 per infant. These data suggest that tactile/kinesthetic stimulation may be a cost effective way of facilitating growth and behavioral organization even in very small preterm neonates.

2. Ferber, S.G., Laudon, M., Kuint, J., Weller, A., & Zisapel, N. (2002). Massage therapy by mothers enhances the adjustment of circadian rhythms to the nocturnal period in full-term infants. Journal of Developmental and Behavioral Pediatrics, 23, 410-415.

   The objective of this study was to investigate the effect of massage therapy on phase adjustment of rest-activity and melatonin secretion rhythms to the nocturnal period in full-term infants. Rest-activity cycles of infants (measurement 1, n = 16) were measured by actigraphy before and after 14 days of massage therapy (starting at age 10 [+/-4] d) and subsequently at 6 and 8 weeks of age. 6-Sulphatoxymelatonin excretion was assessed in urine samples at 6, 8, and 12 weeks of age (measurement 2, n = 21). At 8 weeks the controls revealed one peak of activity at approximately 12 midnight (11 p.m.-3 a.m.) and another one at

approximately 12 noon (11 a.m.-3 p.m.), whereas in the treated group, a major peak was early in the morning (3 a.m.-7 a.m.) and a secondary peak in the late afternoon (3 p.m.-7 p.m.). At 12 weeks, nocturnal 6-sulphatoxymelatonin excretions were significantly higher in the treated infants (1346.38 +/- 209.40 microg/night vs 823.25 +/- 121.25 microg/night, respectively; <.05). It is concluded that massage therapy by mothers in the perinatal period serves as a strong time cue, enhancing coordination of the developing circadian system with environmental cues.

3. Field, T., Grizzle, N., Scafidi, F., Abrams, S., & Richardson, S. (1996). Massage therapy for infants of depressed mothers. Infant Behavior and Development 19, 109-114.

METHOD: Forty full-term 1- to 3-month-old infants born to depressed adolescent mothers who were low socieconomic status (SES) and single parents were given 15 minutes of either massage or rocking for 2 days per week for a 6-week period.

RESULTS: The infants who experienced massage therapy compared to infants in the rocking control group spent more time in active alert and active awake states, cried less, and had lower salivary cortisol levels, suggesting lower stress. After the massage versus the rocking sessions, the infants spent less time in an active awake state, suggesting that massage may be more effective than rocking for inducing sleep. Over the 6-week period, the massage-therapy infants gained more weight, showed greater improvement on emotionality, sociability, and soothability temperament dimensions and had greater decreases in urinary stress catecholamines/hormones (norepinephrine, epinephrine, cortisol).

4. Field,T. & Hernandez-Reif, M. (2001). Sleep problems in infants decrease following massage therapy. Early Child Development and Care, 168, 95-104.

RESULTS: Based on parent diaries the massaged versus the control children (who were read bedtime stories) showed fewer sleep delay behaviors and had a shorter latency to sleep onset by the end of the study. Forty-five minute behavior observations by an independent observer also revealed more time awake, alert and active and more positive affect in the massaged children by the end of the study.

5. Scafidi, F. and Field, T. (1996). Massage therapy improves behavior in neonates born to HIV-positive mothers. Journal of Pediatric Psychology, 21, 889-897.

Assigned randomly 28 neonates born to HIV-positive mothers to a massage therapy or control group. The treatment infants were given three 15-minute massages daily for 10 days. The massaged group showed superior performance on almost every Brazelton newborn cluster score and had a greater daily weight gain at the end of the treatment period unlike the control group who showed declining performance.

6. Scafidi, F. A., Field, T., & Schanberg, S. M. (1993). Factors that predict which preterm infants benefit most from massage therapy. Journal of Developmental & Behavioral Pediatrics,14, 176-180.

Ninety-three preterm infants (M gestational age = 30 wks; M birth weight = 1204 g; M ICU duration = 15 days) were randomly assigned to a massage therapy group or a control group once they were considered medically stable. The treatment group (N = 50) received three daily 15-minute massages for 10 days. The massage therapy infants gained significantly more weight per day (32 vs 29 g) than did the control infants. Treatment and control groups were divided into high and low weight gainers based on the average weight gain for the control group. Seventy percent of the massage therapy infants were classified as high weight

gainers whereas only 40% of the control infants were classified as high weight gainers. Discriminant function analyses determining the characteristics that distinguished the high from the low weight gainers suggested that the control infants who, before the study, consumed more calories and spent less time in Intermediate care gained more weight. In contrast, 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 benefitted more from the massage therapy. These variables accurately predicted 78% of the infants who benefitted significantly from the massage therapy. Thus, these variables can be used to suggest infants who would benefit most from future massage therapy programs.

7. Hernandez-Reif M, Diego M, Field T.. Preterm infants show reduced stress behaviors and activity after 5 days of massage therapy. Infant Behav Dev. 2007 Dec;30(4):557-61. Epub 2007 Jun 4.

   Preterm infants residing in an NICU were randomly assigned to a massage therapy or to a control group. The preterm infants in the massage therapy group received three 15-min massages each day for 5 consecutive days, with the massages consisting of moderate pressure stroking to the head, shoulders, back, arms and legs and kinesthetic exercises consisting of flexion and extension of the limbs. Infant stress behaviors and activity were recorded on the first and last day of the study. Preterm infants receiving massage therapy showed fewer stress behaviors and less activity from the first to the last day of the study. The findings suggest that massage has pacifying or stress reducing effects on preterm infants, which is noteworthy given that they experience numerous stressors during their hospitalization

8. Jump VK, Fargo JD, Akers JF. Impact of massage therapy on health outcomes among orphaned infants in Ecuador: results of a randomized clinical trial. Fam Community Health. 2006 Oct-Dec;29(4):314-9.

   Diarrhea is the second leading cause of death among infants and young children in the developing world. This project investigated whether therapeutic infant massage could reduce diarrheal episodes and decrease overall illness of infants. Infants living in 2 orphanages in Quito, Ecuador, were matched by age and randomly assigned to an experimental or a control condition. The experimental group received an intervention, daily infant massage therapy by orphanage staff or volunteers, which lasted an average of 53 days, and symptoms of illness data were documented daily by volunteers in the orphanages. Results indicated that control group infants had a 50% greater risk of having diarrhea than experimental infants (rate ratio [RR] = 1.54, 95% confidence interval [CI] = 1.18, 2.03, P < 0.001). Control group infants were also 11% more likely than experimental infants to experience illness of any kind (RR = 1.11, 95% CI = 0.96, 1.28, P = 0.17). The implications for the use of therapeutic infant massage, a remarkably inexpensive intervention, are discussed, and the need for further research is highlighted.

9. Kelmanson IA, Adulas EI. Massage therapy and sleep behaviour in infants born with low birth weight. Complement Ther Clin Pract. 2006 Aug;12(3):200-5. Epub 2006 Feb 7.

   This study attempts to evaluate the impact of massage therapy on sleep behaviour in infants born with low birth weight (LBW) in St. Petersburg, Russia. Fifty infants (22 boys, 28 girls) who were born in St. Petersburg between 2000 and 2002 and defined as LBW babies (<2500g at birth) were enrolled onto the study at the age of 2 months. Of these, 41 (19 boys, 22 girls) were light and pre-term infants (gestational age < or =36 weeks), and 9 (3 boys, 6 girls) born light at term. The control group consisted of 50 healthy infants born with LBW who were cross-matched with an experimental group of babies and controlled for gender, gestational age, weight and date of birth. The groups were also matched for proximal geographical distribution in the city. Babies in the experimental group were assigned massage intervention therapy that include gentle rubbing, stroking, passive movements of the limbs and other means of kinaesthetic stimulation performed by professionals until the infant is 8 months old. The findings suggest that 8-month-old LBW infants who received massage intervention were less likely to snore during sleep, required less feeding on waking-up at night, and appeared more alert during the day. These apparent correlations remained significant after adjustment was made for major potential confounders. No statistically significant difference was found in sleep behaviour between LBW infants exposed to massage therapy who were either born pre-term or at term. It is suggested that massage may be a valuable approach to improve quality of sleep and reduce sleep-disordered breathing in infants born with LBW. It is acknowledged that whilst this study does not represent a large sample, it is felt that the findings suggest further investigation and offer an insight into an area previously relatively unexplored.