Massage Therapy for Children with Developmental Disabilities

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Background of Massage Therapy

First Uses:

- The use of massage dates back over 4000 years to ancient China
- Swedish massage was introduced to the United States in the 1850s
- Massage therapy was used throughout the 19th century by American doctors

There is limited high-level evidence, but the theoretical basis for massage includes:

- Reducing muscle tension
- Reducing stress, anxiety, depression
- Promoting overall feelings of calmness

Positively affects the musculoskeletal, circulatory, lymphatic, and nervous systems
What is Massage Therapy?

“Hands on” approach to manipulate muscle and soft tissue

The goal:
To promote healing and overall well-being by decreasing pain and tension

The techniques:
A wide range of techniques with variability in pressure, pace, and modalities that should be altered to treat the needs of the patient

Craniosacral, lymphatic, myofascial, and Swedish massage.
Continuing Education

2 day course and exam through the Liddlekidz Foundation

Training Includes:

- Two days of specialized comprehensive pediatric massage training
- In-class hands on practicum
- Certified Pediatric Massage Therapist (CPMT) Training Manual

Cost: Anywhere from $250-$650, depending on location

“Through this training, participants learn to provide massage therapy for children with special health care needs, who are hospitalized or have been diagnosed with a terminal illness in hospice care.”
Indications

Infant Massage:
- Pre-term/LBW infants

Integumentary System:
- Eczema and psoriasis, burns
- Prevent pressure sores

Musculoskeletal System:
- Juvenile RA, amputations, birth defects, DMD, torticollis, CP

Nervous System:
- Peripheral nerve involvement, CRPS, MS, spina bifida, CP, stroke, ADD, anxiety disorders

Circulatory System:
- Heart failure, raynauds, sickle cell

Respiratory system:
- Pulmonary disease (bronchitis, asthma)

Endocrine system:
- Diabetes, thyroid disorders

Female reproductive system:
- Endometriosis, menstruation

Lymphatic and Immune system:
- HIV, lupus

Cancer and palliative care
Contraindications

- Cancer: risk of metastasis if used over tumor area. Skin sensitivity with radiation treatment
- Fracture in the area
- Broken skin or integumentary conditions resulting in sensitive skin.
- Serious head injuries, meningitis, with circulatory massage.
- Compromised circulatory vessels - circulatory massage

Precautions

- Children being uncomfortable with strangers touching them.
- Limited sensation
- Latex Allergy
Empirical Evidence: Massage Therapy for Children with Developmental Disabilities

Cerebral Palsy, Autism Spectrum Disorder, Down Syndrome, Cancer, & Chronic Pain
Massage Therapy for Cerebral Palsy

- Pain is a major limitation in children with CP and often goes undertreated

- Evidence suggests that pain leads to decreased quality of life

- Increased pain = decrease play, socialization, exploration

- Massage therapy seeks to improve relaxation and tension, thus improving pain in order to improve overall quality of life and improved participation of children with CP
Massage therapy in post-operative rehabilitation of children and adolescents with cerebral palsy– a pilot study.
Nilsson S, Johansson G, Ensk€ar K, Himmelmann K

Purpose: “The aim of the current study was to explore the use of massage therapy on pain and distress in conjunction with physiotherapy in children with CP undergoing post-operative rehabilitation.”

Participants: Children with CP, 3-17 years of age. All children had undergone surgery in one or two lower limbs.

Design:
- Intervention group: 30 minutes massage
- Control group: 30 minute rest period
- Both groups: physical therapy
- Outcomes: sleep quality, well-being, HR, and pain regarding the child in addition to qualitative report from therapists

Conclusion:
- No significant differences on well-being, sleep, or pain intensity
- Evidence to suggest the benefit of physical therapy
- Small sample size
- Further research is warranted
Autism is a serious developmental disorder often difficult to treat.

Commonly used therapies:
- Speech-language therapy
- Applied Behavioral Analysis
- Medications (antidepressants, antipsychotics, and stimulants)
- Alternative medicine approaches (biological based therapies, mind body interventions like massage therapy and manipulations)

A recent survey suggested that 11 - 16% of all autistic patients used massage. (Hanson E, Kalish LA, Bunce E, et al.)

Massage affects both the physiologic and psychological state of the recipient.
Purpose: To critically assess the evidence for or against the effectiveness of massage as a symptomatic treatment option for autism.

Design: A systematic review of 132 articles. 6 articles met inclusion criteria.

Individual Article Conclusions:
- Massage therapy is effective
- Significant benefit of massage for sensory profile, adaptive behavior, and language and social abilities (2 articles)
- Beneficial effects of massage for social communication
- Massage plus conventional language was superior for symptom severity and communication attitude

Systematic Review Conclusion: There is limited evidence on the effectiveness of massage as an adjunct to various conventional interventions. However, firm conclusions cannot be drawn. More rigorous randomized clinical trials seem to be warranted.
Massage Therapy for Down Syndrome

- Most common genetic cause of intellectual disability- every 1 in 1000
- Environmental enrichment (EE) paradigm- inanimate stimulation and social stimulation in order to increase sensory-motor stimulation
- Modulation of molecular mediators- IGF-1 and BDNF
- Reduces brain inhibition and promotes recovery of some abilities including visual functions
- EE in animal studies similar to infant massage (IM) in humans
- Accelerates visual function maturation and development of cognitive and social-communication competencies
- DS infants don't have the same environmental experience and effects parent-infant bonding, mood and anxiety
Effect of early multisensory massage intervention on visual functions in infants with Down Syndrome

Gulia Purpura, Francesca Tinelli, Stefania Bargagna, Margherita Bozza, Luca Bastiani, Giovanni Cioni

**Purpose:** The aim of this study was to explore “the effects of an early multi-sensory intervention, based on body massage, on the development of visual function in infants with Down syndrome.”

**Participants:** 20 infants with Down Syndrome between 1-3 months of age; 18 with Trisomy 21 and 2 with translocation

**Design:**
- Intervention group: 10 infants received massage treatment and standard care
- Control group: 10 infants received only standard care
- Massage treatment: Skin-skin contact with mother, kinesthetic stimulation, and mother-infant pre-verbal communication
- Standard care: bi-monthly parent counseling
- Outcomes measured: Visual acuity and stereopsis at 5, 6, 9, and 12 months

**Conclusion:**
- Visual acuity: significant difference at 6 months; massage group had higher score at every stage
- Stereopsis: significant difference at 5, 6, 9, and 12 months
- Study had a small sample size and more research is requested to confirm these results
Massage Therapy for Cancer and Chronic Pain

- Use of massage therapy in children with cancer has ranged from 7%-66% over the course of a decade.
- Massage therapy can serve as a safe intervention to address the secondary impairments of cancer or side effects of cancer treatment.
- Integrative medicine has recently come into play in the treatment of chronic pain, including massage.
- Children who suffer from chronic pain syndromes often miss school, suffer from depression and have a loss of self-esteem.
- While these diagnoses are not strictly classified as developmental delay, children with cancer and chronic pain are at risk for delay.
Purpose: To review relevant literature about massage therapy to assess the feasibility of integrating it as a supportive care intervention for children with cancer.

Participants: A systematic review of 25 clinical trials and 12 observational studies

Design:
- Review included randomized controlled clinical trials and observational studies.
- Outcomes looked at include: pain, WBC count, state anxiety inventory for children, profile of mood states
- Majority of the studies performed on adults, some with adults and children, few just children.
- Weak methodology of some studies.
- Type of massage varied greatly across studies.

Conclusion:
- Massage is a safe, noninvasive, therapeutic modality that has the potential to decrease pain, anxiety, depression, fatigue, constipation, high blood pressure, and support immune function.
- More evidence/ stronger studies are needed with children and infants.
Purpose: Examine effectiveness of adjuvant massage therapy in children and adolescents who were treated in a chronic pediatric pain clinic.

Participants: 57 patients with ages ranging from 9-19 suffering from a variety of chronic pain diagnoses.

Design:
- Pilot study, patients were asked to rate their levels of distress, pain, tension, discomfort, and degree of upset mood on a 1-5 scale before and after massage intervention.
- No control group, massage added to conventional pain treatment

Conclusion:
- Significant decrease in distress, pain, tension, discomfort, and upset mood compared to before massage intervention. More investigation is needed with more rigorous study designs.
Efficacy of Treatment

• SAFE

• No adverse effects reported

• As with all interventions and modalities, be sure to check patient history and review chart for evidence of contraindications
Massage Therapy as it applies to the ICF

Body Structure and Function
- Vision, sensation, pain
- The main goal targets the musculoskeletal system

Activities
- Communication, behavior

Participation
- Social interaction

Personal and Environmental Factors
- Psychological well being, quality of life
Summary

Physical therapy intervention:
- Improve function
- Independence
- Overall participation

Goal of massage therapy:
- Autism: improve social skills and sensory profile
- Down syndrome: improve visual function
- CP: decrease pain, improve quality of life
- Cancer/chronic pain: decrease pain, anxiety, depression, fatigue, constipation, blood pressure, and improve immune function.

Evidence is limited
More research needed with standardized treatment methodology and large sample sizes
Massage Therapy is a very broad term—not clearly defined in the literature
Questions?
References