Science of Therapeutic and Stress Reducing Massage

RIGHT BRAIN LEARNING - THE OPPORTUNITY FOR PROFESSIONAL MASSAGE THERAPISTS

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Most school curricula around the world include some elements of the emotional, spiritual and social aspects of learning. Some are now considering the increasing body of knowledge called Right and Left brain thinking. In this article, I will focus on "Right Brain Learning" because it influences and stimulates the development of the right hemisphere of the brain, the timing of which is critical for developing all the intelligences.

The processes stimulating Right Brain development depend fully on sensory stimulation. In the New Zealand School Curriculum, for example, Right Brain Education is covered by "HAUORA, which in the Maori language means holistic well-being.

In recent years, a growing number of teachers and parents have become concerned with the "Left-Brain Learning only" approach to teaching especially with the present computer-focused education. They ask the simple question: "Do we really want our children to become robots at the cost of the emotional, creative and empathic part of the brain?"

WHICH BRINGS US TO THIS QUESTION: *Why is it important to provide children with the kind of education that develops the whole brain?*

Children's cognitive development depends on the full maturity of the emotional/limbic brain. This maturity is reached in childhood through positive sensory stimulation. Screen-based technologies are all "virtual." To have an appropriate relationship with virtual reality, one must first have a well-developed physical, emotional, cognitive foundation in what used to be the only reality - natural experience, relationships and perception.

This is why some parents who work in Silicon Valley and are on the cutting-edge of modern technology more and more see the necessity of basing their children's primary education on traditional pen-and-pencil art, imagination and sensory stimulation first-the kind of education that is perceived by many as old-fashion and not effective (Wilson, 2011).

Those not nourished with touch and positive sensory stimulation, but instead weaned on technology and virtual reality since early age run the risk of becoming more selfish, less empathic, far less imaginative and alienated. Indeed less connected to the real world.

We know now that excessive exposure of children and young adults to computer and video games is medically classified as a new form of addiction. As Thalemann et al., (2007) reported in their research, the brain MRI of pathologically addicted players showed the same

activation of parietal lobe of the brain similar to the changes registered in the brain of people with other forms of addiction.

ATTENTION DEFICIT DISORDER (ADD), ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD) AND AUTISM (AU)

There are an increasing number of children diagnosed with learning difficulties such as ADD or ADHD. Cases of AU have also dramatically increased. Violence and bullying are common problems in many schools.

Of course, these types of abnormal behaviors have many causes. Therefore, various modalities are used to help these children. In this article, I would like to address one of the most common treatment options offered to parents of children with ADD, ADHD and AU-medicating children as early as toddler age. In many cases, medications are the first option to be considered.

Many recent studies have surveyed the usage of medications to treat ADD, ADHD and AU among children have reported that since 1990s, there has been dramatic increases in the prescription of anti-depressants, stimulants and psychotropic medications for children with these conditions. For example, prescriptions for the following medications for preschoolers increased in the last 15 years (Zito et al., 2000): clonidine by 28.2-fold, stimulants by 3.0-fold, and antidepressants by 2.2-fold. Prescriptions for Methylphenidate (Ritalin) for children between 15 and 18 years increased 311% during the same time. These numbers are simply astonishing. The most disturbing matter is usage of these potent medications on preschoolers in some cases as young as four or five years. Absence of any scientific data that reports the long-lasting impact of these medications on brain development make their prescription for let us say, a six-year-old active child labeled as ADHD is simply outrageous. As correctly pointed out by Zito et al., (2000):

> "These findings are remarkable in light of the limited knowledge base that underlies psychotropic medication use in very young children. Controlled clinical studies to evaluate the efficacy and safety of psychotropic medications for preschoolers are rare. Efficacy data are essentially lacking for clonidine and methylphenidate's adverse effects for preschool children are more pronounced than for older youths."

In 1998, during a Pediatric Academic Societies Meeting in New Orleans, La., Rappley, et al, reported that 57% of 223 Michigan Medicaid enrolees aged younger than four years diagnosed with ADHD received at least one psychotropic medication (usually methylphenidate or clonidine) to treat this condition during a 15-month period in 1995-1996. Cantwell et al., (1997) examined the adverse effects of clonidine on preschoolers and concluded that:

> "Clonidine use is particularly notable because its increased prescribing is occurring without the benefit of rigorous data to support it as a safe and effective treatment for attentional disorders. Cardiovascular adverse effects including bradycardia, atrioventricular block, and syncope with exercise have been reported in children treated with clonidine in combination with other medications for the treatment of ADHD and its comorbidities."

Grinfeld (1998) reported that in 1994 more than 3,000 prescriptions for fluoxetine hydrochloride were written for children younger than one year old!

Even this short review of scientific data shows that we as society is currently experimenting with the health of our children in trying to fit everyone into one average box. This system does not attempt to develop individual approaches to the children who, first of all, need help and assistance from family members and teachers more than anything else does. We know now that one of the Columbine School shooters was on Prozac for several years, supporting the argument that medications are not suppose to be the first choice for children even with slight deviations in behavior especially if they are toddlers!

Albert Einstein's childhood is the best rebuttal to those who feel that medications are the primary solution for children with even the slightest behavioral problems. Einstein began to talk when he was four years old. He was an introverted child who did not pay attention to the teachers or school, and his grades where very low. If he were growing up in our time, he would be labeled as a child with ADD and autism, and placed on more than one medication. Who knows if he ever would have developed the relativity theory and other breakthroughs in the modern physics?

TOUCH/MASSAGE IS POWERFUL TOOL IN ACHIEVING THE "WHOLE BRAIN LEARNING."

Massage therapy occupies a unique place in our modern, fast-paced society because it offers a rare form of sensory stimulation and tactile interaction between two individuals. This interaction is often greatly missing in our everyday life. We are social animals and touch is a much more ancient form of communication than language, which developed only approximately 100,000 years ago (Ott, 2009). Thus, language is a relatively recent development compared to the evolutionary age of our species, Homo sapiens, which is approximately 2.5 million years. Before our predecessors developed language skills, touch was the main method used to express anger, desire, various needs or even help. In our modern society, we have lost these skills despite that the need for them is still great. In my opinion, the need for tactile stimulation is part of our DNA.

In his groundbreaking publication *Touching: the Human Significance of Skin*, A. Montagu, (1971) referred to touch as the "mother of all senses." The author was completely correct because we know now (Fosshage, 2000) that first the components of sense of touch are developed in the embryo approximately around three to four weeks after conception. As stated by Fosshage, (2000):

> "The tactile system is the earliest sensory system to become functional (in the embryo) and may be the last to fade."

If as children, we experienced extra tactile stimulation, we lose it as we grow older and eventually we experience only brief episodes of touch from only our very close relatives. Those who are single may experience touch in the best-case scenario in the form of short handshakes. One may see the importance of touch in the lives of higher primates by observing the interaction of orangutans, gorillas or chimpanzees in the local zoo.

Unfortunately, in our modern Western society we restrict touch because of several taboos, which our ancestors established, passed down to us and which we successfully passed on to

our children. Based on Hunter and Struve's (1998) work, Zur and Nordmarken (2011) formulated a list of the most common taboos associated with touch:

> "* "Don't touch the opposite gender!" This taboo is based on the belief or worldview that sexualizes all or most forms of touch.
> * "Don't touch same-gender friends!" This boundary is based primarily in the homophobic fears prevalent in our culture.
> * "Don't touch yourself!" This injunction stems, in part, from some religious and puritanical doctrines and phobias around self-pleasure and masturbation.
> * "Don't touch strangers!" This command is based on a cultural fear of "the other," a paranoid attitude toward unfamiliar persons and those who are outsiders of one's own group.
> * "Do not touch the elderly, the sick and the dying!" This reflects a negative attitude toward the elderly, the sick, and the dying that manifests itself by segregating them from the rest of the population. The sick and the elderly are often housed away in specialized board and care facilities, where much of time hospital staff do not value touch as an essential part of care.
> * "Do not touch those who are of higher status!" This unspoken rule is prevalent in our culture, where it has been documented that people of higher status or power touch those of lesser status significantly more frequently than the converse."

In 1966, S.M. Jourard conducted a very simple but demonstrative study. The author observed how people from different cultures who know each other behave during casual conversation when they do not suspect the presence of an observer. He simply counted the number of times subjects touched each other within a one-hour period. For example, he reported that in Puerto Rico his subjects touched each other 180 times in an hour, in Paris this number was 110, in the United States only two, and in London, United Kingdom, zero.

Based on this and other studies, Montagu (1971) examined cultural differences towards touch in various countries and pioneered the concept of low-touch/high-touch cultures. Individuals of Anglo-Saxon or Germanic origin occupy the low end of the scale while people of Mediterranean, Latin and African descent belong to high-touch cultures.

This concept is important especially for children because touch is a critical component in the child's brain development, and one of the reasons the idea of providing massage at school is so promising especially for children with Attention Deficit Disorder or Autism. This idea is supported strongly by science. Here are some examples:

1. Hamre et al., (2010) a recently published, important study conducted in Germany of 19 paediatric and family clinics that, over the course of two years, examined the results of Anthroposophic Therapy (AP) for children with Attention Deficit Hyperactivity (i.e., ADHD). This therapy developed by Dr. R. Steiner R. Dr. I. Wegman (2000) had already proven its clinical effectiveness in more than 3,000 kindergartens and schools worldwide.

The Anthroposophic Therapy protocol is an excellent example of successful right-side brain therapy. The therapy consists of active exercise therapy called Eurhythmy Therapy (patients are instructed to perform specific movements with the hands, feet or whole body), art therapy (painting, drawing, clay modelling, music), speech exercises, breathing exercises and Rhythmical Massage Therapy. Rhythmical Massage is based on Swedish massage and was

developed by Dr. I. Wegman, a physician and physiotherapist (Hauschka-Stavenhagen, 1990). It consists of basic massage techniques (effleurage, petrissage, friction, tapotement, vibration) that are combined with gentle lifting and rhythmical stroking movements. The course of Anthroposophic Therapy (AP) consisted of 12 sessions of 45 minutes each, conducted once weekly.

The results of the two-year study confirm that children with ADHD who received Anthroposophic Therapy exhibited long-term reduction of symptoms and improvement of the quality of life. These results were especially prominent among children who received Rhythmical Massage Therapy.

2. The Touch Research Institute actively examined the effects of massage therapy on children with ADD and ADHD abnormalities.

The study conducted by Khilnani et al., (2003) showed that massage therapy helped "students with ADHD by improving short-term mood state and longer-term classroom behaviour." Similar results were obtained earlier by Field et al., (1998). Among other benefits-massage therapy reduces anxiety and enhances EEG patterns and math computations. Adolescents with ADD benefit from massage therapy by decreasing stress and anxiety level.

3. The Peaceful Touch program developed at the Axelsons Institute in Sweden is currently used by 10,000 trained teachers and it affects almost 300,000 Swedish children. This program showed that massage decreases the level of aggression, anxiety and stress in children and allows them to function better in groups. (http://www.axelsons.com/peaceful-touch.php)

4. The Eastern Institute of Technology in Hasting, New Zealand, found that Children Massaging Children in addition to positively influencing academic achievements, also improves children's relationships with their fathers (male figures) at home (http://www.childconnection.org.nz/research)

Another disadvantage of a touchless culture is violent behavior, which is partially triggered by absence of touch. As correctly pointed out by Montagu (1971):

> "When the need for touch remains unsatisfied, abnormal behavior will result."

American neuroscientist J.Prescott (1975) conducted an extensive study in which he reviewed 49 societies. He concluded that in low-touch cultures, a lack of touching and stroking during the earlier or so-called formative period of life was the main cause of violent behavior in adults.

Just by analyzing this short list of sources, one can say that ADD and ADHD can be controlled by far more safe and, in many cases, more effective therapies than medication. In this regard, massage therapy plays key positive role in an effective therapy. As the Touch Research Institute showed, massage decreases the level of the stress-related hormone cortisol and stimulates the production of endorphins or the hormones of happiness. These hormones influences the formation of the Rewards Pathways in the growing brain, thus building the foundation for proper mental, emotional, spiritual and physical development.

It is acknowledged that nutrition and other factors play an important role in child development. However, the building of a healthy foundation in the form of Rewards

Pathways and proper brain growth through various sensory stimulation including tactile stimulation in the form of massage therapy is critical for healthy childhood and brain development.

OPPORTUNITY FOR MASSAGE PRACTITIONER TO BE INVOLVED IN "RIGHT BRAIN LEARNING" AND/OR WORKING ON ADD AND ADHD CHILDREN

There is a growing demand from parents for "Right Brain Learning." Those parents who have children with ADD or ADHD and do not want to drug their children with Ritalin and Prozac, welcome massage lessons in the classroom. Parents have been open to the idea of a professional massage therapist bringing such new modalities to the schools for the benefit of their children. Parents today are time-poor, and they expect their child's school to be involved in preventing problems before they occur. Parents want to have healthy, happy children and peace of mind for themselves. This is, after all, a shared partnership in the child's upbringing.

Different programs are already available for schools where children are working in pairs massaging each other or other children. This idea became very strong in Scandinavian countries especially Sweden and Norway where Axelsons runs a Peaceful Touch Program. In some Australian massage schools, similar modalities are part of the curriculum. In New Zealand and Poland, there are Children Massaging Children (CMC) programs run by Child Connection Trust.

New Zealand is a low-touch culture. With a population of only 4 million, statistics show that 11 people die from suicide every week (the youngest child who committed suicide was only six years old). According to the New Zealand Library of Parliament (Background Note, 2000), New Zealand currently has the second-highest reported suicide rates for young men and women aged 15 to 24 among the 97 countries as reported by World Health Organization. Furthermore, 1,286 New Zealand children's hospital admissions were a result of assault, neglect or maltreatment.

In New Zealand, most massage therapists who introduce CMC program into schools are females in their early 40s. Often their own children became their first client. This is how Caroline started her journey with CMC program:

> "Massage is my profession and passion. I had a huge satisfaction when I introduced the CMC programme at my daughter's school. Kids are so receptive, they learn easily and with joy. I had feedback from the school's principal that the students took their newly gained massage skills home and practiced on their siblings and parents. Thanks to numerous recommendations, it was easy to find new schools. My business developed with this new service. All "marketing stuff" is happening naturally" -Caroline states.

When ideas and benefits of massage are introduced early in life, these schoolchildren will become eager customers of the massage clinics as adults, which is a critical factor to maintain health by eliminating stress, and, of course, it is great for the entire massage industry!

In New Zealand to a large extent, every school has the freedom to decide which program will be run at the given school. Because New Zealand is a low-touch culture country, touch is often perceived as something strange, and its importance and benefits are not really

understood. This is why no school will open its doors to a massage therapist who is not qualified to work with children or certified in the CMC modality.

The best way for a massage therapist to start is to find friendly, accepting schools/ teachers/kindergartens, which are open to innovative methods. Private schools are a good first choice. Often parents, massage therapists and CMC instructors approach the school that their children attend. I advise massage therapists who are interested in implementing various touch and massage programs in schools attend classes on this topic, or conduct personal research and begin by working on their own or friends and relatives' children. In New Zealand, CMC offers courses twice a year during Easter and in January.

Always remember to talk with any school's (or school district's) officials using scientific terminology and data. The fact that you are massage therapist who wants to work on ADD or ADHD children is not enough. Many school officials are not familiar with scientific data that can prove massage is a very important tool in the successful rehabilitation of those children. However, correctly presented cases could make a huge difference for the children in need and for your practice. You may print this article. I also suggest visiting the Touch Research Institute (http://www.miami.edu/touch-research), which is part of the Miami School of Medicine, and read and print its research articles.

As a creator of "Right Brain Learning" programs, I have reason to believe that this is just a beginning of a new era when touch and sensory stimulation will be mandatory in the mainstream education system to balance out the computer-centric "Left Brain" educational approach.

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