

More than a Gesture

The Science and Psychology of Human Touch

Marissa Deason

Senior Thesis

April 18th, 2026

Do you struggle with ADHD? What about anxiety? How about depression? When you're struggling, do you ever just want a hug or for someone to hold your hand and tell you everything is going to be okay? Have you noticed yourself craving physical touch in order to relax or to calm yourself when you are feeling stressed or overwhelmed? Craving physical touch is a real psychological response to a human need; therefore, physical touch should be recognized as a relational mechanism, a powerful tool, and a therapeutic method that plays an important role in human health, human development, and the regulation of the human body and mind. Physical touch is defined as intentional human contact, such as hugging, holding hands, kissing, cuddling, or even a simple touch on the arm, used to communicate emotion, comfort, or support, providing physical and emotional stabilization and, as a by-product, strengthens relationships. When a person experiences safe, consensual, appropriate touch such as hugs, cuddles, holding hands, or a gentle pat on the shoulder, their brain releases hormones such as oxytocin and dopamine, which are the chemicals that contribute to people feeling calm, happy, safe, and emotionally bonded to those around them. Additionally, touch can slow a racing heart rate, reduce blood pressure, support emotional regulation, and lower cortisol, which is the body's most prevalent and primary stress hormone.

Physical touch is considered the most ancient language. Present since the dawn of humanity, physical touch is used for survival, bonding, and communication. Ancient cultures in Egypt, Greece, and Rome viewed touch as a significant source of healing, greeting, and social bonding. In many societies, hand placement, embraces, and ritual touch symbolized trust, authority, and care. In ancient India and China, massage was used as an integral part of

traditional medicine to balance energy, maintain health, and promote physical and spiritual well-being. Additionally, early South Asian traditions integrated touch into social life, such as touching the feet of elders as a sign of respect, and in religious contexts, such as placing a hand on the heart during prayer. In the Bible, the Hebrew culture demonstrated the use of touch to comfort, bless, and heal. “The laying on of hands” was often performed as a physical gesture representing the transfer of blessing or healing as an act of faith, showing both communal support and the authority of God. This can also be referred to as “God's healing hand.” For example, Mark 8:23 says, “He took the blind man by the hand and led him outside the village. When he had spit on the man's eyes and put his hands on him, Jesus asked, “Do you see anything?” Luke 15:20 says, “And he arose and came to his father. But while he was still a long way off, his father saw him and felt compassion, and ran and embraced him and kissed him.” Also, Mark 10:14-16 declares, “But when Jesus saw it, he was indignant and said to them, ‘Let the children come to me; do not hinder them, for to such belongs the kingdom of God. Truly, I say to you, whoever does not receive the kingdom of God like a child shall not enter it.’ And he took them in his arms and blessed them, laying his hands on them.” Additionally, the bible explains touch as a form of greeting just as we see it today. In 2 Corinthians 13:12 it mentions “Greet one another with a holy kiss.”

Physical touch can take many different forms including social touch like hugs or high-fives, supportive touch such as a hand on the shoulder or pat on the back, caregiving touch such as rocking, or comforting contact between parents and children, affectionate touch including but not limited to walking hand in hand or a caress on a cheek, therapeutic touch like massage or medical care, and finally, deep-pressure touch such as a weighted blanket or even

body pressure, which can be used for sensory regulation. Each form serves a different emotional or physiological purpose, yet all contribute to human well-being.

Although research does show the biological importance of physical touch, modern society will often underestimate or avoid the practice. Discomfort, misunderstanding, professional and personal boundaries, cultural norms that discourage closeness, and increased digital usage that replace in-person interactions can reduce everyday human contact and connection. As a result, many people experience what researchers describe as “touch deprivation,” a condition in which individuals receive little to no physical contact over a long period of time. This growing distance highlights the need to better recognize the role of safe, appropriate touch in emotional and psychological health. Recognizing the value of physical touch means acknowledging the benefits in family relationships, therapeutic environments, and mental health treatments, while still maintaining clear standards of consent and personal boundaries.

Physical touch, when used appropriately and ethically, provides measurable psychological and emotional benefits. Many researchers and health-care professionals agree that physical touch plays an important role in emotional regulation and human connection. Others argue that physical touch is unnecessary or potentially inappropriate within therapeutic or professional contexts. Although concerns do exist about appropriateness, physical touch should be recognized as a relational mechanism, a powerful tool, and a therapeutic method because it improves the emotional connections between parents and children, regulates the desires for touch in individuals with ADHD, and alleviates depressive symptoms, and lowers anxiety.

Physical touch should be recognized as a relational mechanism, a powerful tool, and a therapeutic method. It should first be recognized as a relational mechanism because it improves the connections between parents and children. Skin-to-skin contact between parents and infants has been shown to stabilize heart rates, regulate body temperatures, and reduce crying. “Your newborn infant communicates their discomfort by crying. When you nestle your baby against your chest, the reassuring warmth, heartbeat, and familiar scent triggers calming hormones.” (Alabama Regional Medical Center). Skin-to-skin contact, also known as kangaroo care, helps parents and their newborns bond while reducing stress, which is vital for premature infants and those with low birth weights. (LBW infants) During kangaroo care, infants are placed upright against their caregiver’s bare chest, allowing direct skin contact, warmth, and close physical bonding. In the hospital, after birth, parents wear an open front top, and undressed infants are placed on the parents bare chest. Kangaroo care helps to permit eye contact, which supports neurological development, boosts early bonding and attachment, and promotes skin to skin sensation which helps with regulation of multiple components in the baby's body. In addition to being a safe and effective method for LBW babies, this type of infant-parent contact can have a positive physical and psychological healing effect on mothers, who may have had high-risk pregnancies, labors, and/or deliveries. Some additional benefits that may come out of practicing kangaroo care include a reduced risk for mortality, meaning a lower likelihood for deaths, fewer nosocomial infections, which are infections acquired in a hospital due to exposure to bacterias, viruses, or contaminations within medical environments, decreased length of hospital stays, maintenance of neonatal thermal stability such as keeping the infant’s body temperature within a safe range, oxygen saturation, which is the level of oxygen carried in the blood, increased

feeding vigor, and improved growth. “Kangaroo care has many benefits, especially for babies born early or with a low birth weight. It can help stabilize the baby’s heart rate, improve the baby’s breathing pattern and make their breathing more regular, support healthy sleep, including more quiet sleep and longer cycles, encourage your baby’s growth, relieve pain your baby might feel during certain procedures, like a heel prick test, and lower your baby’s risk of hypothermia, serious infections or death.” (Cleveland Clinic) Additionally, senior nursing students at Lee University, Tennessee are taught, “physical touch for the newborns is so important to their development, especially the (NICU) Neonatal Intensive Care Unit babies for prolonged periods of time.” (Deason) “Researchers looked at 31 existing trials that included more than 15,000 infants. Data revealed that early skin-to-skin contact between baby and mother reduced the risk of death by 32% and severe infection, such as sepsis, by 15%.” (Goldblatt) Skin-to-skin contact demonstrates that touch is not merely comforting but biologically regulatory. These early interactions establish emotional security and long-term attachment patterns that influence mental health within adolescence, all the way to adulthood. Each of these findings demonstrates that early physical touch strengthens parent-child attachments and supports physical regulation, reinforcing why touch should be recognized as a relational mechanism.

Affectionate touch in early childhood supports emotional security and self-regulation, brain growth, long-term coping skills, and healthy relationships later in life. “Children learn to be human through touch. Touch is the earliest form of sensory experience for a developing human being. Prenatally, the womb provides a constant sensation of being held. Postnatally, babies expect a similar level of feeling connected through the “in arms” care of mother and others. Experience of touch in early life influences the neurobiological development of multiple systems

in mammals.” (Narvaez) Touch is a fundamental, prenatal-to-postnatal necessity for human development, acting as the primary sensory experience that can shape the neurobiological system and foster social connection. "In arms" care is not merely comforting but essential for regulating a baby's physiology and fostering secure attachment, effectively teaching them to be human. “In a study of 14,000 US children, researchers found that 40% lack strong emotional bonds with their parents—bonds that are crucial to success later in life. Their analysis shows that about 60% of children develop strong attachments to their parents, which are formed through simple actions, such as holding a baby lovingly and responding to the baby’s needs. Such actions support children’s social and emotional development, which, in turn, strengthens their cognitive development. The approximately 40% who lack secure attachments, on the other hand, are more likely to have poorer language and behavior before entering school. This effect continues throughout the children’s lives, and such children are more likely to leave school without further education, employment, or training, the researchers write. Of the 40% who lack secure attachments, 25% avoid their parents when they are upset (because their parents are ignoring their needs), and 15% resist their parents because their parents cause them distress.” (Huber) This evidence shows that consistent affectionate touch helps children associate relationships with safety and trust. These secure attachments become a foundation for emotional regulation, communication skills, and interpersonal stability later in life. Physical touch from parents or caregivers is essential for helping children develop emotional self-regulation, which is defined as the ability to monitor, evaluate, and modify emotional reactions to achieve goals, maintain well-being, and respond appropriately to situations as well as learn long-term coping skills. “A parent/caregiver’s loving touch and physical contact is the foundation for self-regulation. Yes, other aspects of the parent-child relationship, such as a soothing voice and eye gaze, can calm

children and create points of connection. But nothing—nothing comes close to touch in terms of co-regulation and self-regulation. And it’s not just an emotional thing. Research has shown, for example, that skin-to-skin contact helps infants regulate their internal mechanisms like breathing, heart rate and body temperature.” (Hoffman) Parental touch functions as an external regulator while children are still developing internal coping skills. Over time, these repeated calming interactions teach children how to manage emotions independently, demonstrating that physical touch has both immediate and long-term psychological benefits. In the thirteenth century, the king of Sicily, Frederick II, conducted a diabolical experiment: What language would children grow up to speak naturally if they were never spoken to? Frederick took babies from their mothers at birth and placed them in the care of nurses who were forbidden to speak to or even touch the babies, unless it was to feed, bathe, or clothe them. All the babies died from want of touch. This was an experiment that should have never taken place. The tragic outcome illustrates the essential role of human touch in survival and development. Taken together, these findings demonstrate that physical touch between parents and children is not merely affectionate but biologically and relationally essential for healthy emotional development, further proving why physical touch should be recognized as a relational mechanism.

Physical touch should not only be recognized as a relational mechanism but also a powerful tool. It should be recognized as a powerful tool because it regulates attention in individuals with Attention Deficit/Hyperactivity Disorder or ADHD. These individuals often have needs or desires to calm their nervous systems, and physical touch helps accomplish that. In addition, they rely on physical touch as a method of expressing affection and receiving emotional regulation and connection. “Some people with ADHD might have an increased desire for

physical touch, which could involve more frequent hugging, holding hands, or cuddling. For instance, they might reach out to hold their partner's hand during a movie or constantly lean in for a kiss during a casual conversation. It's a tangible way of expressing their affection and connection." (Spelman) Individuals with ADHD may use physical touch to regulate their emotions, as a way to respond instead of reacting impulsively. Touch helps them to maintain a connection with those around them. In addition, physical touch can help them to reduce internal distractions, cognitive interferences, and wandering thoughts. Physical interruptions, such as movements across the room, a clock ticking, or the wind blowing the leaves on the trees can easily divert focus from a task for persons with ADHD. A simple hand-in-hand contact can help to support focus and bring back emotional order. In doing so, physical touch indirectly contributes to improved attention and focus.

People who suffer from sensory processing challenges within their ADHD can also experience debilitating symptoms. These symptoms can be extreme sensitivity to noises or lights, clothing discomfort, picky eating, intense tantrums, constant motion, or clumsiness. Physical touch can function as a form of sensory regulation; sensory regulation is the ability to manage and adjust arousal levels to focus, stay calm, and properly learn. "Children with ADHD who also have sensory processing challenges may be 'sensory seekers.' They often crave specific types of sensory input to help them regulate their responses and physical state. Physical touch can be a significant source of this needed sensory input. Touch can serve as a vital tool for self-regulation. Some children find that touch, particularly deep pressure touch like hugs or squeezes, helps them calm down when feeling stressed, anxious, or overstimulated." (Danish) This evidence demonstrates that physical touch provides calming sensory input for children with ADHD who

experience these kinds of challenges. By reducing overstimulation that creates stress in a person and instead promoting self-regulating touch, one creates the conditions necessary for sustained attention. Concentrating on the physical sensation of something they can touch shifts a person's focus away from distressing thoughts or overwhelming emotions. Feeling something tangible, such as holding hands, hugs, weighted blankets, or even objects with a pleasing texture, can create a sense of calm and stability, making it easier to regulate emotions and reduce mental stress.

ADHD is a prevalent and impairing condition often accompanied by emotional and behavioral challenges. Researchers have examined massage therapy as a therapeutic approach to support regulation and reduce related symptoms in adolescents. "ADHD affects around 5 % of children and adolescents and is an impairing condition that increases the lifetime risk of other disorders, such as depression, anxiety, and substance use. Comorbidity and co-occurring factors can also include emotional dysregulation, learning disorders, and accidents. Research shows how massage therapy aids in the regulation of the emotional and behavioral functioning of adolescents. For example, a few previous studies on massage therapy for children and adolescents with ADHD have reported that adolescents exhibit less aggressive behavior, while a more recent systematic review on deep tissue massage therapy found potential benefits that included reduced ADHD symptoms, anxiety, and asocial behaviour." (Robertz) This research indicates that therapeutic touch, such as massage therapy, can reduce emotional and behavioral difficulties associated with ADHD. All of these findings together reinforce that physical touch can function as an effective therapeutic tool for emotional regulation and sensory stabilization in individuals with ADHD, ultimately supporting improved focus and behavioral control.

Beyond a relational mechanism and a powerful tool, physical touch should also be recognized as a therapeutic method. Physical touch should be recognized as a therapeutic method because it has been shown to alleviate depressive symptoms and lower anxiety. Studies show that physical touch plays a critical role in enhancing and improving physical and mental well-being, with especially pronounced benefits for individuals facing the following health-related challenges. According to Dr. Tiffany Field, “We found that massage actually increases natural killer cells. Natural killer cells are the front lines of the immune system. They kill viral cells, and bacterial cells. We found it first in men who had HIV, and then we studied adolescents who had HIV and found the same results. Then we studied breast cancer and again found an increase in natural killer cells. We think that the reason that happens is because we’re knocking down cortisol levels, the body’s culprit stress hormone. Cortisol kills natural killer cells, and so if we can reduce the stress hormones, we can save natural killer cells.” (Field) The feeling of human touch produces measurable neurochemical responses; the process of neurotransmitters sending messages across nerve cells that affect mood, stress, movement, and cognition, as well as physiological responses. These responses are automatic, involuntary reactions to various stimuli, such as environmental changes or emotions. Physical touch shows observable changes in heart rate, blood pressure, hormone levels, and the nervous systems activity. These measurable responses promote emotional regulation, reduce stress, improve emotional well-being, and support overall mental health. “Hugging and other forms of nonsexual touching cause your brain to release oxytocin, known as the ‘bonding hormone.’ This stimulates the release of other feel-good hormones, such as dopamine and serotonin, while reducing stress hormones, such as cortisol and norepinephrine. These neurochemical changes make you feel

happier and less stressed. Research suggests that being touched can also lower your heart rate and blood pressure, lessen depression and anxiety, boost your immune system, and even relieve pain.” (Holland) As stated above, cortisol is the body’s primary stress hormone that is released during periods of emotional or physical stress. Norepinephrine is a stress-related chemical that helps activate the body’s fight or flight response by increasing alertness and heart rate. Chronic elevation of these stress hormones can damage our bodies, keeping us in a fight or flight response that leads to high blood pressure, heart disease, weight gain, weakened immunity, and other cognitive issues. These hormones and neurotransmitters are activated by physical touch which positively influence stress reduction and emotional stability.

Physical touch can also improve mood and reduce stress by directly affecting the brain chemistry. These effects help explain how touch can alleviate signs of depression. Physical touch supports mental well-being by reducing anxiety, regulating mood-related neurotransmitters, and promoting emotional connection. It stimulates oxytocin, serotonin, and dopamine, chemicals that regulate mood, which can ease loneliness, promote relaxation, and strengthen feelings of connection. Furthermore, Dr. Gazzola, from the Netherlands Institute for Neuroscience states, “Yes, touch substantially improves both physical and mental wellbeing, for example via reduction of pain, anxiety, depression, and stress in adults. But in fact, those with physical or mental health problems (and therefore most in need of support) benefit even more from touch than healthy adults.” (Gazzola) This highlights that touch is a particularly effective tool for reducing depressive symptoms and this demonstrates that individuals with mental or physical health challenges benefit strongly from physical touch.

Physical touch is not limited to human relationships; similar regulatory benefits can also occur through human-animal interaction. Emotional Support Animals, otherwise called ESA, are pets, used as tools, in which their mere presence can provide sensory comfort and emotional stability for individuals experiencing anxiety, which is an excessive worry or fear that interferes with daily functioning; Post Traumatic Stress Disorder or PTSD, a condition that can develop after exposure to traumatic events; and depression, a mood disorder involving persistent sadness, low motivation, and loss of interest. “There are several ways that emotional support animals can help people struggling with anxiety. For one, the simple act of petting an animal can trigger a natural response in the body. It lowers blood pressure and reduces stress levels. For people with social anxiety, an ESA may provide motivation to interact with others. ESAs can offer individuals a sense of stability. The presence of a comforting animal can help build confidence, reducing the chances of panic attacks. ESAs can be beneficial for someone who struggles with navigating stressful life events or daily activities. The companionship that an ESA provides can make you feel better in an anxiety-inducing environment.” (Cerebral) The human-animal bond has existed for thousands of years. To humans, animals give companionship in a world that can feel isolating. So, it’s no surprise that pets are almost a staple in households across the US. Over 38.4% of families own a dog and 25.4% have a cat. This evidence demonstrates that physical touch, such as petting an emotional support animal, can lower stress responses and provide emotional consistency. By reducing physiological stress and increasing feelings of comfort and confidence, the physical closeness between animals and humans help to prevent anxiety and panic-related symptoms. This further supports the idea that physical touch, used as a therapeutic method, provides repeated sensory comfort and can regulate anxiety and strengthen emotional stability.

Temple Grandin is an autistic scientist, animal behaviorist, and professor, as well as a prominent advocate for autism and neurodiversity. Her research on animal welfare and livestock handling demonstrates that calm, consistent physical guidance and sensory awareness significantly reduces stress and improves regulation, even in non-human subjects. Her discovery that cattle become calmer when they experience steady, gentle pressure rather than sudden movements or unpredictable stimuli. This led her to design livestock handling systems that reduce fear and overstimulation. Her work was also influenced by her own experience with autism, a developmental condition affecting communication, social interaction, and behavior, which led her to invent a “squeeze machine” that applies deep pressure to the cows body to produce calming sensory input. This concept parallels how deep-pressure touch, such as hugs or weighted blankets, can help regulate the human nervous system by reducing sensory overload and promoting relaxation. (Grandin) Her studies on cows focus on their sensory world, using her unique visual thinking (influenced by autism) to understand and improve livestock handling, revealing cattle are scared by shadows, reflections, and sudden novelties, leading her to design curved, solid-sided chutes and advocate for calm, non-startling methods like walking backward to move them. These new and inventive ways of handling these large animals create less stressful situations for them and improve their overall welfare, which increases productivity. Grandin’s research shows that handling methods drastically affect cattle behavior, highlighting visual distractions, proper lighting, and consistent pressure (not sudden release) as key to calmer, safer, and more efficient livestock management. (Grandin) This supports the idea that physical touch can ease both stressful situations and depressive symptoms by increasing feelings of safety and calm. Although cows and humans are very different species, both possess nervous systems that

respond to sensory input such as pressure, movement, and touch. Research in neuroscience shows that consistent, predictable sensory input can calm the stress response in many mammals, including humans. Therefore, Grandin's findings help illustrate how physical pressure and gentle contact can regulate emotional and physiological responses. Together, these studies demonstrate that physical touch plays a measurable role in improving emotional well-being and reducing symptoms of anxiety and depression, further reinforcing that physical touch should be recognized as a therapeutic method.

Some critics believe that physical touch can be unnecessary or inappropriate in professional, educational, or therapeutic environments due to concerns about consent, boundaries, and the potential for misuse. First, some institutions discourage physical contact in order to avoid liability or misunderstanding. Although these policies are often well-intentioned, they are primarily designed to reduce legal risk rather than to determine what is developmentally or emotionally beneficial. Avoiding physical touch entirely could ultimately create emotionally distant environments, especially when it comes to younger children who rely on safe, appropriate touch for reassurance and regulation. The issue at hand is not the physical touch itself, but how the act of touch must be practiced with clear guidelines and consent. Research in child development constantly and consistently shows that touch, when used appropriately and in a nurturing way, supports emotional regulation and stress reduction. If touch is eliminated, it may unintentionally remove an important tool for connection and co-regulation.

Others who argue that touch is not beneficial say that it can be misused or harmful if non-consensual. While this concern is a valid one, the potential for misuse does not negate how

healthy, consensual touch is still beneficial. Instead, we should be encouraging the importance of education, training, and clear boundaries. This specific concern should empower parents, guardians, and teachers to teach children about consent and model respect in regard to physical interactions. In fact, teaching this will actually strengthen their understanding of personal boundaries, for themselves and others. Safe touch, such as a soft, reassuring pat on the back, a side hug, or even a full hug with permission, and caregiver contact can coexist with the strict policies created against inappropriate behavior. The focus should be on accountability, oversight, and regulation rather than complete avoidance.

Although concerns about consent, boundaries, and liability are important, they do not outweigh the developmental and emotional benefits of appropriate, consensual physical touch. Recently, even the State of California has changed its views on what is and is not appropriate in regard to hugging. A mandated reporter is an individual in the professions of teaching, medicine, childcare, law enforcement, or social work. They are legally required by the state to report any suspicions of child abuse or neglect to the authorities. In recent training for these mandated reporters, it states that you are currently allowed to hug students. The training emphasizes that appropriate, supportive touch is a natural part of a healthy learning environment. It distinguishes between "nurturing touch" and "suspicious touch" to ensure teachers don't feel they have to be "robots" who can never comfort a child. A quick hug to soothe a crying kindergartener or to celebrate a student's achievement is considered supportive and professional. The mandated reporter training acknowledges that many students view school as a safe place, and that caring gestures from a teacher can be vital to their emotional well-being. Rather than eliminating touch from the environment entirely, institutions should establish clear guidelines

that prioritize safety while still allowing the nurturing contact that supports self-regulation and healthy development.

In conclusion, physical touch should be recognized as a relational mechanism, but also as a powerful emotional and therapeutic tool. Far more than a simple gesture, touch is a deep human need that plays a significant role in connection, healing, and emotional regulation. Research consistently demonstrates that appropriate physical touch strengthens the emotional bond between parents and children, helps individuals with ADHD feel more grounded and regulated, and alleviates symptoms of anxiety, depression, and even distress associated with certain medical conditions. Through its ability to stimulate calming neurological and hormonal responses, touch provides reassurance, comfort, and a sense of security that words alone often cannot achieve.

Although concerns surrounding boundaries, consent, and appropriateness are valid and necessary, these concerns should encourage the responsible and respectful use of touch rather than completely eliminate it. Safe and ethical touch requires awareness, mutual respect, and sensitivity for individual comfort, but when practiced carefully, it becomes a meaningful form of support rather than a risk.

In a world where many people experience loneliness, stress, and emotional disconnection, physical touch remains one of the most natural ways to strengthen human connection. It reassures individuals that they are supported, helps regulate difficult emotions, and reinforces bonds that are essential for healthy relationships. When used with care and genuine intention,

physical touch is not merely beneficial, but it is essential to emotional well-being, relational stability, and our shared humanity.

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