



The biology of touch

Everyone needs a hug, and now science can explain why. Sharon Gray looks at how even the lightest touch keeps you healthy and happy.

WHEN THE BEATLES SANG

“I want to hold your hand,” little did they know that they were really appealing for a medical boost. Forty or so years later, science has shown that physical contact benefits people by improving their health as well as their relationships.

Our sense of touch works via sensory receptors in the skin and deeper tissues. They are located in varying density over the body, but most densely in our fingertips. These receptors transmit signals to the spinal cord and brain stem.

“Touch is as important as breathing,” explains Dr. Tiffany Field, director of The Touch Research Institute at the University of Miami School of Medicine, the world’s first center devoted solely to the study of touch and its application in science and medicine. “Without it, children do not grow and develop.”

In her book, *A Natural History of The Senses*, author Diane Ackerman describes touch as being “as essential as sunlight... In the absence of touching and being touched, people of all ages can sicken and grow touch-starved.” Dr. Field agrees. “Sensory deprivation makes people depressed and immune-compromised,” she says, “and gives them emotional pain and physical damage.”

Why? The fingertips are pointing at a hormone called oxytocin, which is affected by the way we respond to touch. It interacts with dopamine, a brain chemical that makes us feel good. Oxytocin is one of those happy hormones that helps lower blood pressure and stress levels, and can affect everything from how wounds heal to how much we trust other people.

A team from the University of North Carolina studied the effects of hugging on both partners in 38 couples. Their results showed increased levels of oxytocin and reduced cortisol, the stress hormone. Interestingly, the women recorded greater changes after the hugs, suggesting their heart health may benefit more from tactile demonstrations of love.

The way through

The skin, the largest organ in the body, allows us to relate sensitively to the world in which we live and allows us to gain

information on our surroundings. Do you remember Helen Keller? Her teacher Anne Sullivan initially broke into the seven-year-old Helen’s world by running cold water over her hand, and then taught her how to communicate by finger-spelling on the palm of her hand.

At DePauw University in Greencastle, Indiana, Dr. Matthew Hertenstein believes touch can also communicate emotion. Participants in a trial were touched by a stranger they couldn’t see, who had been asked to convey a particular emotion such as anger, fear, love, gratitude and sympathy. Amazingly, they were able to tell each emotion with great accuracy, comparable to visual and vocal emotion tests. “Our study is the first to provide rigorous evidence showing that humans can reliably signal love, gratitude and sympathy with touch,” says Dr. Hertenstein. “These findings raise the interesting possibility that touch may convey more positive emotions than the face.”

To touch or not to touch

Attitudes to touch and physical contact vary greatly between different cultures. In India, it’s common to massage babies daily. The skill of Indian head massage is passed down from parent to child and

practiced regularly across the generations. In Africa, carrying babies close to the body at virtually all times is the norm. In France and Italy, men kiss each other on the cheek as a greeting. In most Asian countries, there is no sexual connotation when male friends hold hands or drape their arms around each others’ shoulders. It denotes an act of respect and affection in Arab cultures.

But how and where you touch someone, however innocently, can be a minefield. Personal intimacy issues and increased awareness of sexual abuse and harassment mean people are more

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cautious about reaching out to each other. Teachers find it easier to have a “no touch” policy due in part to the fear of possible misunderstandings. Physicians rely more and more on high-tech tests and procedures rather than time spent talking to and examining their patients, and workplaces may also impose strict guidelines regarding physical contact to protect against molestation claims.

One result of this touch taboo is that people are wary of physical contact with one another, which can lead to a sense of isolation and loneliness. There is also the disheartening fact that although as babies we are constantly cuddled, as we age there is less and less physical contact with other people. “Older people are touch-deprived, in part because they are often alone and in part because their aging skin may not invite touching in the same way that an infant’s skin does,” says Dr. Field.

Rub it better

If you see massage as touch therapy, it’s not difficult to understand why Dr. Field’s work at the Touch Research Institute

The benefits of massage
Research from the Touch Research Institute at the University of Miami School of Medicine suggests that touch therapy may be able to:

- decrease diastolic blood pressure, anxiety, and cortisol (stress hormone) levels in adults with hypertension.
- decrease the occurrence of headaches, sleep disturbances and distress symptoms and increase serotonin levels in adults who suffer with migraine headaches.
- reduce anxiety and depression and increase the number of natural “killer cells,” which attack tumors, in women with breast cancer.
- reduce anxiety and stress hormone levels in adults with chronic fatigue syndrome and depressed mood.

PHOTOGRAPH: LAUREN MIDDLEY/GETTY IMAGES

discovers such positive benefits. One study looked at adults with Parkinson's disease who received either massage therapy or progressive muscle relaxation twice a week for five weeks. Members of the massage group received higher physician scores on daily-living activities such as bathing, and rated themselves as having improved daily functioning and less disturbed sleep.

Over at the University of Iowa, another study is looking at whether healing touch might be able to boost the immune system of women with advanced cervical cancer and improve the body's natural defences against the disease.

Banishing bone-ache

In a recent study published in the *Archives of Internal Medicine*, it was suggested that massage therapy might also be a good prescription for people with osteoarthritis. As many as 21 million people in the United States suffer joint pain, stiffness and physical disability from osteoarthritis, and it's the most commonly reported chronic condition in elderly people. Typically sufferers are prescribed nonsteroidal anti-inflammatory drugs to relieve symptoms, but these can cause unpleasant and even dangerous side effects. Massage therapy relaxes the muscles that support the joint, increases circulation and promotes lymphatic drainage. The study of people with osteoarthritis of the knee found that one-hour, full-body massages over an eight-week period helped significantly with pain, stiffness and physical function.

Although massage has been proven in numerous studies to have significant health benefits, it can have others, too. Dr. Shelby Taylor, adjunct professor in psychology at California State University, Fullerton, believes that touch can be an important part of charisma. According to research, waitresses who subtly touch a customer as they return change tend to get a bigger tip, while initiating a handshake at a job interview or sales pitch makes you appear more appealing.

But you don't need to be a massage therapist to influence someone's well-being. Make someone's day by doing something as natural as holding hands as you talk, lightly touching a shoulder, and giving – or receiving – a hug. ☺



Sunrise Story

“What I do is about nurturing.”

Joyce Gass, 51, has been a massage therapist since 1986 and runs a successful private practice, Four Hands Healing Sanctuary, in Santa Monica, California. Among her clients are residents of Sunrise of Beverly Hills, where she also teaches t'ai chi.

“I had been treating one of my clients, Katherine, who's now 80, for around 18 months before she moved into Sunrise. She had developed Alzheimer's and had become less mobile, but her daughter-in-law wanted me to continue seeing her. Katherine can't lie on my massage table anymore, so she lies on her bed, and I



Joyce Gass makes a difference for Sunrise residents in California.

work on her legs, feet, arms, hands and face, or I massage her back and shoulders when she's in her wheelchair. She's always happy to see me. During the session, I can jog her into talking about her early life, which is a nice place to go for her.

“Other residents at

Sunrise wanted me to work on them, and they love it! They often really need their shoulders and backs worked on. I can also help blood and lymph circulation in the legs, which can be a big problem. Moving to a new living situation, new people, poor health; this can be a stressful time for seniors, and they hold on to a lot in their bodies.

“What I do isn't deep, or intense – it's about nurturing. So many of my clients simply aren't being touched, and when they are, they move into a more feeling state. My clients open up to me and talk about their pains and joys, because they feel safe and protected.”