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wonder [2]



Sir Isaac Newton once said that the thumb alone would be enough to convince him of God's existence. Our hands, and especially our thumbs, are remarkably sophisticated pieces of body machinery. It's right to regard them with wonder.

Structurally, the hand is one of the most intricate parts of the human body. Almost never still (with fingers flexing at least 25 million times in a lifetime), the hand is both good news and bad news in health care, acting as a diagnostic tool – and as a transmitter of infection. Hand holding, meanwhile, may bring health benefits. Here's more about your hands.

Intricate

Each hand has 27 bones: eight in each wrist, five in each palm and fourteen in the fingers. Your two hands account for more than a quarter of the bones in the body.

Each hand is controlled by 35 muscles; seven are required to control the index finger alone. There are though no muscles in the fingers themselves, they lie instead in the forearm and palm. Tendons tether finger bones to their muscles.

Your fingertips are packed with thousands of nerve endings, detecting heat, touch and pain.

Incessant

From the first time you gripped the obstetrician's fingers upon emerging from the womb your hands have rarely been still, apart from when asleep. They respond continually to a stream of electrical signals from the brain, telling them to move.

The part of the brain driving movement is known as the motor cortex, and a quarter of it is devoted to controlling

the muscles of the hands even though they are a relatively small part of the body. No other creature has such a large proportion of their brain dedicated to controlling their hands.

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More than mechanical movements (for example pushing, pulling, lifting or twisting), hands are often used to embellish speech. One study [3] showed that the most popular public speakers use an average of 465 hand gestures during their talks.

Informative

Your hands can help doctors diagnose disease. Finger clubbing [4] (swelling of the fingertips) can indicate heart or lung disease; cold, white, numb hands are the hallmarks of Raynaud's [5]. Raised yellow lesions on the hands may represent cholesterol build-up; bony knobs on finger joints are associated with arthritis.

Very strong hands [6], meanwhile, may be an indicator of life expectancy. In one study [7] involving nearly 140,000 people in 17 countries, it was reported that people with lower grip strength had a higher mortality rate and were more likely to suffer a heart attack or stroke**.** Grip strength was even suggested to be a more accurate test than blood pressure [8] – for some, at least. For others, such as Arnold Schwarzenegger, the correlation is less clear. He has strong hands, but was born with a faulty heart valve.

Infectious

Clean hands prevent infection, according to the World Health Organization; dirty hands transmit disease. They have launched the "Save Lives: Clean Your Hands [9]" Campaign, promoting hand hygiene as the most important measure to avoid the transmission of harmful germs.

As the winter season approaches, Dr Shobita Rajagopalan, Infectious Disease Specialist in Los Angeles, says that "appropriate hand hygiene, preferably with soap and water, is probably the single most important way to prevent norovirus [10] (the winter vomiting bug) transmission".

Health benefits of a hand-hold

When Dr Pavel Goldstein [11] from the University of Colorado Boulder held his wife's hand during labour, her pain seemed to reduce. Testing his theory in the laboratory by administering mild heat pain to participants' arms, he showed that handholding helped the hurting person to synchronise their heart rate, breathing and brain waves with their partner, reducing their pain.

"Interpersonal touch may blur the borders between self and other," wrote the researchers. When it comes to pain, it seems that a problem shared (through handholding) may actually be a problem halved.

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[1] https://www.readersdigest.co.uk/health/wellbeing/the-wonders-of-the-human-hand [2] https://www.helencowan.co.uk/../tags/wonder [3] https://www.scienceofpeople.com/secrets-of-a-successful-ted-talk/ [4] https://medlineplus.gov/ency/article/003282.htm [5] https://www.health.harvard.edu/blog/cold-hands-raynauds-201412037567 [6] https://www.readersdigest.co.uk/health/health-conditions/strong-hands-strong-heart-does-grip-strength-show-life-expectancy [7] https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(14)62000-6/fulltext [8] http://www.readersdigest.co.uk/health/health-a-z/blood-pressure/high-blood-pressure-treatments-and-remedies [9] https://www.who.int/gpsc/5may/en/ [10] https://www.readersdigest.co.uk/health/health-conditions/9-ways-to-avoid-norovirus [11] https://www.eurekalert.org/pub_releases/2018-02/uoca-hhc022818.php