



	AFTER A VISIT TO THE TOILET	AFTER A VISIT TO THE PLAYGROUND	BEFORE MAKING BREAKFAST	AFTER ORDERING TAKEAWAY	AFTER A SNEEZE INTO THE HANDS
BEFORE WASHING HANDS					
AFTER WASHING HANDS					

JASON HO

PROPER HYGIENE

Wash the hand that breeds

An experiment reveals the amount of bacteria that flourishes on hands that are not cleaned thoroughly

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I WASH my hands frequently. While I don't think there's anything wrong with this, my husband sees it as a sign of obsessive compulsive disorder. He can't understand why I carry a hand sanitiser in my bag, or why I insist that he washes his hands before feeding our daughter.

He thinks I'm paranoid. I think it's just good hygiene.

Seeking to prove my point, I conducted an experiment (see *The Experiment* box) with the help of the Health Promotion Board (HPB) and a microbiologist. The mission: To find out how much germs my hands pick up throughout the day and whether washing them makes a difference in reducing the amount.

My worries were well-founded: With-

out a proper washing, even clean-looking hands can brim with microscopic germs.

Our hands are never totally germ-free, said Dr Tan Ai Ling, a senior consultant microbiologist at Singapore General Hospital's (SGH) department of pathology.

She explained that there are two types of micro-organisms on our hands: While the resident flora is part of our skin, the transient flora is picked up from the environment.

"Most of the time, the micro-organisms are harmless. But if we pick up something that is pathogenic, which can cause infection in humans, we may fall ill," Dr Tan said.

She added that the risk of illness also depends on factors such as our immunity and the amount of germs on our hands.

Common infectious germs include diarrhoea-causing E Coli and salmonella, and viruses such as the influenza virus and Norovirus, which causes gastroenteritis.

ENTER GOOD OL' SOAP AND WATER

Washing your hands regularly greatly reduces the risk of passing on the flu and

other infectious diseases that spread through human contact, said Mr Lam Pin Woon, CEO of HPB.

To help people protect themselves against airborne and droplet-born diseases, HPB launched a hand-washing campaign earlier this month called "Stop the Horror with Soap and Water".

According to Mr Lam, cleaning your hands with soap and water for 15 seconds reduces germ count by 50 to 90 per cent. For a 99 per cent reduction in germs, wash for 30 seconds.

But simply lathering your hands isn't good enough.

"You'll also need to rub them vigorously. Friction is required to effectively remove bacteria on the skin," said Dr Tan.

The HPB recommends an eight-step technique: Wet your hands under running water, apply soap and lather well. Scrub all surfaces in the following order — palm to palm, between the fingers, back of the hands, base of both thumbs, back of the fingers, fingernails and wrists.

Finally, rinse both hands and wipe them dry with a paper towel.

THE EXPERIMENT

The aim: To find out if washing my hands with soap and water regularly can reduce the amount of germs on them significantly.

The method: As I went about my day, I pressed my fingers on specially designed agar plates provided by Dr Tan Ai Ling, SGH's senior consultant microbiologist, before and after washing my hands. Any bacteria would be transferred onto the plates.

The agar plates, containing agar and sheep's blood, are typically used in a laboratory to culture bacteria. Any bacteria on my fingers was transferred onto the agar.

I made the imprints before preparing breakfast for my daughter, and after visiting the office toilet and sneezing.

I also did it after taking my daughter to the playground and before having dinner with my family in a crowded coffeshop.

The next day, I sent the plates to Dr Tan, who interpreted the results.

The conclusion: Depending on the environment I was in, I had picked up bacteria including several bacillus species and staphylococcus. I had even picked up mould at the playground.

According to Dr Tan, the results showed that the amount of bacteria was much reduced — by at least 50 per cent — after I had washed my hands with soap and water.