

RECENTLY, in this paper, Dame Joan Collins bemoaned the handshaking and cheek-kissing culture that she believes was responsible for her catching the flu.

She now wears gloves at every opportunity to avoid the ‘zillions of invisible germs on every surface, from door handles to lift buttons and supermarket trolleys’.

But is Dame Joan right to be so wary or is she being paranoid?

To find out, I decided to see how levels of bacteria on my hands changed as I carried out everyday activities, from travelling on public transport to going to the supermarket.

I enlisted the help of Melbec Microbiology, a Lancashire-based laboratory that carries out tests for the health and beauty industry.

Throughout the day, I swiped swabs across my skin to pick up any bacteria. These were sent to the lab to find out how many bacteria, and what types, my skin was carrying. The results were eye-opening...

IS AN AIR KISS THE SAFEST GREETING?

SOME celebrities and politicians use hand sanitiser after shaking hands, as bacteria and viruses can be passed on through skin contact. British athletes were even advised not to shake hands during the 2012 Olympics for fear they would be struck down by illness.

So how should you greet someone without appearing rude? Researchers from the London School of Hygiene and Tropical Medicine recommended that the least risky way

by Claire Coleman

was a continental air kiss on each cheek — but this can bring you into contact with the area near someone’s nose and mouth, which are swarming with bacteria.

To find out which is more hygienic, I swabbed my right hand and cheek before and after a work event where I met new people.

Before swabbing, I thoroughly washed my hands with soap, leaving behind just two types of bacteria, in very low numbers.

‘When we count bacteria we’re looking at their potential to grow,’ explains Val Edwards-Jones, professor of medical microbiology at Manchester Metropolitan University, and clinical director at Melbec Microbiology.

‘In ideal conditions, a bacteria will double its numbers every 20 minutes so, within four to six hours, you could be talking about more than a million bacterial cells.

‘Within 24 hours, that could be billions. This is what we call a colony. We call a single bacterial cell a colony-forming unit, or CFU.’

The more harmful CFUs you have on your skin, the higher the risk that they will get into your nose or mouth and make you ill.

But some bacteria are so potent even low numbers of CFUs can make you ill. Some research suggests 15 to 20 CFUs of salmonella are enough to cause the infection. To put this in context, the legal

limits for CFUs for products used on babies and around eyes is 100.

I’d always assumed it was more hygienic to cheek-to-cheek kiss someone rather than shake hands. But at the start, the lab found five different species of bacteria on my cheeks — and around 480 CFUs.

‘The organisms we found were mostly harmless, although you had a bacterium called *Staphylococcus aureus* on your skin. This is carried by only 35 per cent of the population and is the most common pathogen found in humans,’ says Professor Edwards-Jones.

Staphylococcus aureus may happily exist on the surface, but if it gets into a wound it can result in a range of diseases, from impetigo and boils to life-threatening pneumonia, meningitis and sepsis.

Being one of the 35 per cent, not only am I more likely to get infections if I had a hospital operation, but I’m also liable to spread it to those who don’t naturally have it.

So what happened when I went cheek-to-cheek with 15 people?

While the number of types of bacteria went down from five to three (I probably gave my *Staphylococcus aureus* to one of them), the number of CFUs doubled to 960.

‘These have probably been acquired from either the skin or the saliva of the people you kissed,’ says Professor Edwards-Jones.

GERM RATING: 4/5

...AND WHAT ABOUT A HANDSHAKE?

THERE were 176 CFUs on my hands at the start of the day — the lab thought this was fairly typical and it’s safe to assume that after washing my hands or using anti-



bacterial gel throughout the day, there would be between 100 and 200 CFUs present.

After shaking hands with around 15 people, although the same types of bacteria were present, they were there in even smaller numbers — just 48 CFUs. How had I *lost* bacteria rather than gained it?

‘We do sometimes find CFU count is higher after someone has washed their hands as bacteria don’t just sit on the skin’s surface, but just under it, so if you take off the top layer you expose more bacteria,’ says Professor Edwards-Jones.

‘There’s also the possibility you’ve passed what was on your hands on to other people,’ she says.

This shows how easy it is for bacteria to be passed from one person to another. Research found a sneeze can release almost 500 CFUs, so if someone sneezed into their hand

then shook yours, these CFUs could end up on you, too.

GERM RATING: 3/5

FLU-RIDDEN AND FILTHY TRANSPORT

A TRAIN in flu season is filled with hacking and spluttering commuters — and someone always coughs into their hand and grabs the handrail. I therefore hardly ever touch rails on public transport or in stations.

However this time, after cleaning my hands with an antibacterial gel, I embarked on the 30-minute Tube journey to my house, determined to touch all the surfaces I could.

Escalator handrails, Tube grab rails, stair bannisters — I touched them all. And the result? A revolting 8,000 CFUs, and four types of bacteria, including one the lab



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Which IS more likely to make you ill: shaking someone's hand or kissing their cheek?

We enlisted a laboratory to find how many germs you pick up from physical contact. The results will have you reaching for granny's carbolic...



Pictures: GETTY/ALTREND/E+

suspected of being of faecal origin. 'This bacteria is an indicator organism, which suggests the surfaces may have been contaminated with other faecal organisms, and possibly salmonella which, if you didn't wash your hands before eating, could make you very ill,' says Professor Edwards-Jones.

I could have picked up a virus, such as flu or norovirus, too, which the tests would not have identified, as it's harder to do so.

The University of Arizona discovered if a virus contaminates an office door handle, within four hours between 40 and 60 per cent of surfaces, such as light switches, taps and coffee pot handles, will be contaminated, too. But it found regular handwashing could reduce the spread by 80 to 99 per cent.

GERM RATING: 5/5

SHOULD YOU AVOID PUBLIC LOOS?

OF ALL the places where you'd expect to pick up germs galore, top of the list must be public loos. I

went to the ladies' on Clapham Common in London and while I stopped short of running my hands around the bowl, I did touch door handles, the loo roll dispenser, seat and more — confident the swab would reveal disgusting levels of Enterobacteriaceae, found in the gastrointestinal tract.

After all, we're told to flush with the lid down to avoid faecal matter particles being sprayed around and contaminating toothbrushes.

But the lab found five types of bacteria — and no Enterobacteriaceae — and just 250 CFUs. Maybe loo cleaners on Clapham Common are particularly diligent.

GERM RATING: 2/5

HAND DRYERS FROM HELL

THERE has long been controversy over hand dryers, with experiments drawing different conclusions about whether they are more hygienic than paper towels or not.

One of the latest studies, which involved participants coating their

hands with a virus before drying them, suggested jet dryers contaminate surroundings with 1,300 times as many viral particles as a paper towel, while standard hand dryers spread 60 times as many.

A picture of a petri dish recently went viral after a microbiology student put it in a hand dryer for three minutes and, a few days later, found a mass of fungi and bacteria growing in it, too.

In the public convenience on Clapham Common I washed my hands with soap in cold water (there was no hot), then dried them under the warm air dryer.

The swab revealed that while other hand dryers might be blowing out huge numbers of bacteria, the one I tested wasn't — just three types and around 110 CFUs.

So nothing to worry about? Not quite. 'Dryers can create an aerosol effect and spray organisms onto you,' says Professor Edwards-Jones. 'With a paper towel, organisms are likely to be left on the towel and binned.'

'The biggest concern about hand driers would be in a hospital, where

there's a greater risk of drug-resistant organisms being in the air. The ill may be more susceptible to them, too.'

GERM RATING: 2/5

DOG WALKING DANGERS

WE ALL know dogs have pretty much zero hygiene, but are they really that bad?

Professor Edwards-Jones tells me dog saliva carries an organism called *Pasteurella multocida* that is harmless to dogs but can cause illness in humans. 'I remember a patient hit by a golf ball that had been chewed by a dog,' she says. 'The ball broke the skin, the *Pasteurella* got into his bloodstream and he ended up with sepsis.'

Not having any pets of my own, I enlisted the help of my friend Tara, her dog Millie, and a pal's pooch, Indy. We took the pair for a walk in the park, and en route, befriended other dogs I also stroked.

If you've got dogs, you may want to make sure you're not eating

before reading this next sentence. The swab I took after my walk had one million CFUs and four types of bacteria — some the lab suspected of being of faecal origin.

'While we didn't find any *Pasteurella* bacteria, we did find organisms that look as if they've come either from the saliva of the dogs or their faecal tract,' says Professor Edwards-Jones. The dogs may have transferred other bacteria that can cause stomach upsets, and worms and parasites. Yuck.

GERM RATING: 5/5

SUPERMARKET CLEAN SWEEP

WHETHER they're from the people who have stacked the shelves, the checkout staff, or the customers picking up produce and putting it down again, supermarkets must harbour plenty of germs.

The card machines and handles of trolleys and baskets are surely a smorgasbord of microbial growth, too. Or are they?

After a very hands-on trip to the supermarket, rather than washing my hands as soon as I got home, I swabbed them. The result? A pretty unpleasant five types of bacteria and around 1,000 CFUs.

According to Professor Edwards-Jones, most of these would be fairly harmless, but the majority I picked up were *Staphylococcus aureus*. If I'd had a cut and this bacteria had got in, it could easily have caused a skin infection — or potentially something a lot more serious.

GERM RATING: 3/5

SCANDALOUSLY DIRTY MONEY

IT'S estimated more germs can be found on a £1 coin than on a regularly cleaned loo seat, and that in its lifetime a £20 note will have passed through the hands of more than 2,300 people.

'For many bugs to survive they need a moist environment, so if one of the older cotton and paper notes gets wet, they might harbour bacteria longer than coins,' says Professor Edwards-Jones.

Because plastic notes are so new, there's not enough evidence to say whether they are more hygienic, but it was thought the wipe-clean surface would make them cleaner.

I went to the bank and drew out bags of change as well as notes. Once home, with clean hands, I counted them then took a swab.

The lab found three species of bacteria and 440 CFUs. While not a huge number, the types of bacteria were identified as 'not the resident bacteria of the participant but passed on by other individuals' hands and the organisms existing on the coins and notes.'

Never handle change and then eat — and be vigilant about making sure food servers don't handle money then touch your food.

GERM RATING: 3/5