

TOTO toilets completely prevent infections

A recent test featuring TOTO toilets showed that rimless toilets with a special flush technology can also protect people from exposure to aerosols.



Effective protection against bacteria and viruses starts in your own bathroom – and is vitally important in today’s world. Toilets with rimless bowls and a circulating flush technology prevent the spread of aerosol particles. And therefore protect against infection – both in the home as well as hygiene-critical institutions like hospitals. Hygiene professor Klaus-Dieter Zastrow discovered these findings in a test involving TOTO toilets.

Sanitary areas in public buildings and healthcare facilities may pose an increased risk of infection, as do bathrooms in people’s own homes. Experts are currently evaluating the higher risk of becoming infected with viruses and bacteria through so-called aerosols. They have proven that these tiny droplets can spread into the air when a toilet is flushed, and then settle on surfaces surrounding the toilet afterwards.

Rimless toilets aren’t enough – the flush technology also matters

Many private homes, hospitals and other healthcare facilities still have conventional toilets with rimmed bowls, and these models continue to be sold today. Hygiene professor Klaus-Dieter Zastrow was Chairman of the Commission for Hospital Hygiene and Infection Prevention (KRINKO) at the Robert Koch Institute for many years, and is currently working on how to improve hygiene in hospitals. In this context, he identified the area under the rim of toilet bowl as a “reservoir” for viruses and bacteria – an important factor that experts are considering in conjunction with conventional flush technologies: Bacteria can be spread beyond the edge of the toilet bowl in the tiny droplets of spray produced when the toilet is flushed.

These droplets can then land on the surfaces of the washbasin, other furnishings and floor, presenting a risk of exposure and infection. TOTO brought a newer

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generation of toilets with rimless bowls to the European market in 2009, and other manufacturers have since followed suit. Zastrow determined that the rimless bowl alone is not enough to prevent infection, and that the formation of aerosols needs to be prevented when the toilet is flushed. In other words, the flush technology used is a critical factor.

Test results get attention

In June 2020, the hygiene specialist conducted a study comparing conventional toilets with two rimless toilet bowls from TOTO: the RP and SP models. Among other aspects, he examined the innovative Tornado Flush technology offered in the two TOTO models, which he described as “circulating”: “Tornado Flush, as TOTO calls the whirlpool flush, essentially cleans every centimetre multiple times. The water swirls in a circle. This movement keeps the water inside the toilet. And this type of toilet or flush to a large extent ensures that intestinal pathogens actually stay in the toilet and do not spread further. As a result, this type of toilet is especially well-suited for use in hospitals,” Zastrow said.

If it can improve hygiene in hospitals, it can in people’s own homes

The study also carefully examined whether or not droplets had settled on the cleaned and polished floor surrounding the toilet after it was flushed, as this would indicate the formation of aerosol particles. The hygiene specialist eliminated this possibility: “The aerosols that are produced by conventional toilets from time to time are not an issue for rimless toilets.” In an interview, Zastrow was asked whether or not coronaviruses would behave like the bacteria and germs he tested. He felt that there was no difference: “Everything that is in the stool, including viruses and bacteria, as well as coronaviruses, is also eliminated.”

Like all TOTO toilets, the tested RP and SP models offer outstanding hygiene features. The special CEFIONTECT glaze is easy to clean, extremely smooth and as hard as glass. It essentially prevents germs and waste from sticking to the surface. One of TOTO’s greatest innovations in conjunction with ceramic toilets is the development of the rimless toilet bowl, the first to bring this to Europe at the 2009 ISH trade show. The toilets also share the extremely efficient, circulating flush technology called Tornado Flush.

Completely prevents infection

“Considering the special issues surrounding MRGN*, the wall-mounted toilet from TOTO meets all of the demands involved in hospital hygiene and completely prevents infection. It is superior to conventional toilets with rimmed bowls and non-circulating flushes

*Definition: MRGN stands for multi-resistant gram-negative rod-shaped bacteria, which are widely resistant to antibiotics.

Learning from Japan

The fact that this sophisticated technology was developed in Japan, a country known for its exceptional hygiene, is an advantage. The company is seeing increased demand in the European market during the pandemic for both toilets and shower toilets, known as WASHLET™.

An abridged version of the interview is available for viewing on the TOTO YouTube channel:

<https://www.youtube.com/watch?v=LHF5hGQdpLg>

The expert report is available online at:

https://de.toto.com/fileadmin/Prof_Dr_Zastrow_2_Gutachten_TOTO_31_07_2020

Düsseldorf, August 2020

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1 According to hygiene professor Klaus-Dieter Zastrow, many toilets produce aerosols when flushed. These can spread germs and viruses through the air. Photo: Andreas Endemann, Berlin

2 Hygiene professor Klaus-Dieter Zastrow has spent many years examining how to improve hygiene in hospitals. One of the sources of infection: The rim on conventional toilet bowls. Photo: Andreas Endemann, Berlin

3 Hygiene professor Klaus-Dieter Zastrow tested two TOTO toilet models and took a closer look at the new flush technology, which he describes as “circulating”: “Tornado Flush, as TOTO calls the whirlpool flush, essentially cleans every centimetre multiple times.” Photo: TOTO

4 Rimless toilets and a circulating flush are effective in fighting against germs and viruses. The photo shows the RP toilet from TOTO. Photo: TOTO

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5 TOTO is committed to providing top hygiene in all of products, and is one manufacturer of rimless toilets. The company is based in Japan, a country known for its superior hygiene – a good reason to look to their developments for guidance. The photo shows the TOTO SP toilet. Photo: TOTO

6 TOTO is one provider of rimless toilets. The company is based in Japan, a country known for its superior hygiene – a good reason to look at their developments for guidance. The European headquarters are located in Düsseldorf. Photo: TOTO

7 The two newest TOTO WASHLETTM models, the Prime Edition RW and SW, are equipped with all hygiene technologies.

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About TOTO Europe

TOTO focuses on people and their well-being, developing products that combine modern design and extensive expertise. The Japanese company perfects its technologies over decades, incorporating them into innovative products in an understated, easy-to-use way. Established in Kitakyushu, Japan in 1917, TOTO has been developing, producing and marketing its comprehensive high-end bathroom concepts for the European market since 2009. The company aims to create a new attitude towards life through regeneration, comfort and hygiene.

TOTO products integrate technologies into their designs in a smart, nearly invisible way, while prioritising hygiene, resource conservation and comfort. Japan's leading manufacturer in the sector, TOTO offers a comprehensive range of products including ceramic sanitary ware, faucets and accessories – all created in close collaboration with renowned designers. The company celebrated its 100th birthday in 2017 and was named the “world's no. 1 brand” for shower toilet sales by international market research institute Euromonitor International. TOTO employs 30,000 people world-wide.

More about TOTO: gb.toto.com

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