Dear Reader,
For direct contact with infected patients and persons suspected of having
have the coronavirus, there are many recommendations for protection and correct behavior.
But what about downstream areas such as the scullery?
The aim here is also to prevent the virus from spreading further and causing more people to become infected.
For this purpose, the AK GGS has compiled this information.

Pathogen

SARS CoV-2 belongs to the genus Coronavirus, a group of enveloped viruses. Coronaviruses are a large family of viruses that are very common in humans and animals, including camels, cattle, cats and bats. In rare cases, coronaviruses can be transmitted from animals to humans and spread further, as in the past with MERS as well as SARS and currently with the new virus SARS-Cov-2, which is responsible for COVID-19 diseases.

Since the virus is a "relatively" new virus and the state of knowledge can and will develop further at any time, we do not want to go into more detail about the virus here. Further information on the pathogen SARS CoV-2 and its pathology, duration of contagiousness and transmission routes can be found on the website of the Robert Koch Institute (RKI) (the information is updated there continuously), see also: RKI - Coronavirus SARS-CoV-2 - Epidemiological profile of SARS-CoV-2 and COVID-19 (status 18.03.2021).

Obligation to report

According to the Infection Protection Act (IfSG) § 6 para. 1, there is a general obligation to report.

Hygiene measures

The following general measures can reduce the risk of infection:

- Wash your hands regularly and follow the correct procedure.
- Avoid touching eyes, nose or mouth with unwashed hands.
- As with any communicable disease, it is recommended that thorough hand hygiene is observed, as well as disinfection of high-touch areas such as railings, door openers and handles, and surfaces in toilets.
- Surfaces and high-touch areas must be cleaned and disinfected with approved disinfectant cleaners. Alternatively, surfaces can be cleaned first with a suitable cleaner and then disinfected, e.g. with a surface disinfectant.
- Avoid close contact with people who are ill.

Handling dishes

The coronavirus, SARS-CoV-2, poses great challenges to the world. Nevertheless, it is an "ordinary" enveloped virus in the true sense of the word, for which the same hygiene requirements apply in principle as for all enveloped viruses, such as flu viruses (influenza), mumps or measles. These applicable hygiene requirements are given by the norms and standards already specified in the field of commercial dishwashing. In principle, therefore, there are no new special requirements that need to be placed on the system of commercial dishwashing, as has also been confirmed by the German Robert Koch Institute (RKI) and the Federal Institute for Risk Assessment (BfR) according to the current state of knowledge.

The general kitchen hygiene rules of conduct must always be observed for the proper preparation of wash ware/crockery, as the right to hygienically flawless crockery and cutlery applies to all diners in restaurants, hotels, canteens, service areas, old people's homes, nursing homes, hospitals, etc. In general, insufficiently cleaned crockery can always transmit health-endangering viruses such as noroviruses, coronaviruses and bacteria such as salmonella, coli germs or streptococci, which can be prevented by proper reprocessing.
The surfaces of all items to be washed should be in a condition that excludes any health risk to the diners. This applies to both physically less resistant persons and healthy diners. In addition to compliance with general hygiene regulations for food processing, such as the Food Hygiene Regulation (EU Regulation 178/2002 and EU Regulation 852/2004, DIN 10516), there are other normative criteria for commercial

dishwashing (DIN standards series DIN 10510 - 10512 and DIN 10522 as well as DIN SPEC 10534) that must be taken into account.
The extensive information on this subject has been compiled by the Working Group Arbeitskreis Gewerbliches Geschirrspülen (AK GGS) in the form of various compendiums of practice [1].
A hygienically impeccable dishwashing result in machine dishwashing depends on a large number of parameters:

- Cleaned dishes must be visually clean. No residues must be visible to the naked eye.
- Such a result can only be achieved if the machine's process parameters "temperature, mechanics, chemistry and time" are optimally coordinated.
- The detergent concentration must be stable throughout the entire rinsing process and must be as high as specified by the manufacturer. An even, direct application of detergent and rinse aid solution must be ensured.
- The items to be washed, the degree of drying of the food residues, holding times, temperatures and the type of soiling have a decisive influence on the washing process. The dishes should be washed as soon as possible, and long drying times should be avoided.
- The operator must take this into account by selecting the right programs (e.g. transport speed, program duration or program selection).
- It is important that the wash ware is always inserted in the optimum, correct position in the wash ware carriers and remains in this position.
- A high soiling input increases the risk of recontamination of the already cleaned wash ware. Thorough pre-cleaning must therefore always be ensured.
- Larger transport dishwashers should be equipped with a pump pre-clearance system and appropriate soiling traps sieves.
- For smaller machines, the possibility of thorough manual pre-cleaning, if possible, with pre-rinse basin and hand shower, must be available.
- The hygienic quality of the water of the fresh water clear rinse must correspond to the quality of drinking water.
- Manual drying should only be carried out in exceptional cases and only with disposable cloths.
- Hygienically clean dishes may only be removed with clean hands or gloves. Re-soiling must be avoided!
- The soiled wash ware should be fed in and the clean wash ware removed by different people. This means that in general, care should be taken to separate the clean and unclean sides in order to avoid recontamination of the wash ware.

The detailed requirements for the technical and functional equipment of the machine as well as the hygiene inspection can be found in the standards DIN 10510, DIN 10511, DIN 10512 and DIN 10522 as well as DIN SPEC 10534.

According to the German Robert Koch Institute (RKI) and the Federal Institute for Risk Assessment (BfR), there is no risk of SARS-CoV-2 transmission when these parameters of the usual machine dishwashing procedure are observed. In particular, the SARS-CoV-2 reacts sensitively to the high temperatures of 60 °C and higher and through the highly concentrated detergents. Even in view of the care of patients with proven infection, the dishes can be transported to the dishwasher in a closed container in compliance with all hygiene-relevant parameters and cleaned by machine as is customary in hospitals [2,3]. As explained, commercial machine dishwashing is highly standardized by various standards and control options and is thus an extremely reliable building block in the hygiene concept of a dishwashing kitchen.

However, this is only one part of a larger overall process. The used and possibly contaminated crockery must be transported for reprocessing in such a way that there is no risk of infection for those who come into contact with it during transport. In the event of an acute outbreak of, for example, Covid-19 disease in a facility, special labelling of the used crockery of these infected persons and/or transport in closed containers or bags is recommended. This is purely a precautionary measure, but it can help to prevent further spread. Thorough hand cleaning and disinfection of all persons involved in the overall process is essential. This also applies to the removal of clean dishes from the machine after machine cleaning. Sufficient hand-washing stations with hand soap and disinfectants as well as disposable dry cloths should therefore be

provided in the area of the dishwasher. For this purpose, a virus-effective hand disinfectant should definitely be used if Covid-19 diseases occur in the facility.
The area around the dishwasher, especially the loading area, should also be thoroughly cleaned after the dishwasher has finished washing and, if necessary, disinfected with a suitable surface disinfectant.

In addition to machine dishwashing, manual dishwashing, e.g. of drinking glasses, is also common in the catering sector, which has been intensively discussed in the context of coronavirus transmission. In the area of manual dishwashing, there are no standardized regulations or norms, which is why the actual dishwashing is always individual and dependent on the person carrying it out.
Although it is generally true that coronaviruses, as enveloped viruses whose genetic material is coated in a lipid layer, react sensitively to fat-dissolving substances such as surfactants and alcohols (in soaps and dishwashing detergents), we recommend that the safest and standardized process of machine reprocessing be chosen in this context in the catering and communal catering sector. In particular, cleaning and drying at temperatures of 60 °C or higher, as is the case with machine dishwashing, inactivate the virus, which is why this process is preferred by the BfR [3].

The manufacturers of brush systems in sinks for the manual cleaning of drinking vessels, such as drinking glasses, are striving to provide proof of a good and safe rinsing result in the form of independent expert reports. According to information from some manufacturers of such systems and according to statements by the BfR, up to a maximum of 99 % of viruses can be removed by manual cleaning (average germ reduction of 87.7 %, with a range of between 69.9 % and 99 %) [4].
In a laboratory study with the related SARS virus, it was shown that treatment with a commercial dishwashing detergent for five minutes at room temperature led to virus inactivation [5]. However, longer times and higher temperatures increase the efficiency of virus inactivation, which is why hand rinsing (rinsing brush, pressure rinsing device) has disadvantages in glass cleaning compared to machine rinsing [6]. In order to ensure such inactivation, however, the individual parameters such as temperature, amount of rinsing agent and rinsing time must be adhered to, which is difficult to guarantee consistently due to the individuality of the person doing the rinsing.
In comparison, a germ reduction of over 99.999 % for machine dishwashing is required in the DIN standards (e.g. DIN SPEC 10534). Each wash cycle in a commercial dishwasher thus reduces the germ load by at least 10^5 (100.000 times). If, for example, 100.000 germs were on a plate beforehand, no germs are detectable here afterwards. Depending on many parameters (dishwashing temperature, amount of detergent, duration, motivation, etc.), the reduction in manual dishwashing is a maximum of 99 %. Even in the best case, more than 1000 germs would have remained on the plate in the above example. Depending on the germ, this may be sufficient for an infection.

In summary, it can be said that in the context of a spread of the SARS-CoV-2 virus in the area of commercial dishwashing, machine dishwashing is preferable to manual dishwashing due to a standardized process, higher temperatures, consistent mechanics and a constant detergent dosage.

Sources:

1] https://www.akggs.de/de/handbuch (Practical Manual Commercial Dishwashing - Chapter 11 Hygiene)
2] https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Hygiene.html (status 22.03.2021)
[3] https://www.bfr.bund.de/cm/343/kann-das-neuartige-coronavirus-ueber- Lebensmittelmitteln- und-gegenstaende-uebertragen-werden.pdf (status 15.02.2021)
[4] https://www.bfr.bund.de/cm/343/hygienische_wirksamkeit_von_spuelgeraeten_zum_reinigen_von_trinkglaesern_in_der_gastronomie.pdf (BfR statement no. 027/2008 of 1 April 2008)

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