

SODIS METHOD

How does it work?

Research

Microbiology

Health

Training strategies

PET-bottles

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Microbiology



Microbiological studies investigated the effectiveness of the SODIS method against a wide range of germs:

- Bacteria (cholera, typhus, dysentery, diarrhoea, etc.)
- Viruses (polio, hepatitis, diarrhoea, etc.)
- Parasites (diarrhoea, stomach cramps, fever, etc.)

It was demonstrated both in the laboratory and in the field that the method kills germs effectively.

Different sensitivities

Bacteria are highly sensitive to UV-A radiation (wavelength 320-400nm) and are quickly killed by sunlight. The **viruses** are slightly more resistant, but are also killed within the recommended 6 hours. **Parasites** are less sensitive to sunlight. While giardia cysts are rendered inactive within 6 hours, cryptosporidia cysts must be exposed to direct sunlight for at least 10 hours before they are neutralised. Amoebas do not die until the water temperature has been warmer than 50°C for over an hour.

How UV-A kills germs

Research into the question of why the germs die is not yet complete. At the moment, scientists think that the bacteria die because the process by which they respire is damaged by UV-A radiation. This damage is evidently so severe that the bacteria can no longer repair it.

Water temperature affects disinfection

A warmer water temperature speeds up the process. However, bacteria, viruses, giardia and cryptosporidia are killed by UV-A radiation even when water is cooler.

[Scientific publications on microbiology](#)

Overview of the most common germs

The following table shows a summary of the most important research results. It should be noted that many germs can no longer be detected in very low concentrations. In these cases, it is not possible to provide scientific proof of a 100% reduction.

Bacteria

	Disease	Reduction with SODIS method (6h, 40°C)
Escherichia coli	Indicator for water quality & enteritis	99.999%
Vibrio cholera	Cholera	99.999%
Salmonella species	Typhus	99.999%
Shigella flexneri	Dysentery	99.999%
Campylobacter jejuni	Dysentery	99.999%
Yersinia enterocolitica	Diarrhoea	99.999%

Virus

Disease	Reduction with SODIS method
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SCIENTIFIC PUBLICATIONS

Research results in the areas of Microbiology, Health, Training strategies, PET bottles | [more >>](#)



(6h, 40°C)

Rotavirus	Diarrhoea, dysentery	99.9 - 99.99%
Polio virus	Polio	99.9 - 99.99%
Hepatitis virus	Hepatitis	Reports from users

Parasites

	Disease	Reduction with SODIS method (6h, 40°C)
Giardia species	Giardiasis	Cysts rendered inactive
Cryptosporidium species	Cryptosporidiasis	Cysts rendered inactive after > 10h exposure
Amoeba species	Amibiasis	Not rendered inactive. Water temperature must be above 50 °C for at least 1h to render inactive!

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 Impressum

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