1. Hand washing with soap is the single most effective and inexpensive way to prevent [diarrhoea](https://en.wikipedia.org/wiki/Diarrhea) and acute respiratory infections (ARI), as automatic behaviour performed in homes, schools, and communities worldwide.
2. The main objective of a sanitation system is to protect and promote human health by providing a clean environment and breaking the cycle of disease.[[](https://en.wikipedia.org/wiki/Sanitation#cite_note-:2-2)
3. **Solid soap**

Solid [soap](https://en.wikipedia.org/wiki/Soap), because of its reusable nature, may hold bacteria acquired from previous uses.[[11]](https://en.wikipedia.org/wiki/Hand_washing#cite_note-11) A small number of studies which have looked at the bacterial transfer from contaminated solid soap have concluded transfer is unlikely as the bacteria are rinsed off with the foam.[[12]](https://en.wikipedia.org/wiki/Hand_washing#cite_note-12)

### Water

Hot water that is comfortable for washing hands is not hot enough to kill bacteria. Bacteria grow much faster at body temperature (37 C). However, warm, soapy water is more effective than cold, soapy water at removing the natural oils on your hands which hold soils and bacteria. Contrary to popular belief however, scientific studies have shown that using warm water has no effect on reducing the microbial load on hands.[[15]](https://en.wikipedia.org/wiki/Hand_washing#cite_note-15)[[16]](https://en.wikipedia.org/wiki/Hand_washing#cite_note-16)

### Soap and detergents

Removal of microorganisms from skin is enhanced by the addition of soaps or detergents to water.[[10]](https://en.wikipedia.org/wiki/Hand_washing#cite_note-10) The main action of soaps and [detergents](https://en.wikipedia.org/wiki/Detergents) is to reduce barriers to solution, and increase solubility. Water is an inefficient skin cleanser because fats and proteins, which are components of organic soil, are not readily dissolved in water. Cleansing is, however, aided by a reasonable flow of water.

1. Alcohol based preparations have two distinct advantages over soap and water:

1 - They kill many more germs

2 - They are less drying to your skin

While alcohol based preparations reduce the germs on your hands, they cannot remove visible soil or contamination.  It is always important to WASH hands with soap and water any time they are visibly dirty.

**When should soap and water be used?**

The mechanical action of washing, rinsing and drying removes transient bacteria present on the hands. Hand washing with soap and running water must be performed whenever hands are visibly soiled.

Any type of plain soap may be used. However, bar soaps are not acceptable in health care settings except for single patient/resident personal use. If used, bar soap should be kept in a self draining holder that is cleaned thoroughly before new bars are put out. Liquid soap containers should be used until empty and then discarded. Soap containers must not be topped up, as there is a risk of contamination of residual soap. Antibacterial soaps may be used in critical care areas such as ICU, or in other areas where invasive procedures are performed.

https://thedarkpark.wordpress.com/2011/09/14/effect-of-handwashing-on-bacterial-growth/