

Resources

More information on hygienic laundry practices, proper home hygiene, and other related topics can be found online at:

Center for Health & Hygiene in the Home and Community
www.simmons.edu/hygieneandhealth

International Scientific Forum on Home Hygiene
www.ifh-homehygiene.org/

Centers for Disease Control
www.cdc.gov/healthyhomes/byroom/laundryroom.html

www.cdc.gov/HAI/prevent/laundry.html

MWRA
www.mwra.state.ma.us/04water/html/qual4concerns.htm

*Kubota, et al. 2012. *Moraxella* species are primarily responsible for generating malodor in laundry. *Applied and Environmental Microbiology*. 78, 3317-3324.



Center for Health & Hygiene in Home & Community

The Center for Health and Hygiene in Home and Community serves as a national and international resource for information and education, applied research, professional training and conferences. The Center focuses on issues relating to hygiene and infection control in areas such as:

- consumer food safety
- home hygiene
- daycare
- preschool
- homecare
- sports and leisure activity
- travel and hospitality

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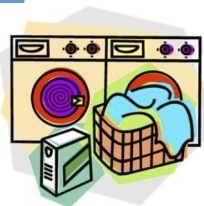
Center for Health & Hygiene in Home & Community

Laundry: Defining Clean at Home or in the Dormitory



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Doing the laundry is a chore common in the home and other settings such as dormitories. It is a process that removes dirt and grime, allergens, odors, and viruses & bacteria from linens and clothes.



Choosing the right laundry detergent, water type & temperature, as well as drying methods can help make your laundry process truly hygienic and eco-friendly.

Choosing a Detergent

There are four important components of a detergent:

- **Water softeners** to make cleaning more efficient
- **Bleaching agents*** and/or activators, active against plant pigments, i.e. grass stains
- **Enzymes*** (synthetic or natural) to breakdown macronutrients: fat, carbohydrates, and proteins
- **Specialized ingredients** that might include brighteners, agents to reduce excess foaming in the washing machine, or perfumes.

*Antimicrobial agent

Water softeners (specifically phosphates) are the primary source of environmental pollution from detergents. Release of phosphates into the water supply enhances the growth of microorganisms and algae. These organisms can become so active that they use up all the oxygen in the water, causing severe ecological damage. This process is called **eutrophication**. Eco-friendly detergents are low- or phosphate-free.

Water Content

Build-up in pipes or in the water supply can contribute to the mineral content of water. You do not need a detergent with water softeners unless your water has excess calcium.

Water Temperature

Cold water detergents are designed to clean at temperatures as low as 60°F. Using cooler water saves energy and utility costs. But can low temperature water really remove microbial contamination from laundry?



Cold water washing and detergents are great choices for lightly soiled clothes and linens used by healthy people in non-hospital environments.

A hot or warm water setting ($\geq 140^\circ\text{F}$) is recommended:

- When someone in the home is suffering from an infection such as gastroenteritis or skin infection or someone is particularly vulnerable to infection.
- For hospital scrubs and clothes worn in a hospital setting or in a science laboratory
- For linens used by anyone with environmental allergies, including dust



Drying Laundry

It is critical to dry laundry sufficiently to prevent mold and odors from developing. The temperature of the drying cycle is inconsequential in the

home; however, machines should be vented properly to prevent mold growth.

Mold spores produce allergic reactions in some people and, in more extreme cases, can trigger asthma and other respiratory problems. Warm, moist environments, like the interior of a damp towel in your bathroom, can breed molds.

Microorganisms can also contribute to bad smelling laundry. A type of fatty acid molecule, similar to the one that causes sweaty body odor, is produced by *Moraxella* sp. These bacteria are especially prevalent on laundry that has been washed in cold water and dried on racks*.



If you are not using a dryer, wring out wet laundry completely and drape it over a non-absorbent rack or on an outside line. Only use plastic or metal drying racks. Wood can harbor mold if kept moist.

If you are using a dryer, move your laundry from the washer to the dryer quickly to prevent odors.

Happy Laundry Day!

Wash sheets and worn clothes at least weekly to reduce allergens and stay healthy.



Use enough detergent for every load to maximize its antimicrobial activity.
