

Mite and mite allergen removal during machine washing of laundry

Larry G. Arlian , DiAnn L. Vyszynski-Moher and Marjorie S. Morgan

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Abstract

Background: Few studies have investigated live house dust mite and mite allergen removal from clothing and bedding by washing machines. No studies have investigated the transfer of mites from infested to uninfested clothing and bedding during washing. **Objective:** The purpose of this study was to wash different types of clothing and bedding in residential washing machines to determine the live *Dermatophagoides farinae* mite and allergen removal and the mite transfer from mite-infested items to mite-free items. **Methods:** Clothing and bedding items were machine washed in 6- and 8-lb loads in warm (36°C-38°C) or cold (22°C-27°C) water with and without recommended concentrations of laundry detergent and sodium hypochlorite bleach. Live mites and allergen present in washed versus unwashed and washed mite-infested versus washed mite-free items were compared. **Results:** Washing clothing and bedding in water alone, detergent, or detergent plus bleach removed 60% to 83% of the live mites. Washing removed more mites from some items than from others. When mite-infested items were washed with identical sets of mite-free items, many live mites were transferred to the previously mite-free items. Overall, 84% of Der f 1 was removed from items washed in water alone or in detergent and 98% from items washed in detergent plus bleach. **Conclusions:** Washing clothing and bedding in cold or warm water with detergent or detergent plus bleach removed most allergen and a significant ($P < .05$) portion of live mites. Repeated washing is required to further reduce mite levels. Live mites were transferred from mite-infested to mite-free items during washing. (J Allergy Clin Immunol 2003;111:1269-73.)