

Rigorous Testing shows deep carpet cleaning achieving Up to 97% Allergen Reduction

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Allergen reduction blog

Overview

Airmid Healthgroup conducted a groundbreaking study on allergen reduction in carpets and soft furnishings, demonstrating that a proprietary hot water extraction cleaning process reduced surface allergens by up to 97%. Presented at the 2013 American Academy of Allergy, Asthma & Immunology (AAAAI) annual meeting, this research highlights the importance of deep cleaning in improving indoor air quality and reducing allergen exposure.

Background

About Airmid Healthgroup:

Airmid Healthgroup is a biomedical research organization specializing in aerobiology and the study of allergens, indoor air quality, and microbiological exposures. With extensive experience in environmental testing, Airmid works with corporate partners to identify and address challenges related to indoor environments.

About the Study Sponsor:

[Stanley Steemer](#), one of the largest professional deep cleaning companies in the United States, partnered with Airmid to evaluate the impact of their proprietary hot water extraction cleaning technology on allergen levels in real-world home environments.

Context:

Indoor allergens, including dust mite allergen, pet allergens, and mold, are significant contributors to asthma and allergy symptoms. According to the [Asthma and Allergy Foundation of America](#), nearly 50 million Americans suffer from allergies, with 40 million affected primarily by indoor and outdoor allergens. Airmid's research aimed to quantify the effectiveness of professional cleaning in reducing these allergens.

The Challenge

Indoor environments often accumulate allergens in carpets and soft furnishings, contributing to poor air quality and increased exposure to bio-contaminants. Key challenges include:

- **Surface Allergen Accumulation:** Dust mites, pet dander, and mold accumulate in carpets and upholstery, affecting indoor air quality.
- **Airborne Allergen Exposure:** Disturbances in a room can release allergens into the air, worsening respiratory conditions.
- **Particle Counts in Indoor Air:** Residual particles in the air after cleaning can affect overall indoor air quality.

Stanley Steemer sought independent evaluation of its proprietary cleaning technology to confirm its efficacy in

addressing these issues.

Goals

- **Primary Goal:** Quantify the reduction of allergens on carpets and soft furnishings using Stanley Steemer's proprietary hot water extraction cleaning process.
 - **Secondary Goal:** Evaluate the impact of cleaning on airborne allergens and bio-aerosol exposure during room disturbances.
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Solution/Approach

Airmid Healthgroup designed and executed a robust study to assess allergen reduction achieved by Stanley Steemer's cleaning process:

1. Field Study in Residential Homes:

- Conducted in 20 homes across the U.S., evaluating carpets and furnishings before and after cleaning.
- Focused on surface allergens, including dust mite allergen, cat allergens, and dog allergens.

2. Environmental Test Chamber Assessment:

- Used controlled conditions to measure airborne allergen exposure and particle counts during simulated room disturbances.
- Included pre- and post-cleaning comparisons of three different used carpets.

3. Analysis of Surface Allergen Reduction:

- Surface dust mite allergen, cat, and dog allergens were measured using standardized allergen sampling techniques.
- Allergen levels were assessed after cleaning with

the proprietary hot water extraction process.

4. Airborne Allergen and Particle Analysis:

- Airborne allergen exposure was monitored to determine reductions achieved by the cleaning process.
 - Particle counts were recorded to evaluate the process's impact on overall air quality.
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Key Results

- **Surface Allergen Reduction:**

- Dust mite allergen levels on carpets decreased by 91%.
- Cat allergen levels on carpets decreased by 95%.
- Dog allergen levels on carpets decreased by 97%.

- **Airborne Allergen Reduction:**

- A significant reduction in airborne cat allergens and mold exposure was observed after cleaning.

- **Particle Count Reduction:**

- Airborne particle levels during room disturbances were reduced by an average of 78%, 37%, and 65% across three tested carpets post-cleaning.
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Impact

Enhanced Indoor Environments: The results demonstrate that professional cleaning with hot water extraction can significantly reduce allergen exposure in homes.

Healthier Living Spaces: Regular cleaning with this method helps minimize triggers for asthma and allergy sufferers, supporting improved respiratory health.

Lessons Learned

- **Effective Cleaning Reduces Allergens:** The hot water extraction cleaning process is a proven method for minimizing allergen accumulation and bio-aerosol exposure.
 - **Controlled Testing Validates Results:** Combining real-world testing with environmental chamber assessments ensures robust, reliable findings.
 - **Ongoing Maintenance Is Key:** Professional cleaning should complement regular vacuuming to achieve the best indoor air quality.
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Conclusion

Airmid Healthgroup's study highlights the effectiveness of Stanley Steemer's proprietary hot water extraction cleaning technology in reducing allergens and improving indoor environments. By demonstrating up to 97% allergen reduction in carpets and soft furnishings, this research provides valuable insights for homeowners and professionals seeking to create healthier indoor spaces.

Contact Us

Interested in validating your cleaning technology or other products? [Contact Airmid Healthgroup](#) to learn how our comprehensive testing services can help you achieve impactful results and consumer trust.

Related Links

[Aerobiology Test Chambers](#)

[Allergen Laboratory Overview](#)