ExAller® Environmental reduction of dust mites and improvement of allergic symptoms

Scientific background

Awareness of house dust mites affects about 10 to 15% of the population in industrialized countries. The species *Dermatophagoides pteronyssinus* and *Dermatophagoides farinae* are the main sources of allergens involved in allergic rhinitis and some forms of asthma. The severity of symptoms is correlated with the environmental allergenic load, especially in mattresses and textile supports used daily.

The measurable reduction of the dust mite population is therefore a rational environmental strategy in the management of allergen exposure. Detailed test reports (protocols and complete results) can be sent to professional partners on request (contact: www.exaller.com).

The study mentioned in this sheet can be consulted online at the following address: https://www.researchgate.net/profile/Anne-Catherine-Mailleux/publication/266652335_House_Dust_Mites_Avoidance_and_Allergic_Children_A_Prospective_Study_of_a_New_Strategy/links/54366d9e0cf2bf1f1f2b88f7/House-Dust-Mites-Avoidance-and-Allergic-Children-A-Prospective-Study-of-a-New-Strategy.pdf

Principle of action

ExAller® is a Class I medical device based on a behavioral and mechanical mechanism. The product mimics mite attractant signals using highly diluted essential oils (< 0.001%). After spraying on a 100% cotton textile placed on the mattress, the mites migrate to this external support. The textile is then removed and washed at 60°C, allowing them to be mechanically removed.

The device does not exert any pharmacological, immunological or metabolic action. Its main action is physical: attracting and removing dust mites from the mattress in order to gradually reduce the environmental allergenic load.

The protocol includes an initial phase of three consecutive weekly applications, followed by a monthly maintenance application.

Experimental data

Published data (Jonniaux & Mailleux, 2014) report a gradual reduction in the population of *D. pteronyssinus* by:

80% after one use, 94% after two uses, 97% after three uses.

Clinical data

In the prospective study published in 2014, 40 children with a confirmed dust mite allergy were followed for two weeks with two applications of the device. A statistically significant improvement was observed for:

– nasal congestion ($p < 0.0001$),– sneezing ($p = 0.01$),– nasal pruritus ($p = 0.003$),– ocular pruritus ($p = 0.04$).

Rhinorrhea did not show a statistically significant difference.

After two uses, 70% of patients who were initially moderate or severe for nasal congestion became mild or asymptomatic. The corresponding proportions were 47% for sneezing, 62% for nasal pruritus, 60% for ocular pruritus and 62% for rhinorrhea. No adverse reactions were reported during the duration of the study.

Tolerance and safety

The safety of the product was explored in a study published in the French Journal of Allergology (Van Der Brempt, 2020). A total of 459 prick skin tests were performed with the pure product. Of the 459 tests analyzed, 458 were negative and only one was considered borderline. No significant sensitization signals were identified. No side effects have been reported in users.

Conclusion

ExAller® is the first device developed on the principle of behavioral attraction of dust mites and their mechanical elimination. This quantitative data-driven environmental approach served as the basis for the further development of ItchyGo, which is based on a similar logic of attracting and non-toxic eliminating dust mites living in dog baskets.

ExAller® is thus part of a global strategy for the environmental management of allergen exposure, complementary to laundry care and regular vacuuming measures.