

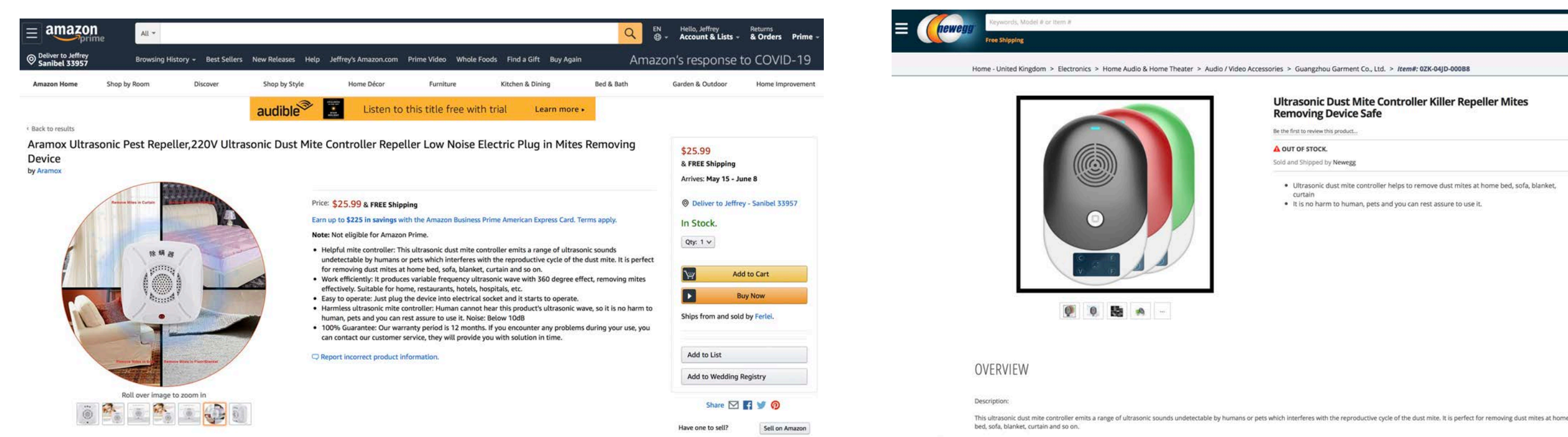
Ultrasonic “Mite Killers” Fail to Decrease Mites in Carpeting

Jeffrey D. Miller MD Mission: Allergy, Inc. Hawleyville, CT and New York Medical College, Valhalla ,NY

Introduction

Reactivity to house dust mites is a major cause of allergic disease ¹, the treatment of which includes allergen-avoidance ². To be of clinical benefit, however, allergen-avoidance measures must actually result in a meaningful decrease of the mite allergen ³.

Several devices advertised online claim to decrease dust mite survival by the use of ultrasonic sound.



One published ⁴ study claimed clinical benefit from such a device, but no published data demonstrate the ability of these devices to decrease mite numbers or mite allergen levels.

Methods

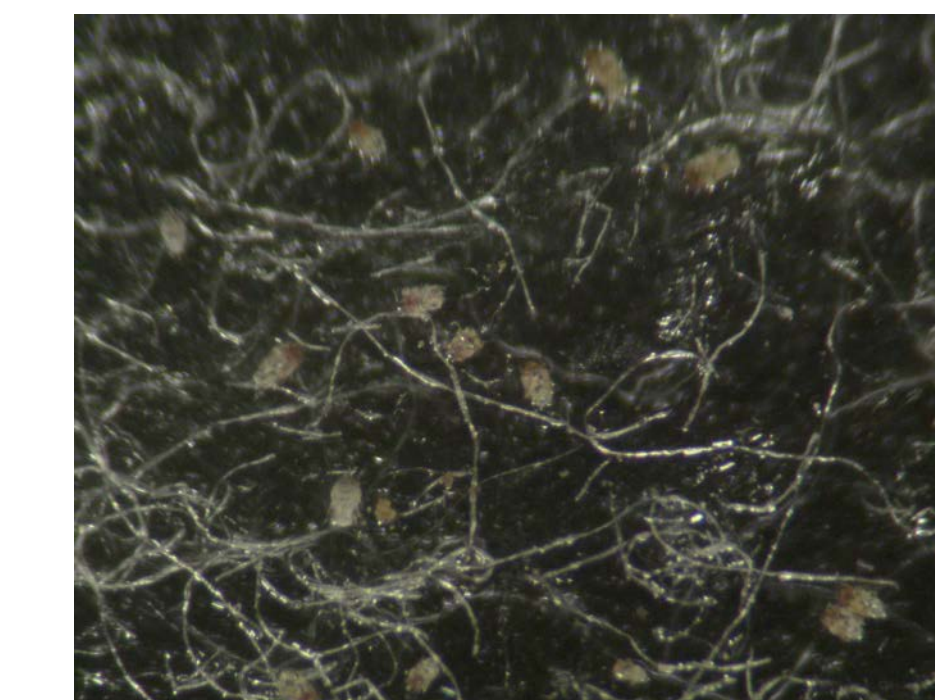
I evaluated the effectiveness of two such devices, “Aramox Ultrasonic Dust Mite Controller Repeller”, and “Newegg Ultrasonic Dust Mite Controller”.



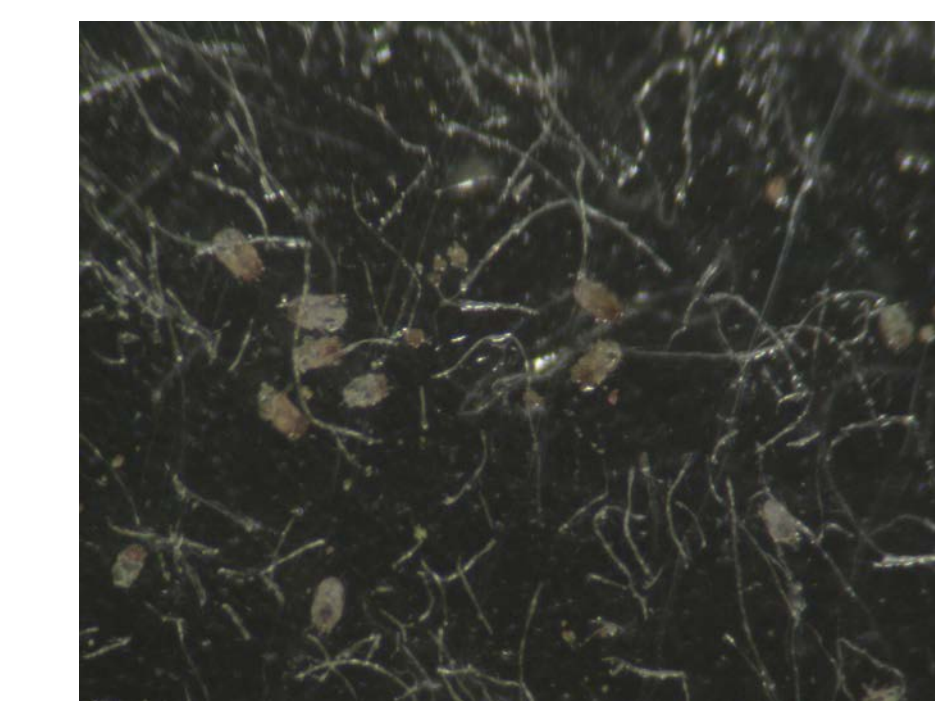
Ten sections of carpeting were inoculated with dense cultures of *D. pteronyssinus* mites. Half were placed a meter away from an emitting ultrasonic device; the other half were placed in a different room with identical conditions of temperature and humidity but without ultrasonic exposure. After 3 weeks, mite density was assessed by the Mobility Test of Bischoff ⁵, with mites trapped over 3 days on transparent Con-Tact adhesive sheets placed on the carpet sections. The Con-Tact was then removed and viewed under 20x microscopy.

Results

There was no apparent difference in the number of live mites in the treated vs. the control samples.



Representative control sample. Untreated for 3 weeks. 20x magnification



Representative treated sample. Ultrasonic exposure for 3 weeks. 20x magnification

Conclusions

Contrary to the claims being made for these devices, these two ultrasonic emitters, used as directed, failed to produce any noticeable decrease in mite numbers in carpeting.

References

1. Miller. The Role of Dust Mites in Allergy. *Clinical Reviews in Allergy & Immunology* 57:312-329, 2019
2. Portnoy, Miller, Williams, *et al* Environmental assessment and exposure control of dust mites: a practice parameter. *Annals of Allergy, Asthma & Immunology* 111:465-507, 2013
3. Miller. Analyzing environmental control studies by the achieved decrease in exposure. *Journal of Allergy and Clinical Immunology: In Practice*, 8:2456, 2020
4. Startari, Arrigoni, Corvo, Fiocchi. Clinical efficacy of a device of ultrasonic revulsion in the therapy of children with persistent asthma due to allergy to dust mites. *Italian Journal of Allergy and Clinical Immunology* 15(1):39-42, 2005
5. Bischoff, Fischer. New methods for the assessment of mite numbers and results obtained for several textile objects. *Aerobiologia* 6, 23–27, 1990

Funded by

