

cleaning routines significantly reduces allergen exposure. We investigated the effect of Swiffer® vs. a standard electrostatic cloth (EC) at reducing allergen levels on hard surfaced floors in a DCC.

METHODS: Two tiled rooms in a 2 y/o DCC (15-20 toddlers/room) were selected. Either a fresh Swiffer® or EC was used to clean the floors of each room nightly and then sealed in separately labeled ziplock bags for 10 weeks. Dust extraction was performed similarly for Swiffer® and ECs. Five cloths, representing one cleaning week, were cut into 5' × 17' rectangles corresponding to the dust collection area and placed in a horizontal pan one on top of another separated by 10 ml of extraction buffer. After soaking overnight, a plastic roller was used to squeeze fluid from the cloths. The fluid was centrifuged and supernatants were stored at 4°C until analyzed. An indirect polyclonal ELISA was used to analyze the pooled fluid for dust mite, cockroach, cat and dog allergen.

RESULTS: On average Swiffer®, compared to ECs, collected more allergen/gm of dust/week: cat = 0.98 vs. 0.56 µg/gm (p<.05), dog = 1.85 vs. 1.18 µg/gm (p<.01), cockroach = 0.50 vs. 0.08 µg/gm (p<.05). Dust mite allergen was not detected in supernatants for either cloth. Based on weekly averages, total allergen over 10 weeks collected by Swiffer® is estimated to exceed ECs by 15.1 µg/gm.

CONCLUSIONS: Swiffer® is more effective than standard ECs at removing cat, dog and cockroach allergens from hard surfaced floors.

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1051 Survival of Dust Mites in Vacuum Storage Bags

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RATIONALE: Since dust mites are aerobic organisms and live in soft substrates including blankets and woolen clothing, I examined their survival when these substrates were placed in vacuum-seal storage bags.

METHODS: Blankets and woolen sweaters inoculated with *D. pteronyssinus* cultures were placed in Space Bag® vacuum-seal storage packs, and matching inoculated items were placed in a typical plastic storage container. Air was vacuumed from the storage packs using a Nilfisk GD 1010 vacuum (102" water-lift suction), and the vacuum-seal packs and conventional storage container were kept at ambient conditions (August and September in CT) for two weeks. The containers were then opened, sections of the fabrics were cut and vacuum-cleaned, clear adhesive Contac paper was placed over the sections, and they were placed on a microscope slide warmer, the surface temperature of which was increased by about 1°C/min over 50 minutes. The adhesive sheet was then removed, and the number of mites counted under a microscope.

RESULTS: There were large numbers of live mites both in the blankets and sweaters stored in the vacuum packs and in those stored in the conventional storage containers.

CONCLUSIONS: The degree of vacuum produced in these vacuum-seal storage bags was insufficient to kill dust mites, at least over the period of this experiment.

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1052 Is Picture of Mucociliary Clearance after Irradiation Important for Patient's Prognosis?

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RATIONALE: Answer on the question addressed in the title consists in the series of findings that comprehensively demonstrate intervention of radiation into the dynamics of mucociliary clearance (MC). Up to certain level radiation plays a role of stimulus which in the healthy organism does not evoke a response but in an ill organism may lead to irritation and activate triggering mechanism for changes realized on the level of cells responsible for the MC.

MATERIAL: Our research has been carried out on experimental mice BALB/c mean weight 20.2 g, mean age 8 weeks whole body irradiated with 6.02 Gy as well as on children patients of the age 12 with osteosarcoma. Since the first changes appear on cellular level we have investigated excisions in transmission and scanning electron microscopes at magnifications up to 30000× and in polarization microscope.

RESULTS: We have found complex of changes—decreased occurrence of alveolar macrophags, apoptosis of cells, retraction of endothelial lining of capillaries of the barrier of gaseous exchange, proliferation of the new capillaries and significant broadening of the barrier of gaseous exchange.

CONCLUSIONS: Our findings show that changes after irradiation are serious and must not be neglected when determining prognosis of a patient. Also the cells involved in the MC sensitively respond to irradiation. Our work points out importance of well-considered application of irradiation in order to prevent damaging healthy cells in their function in organs of vital importance to which lungs belong.

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1053 Beekeeper's Serum Inhibits In Vitro Activity of Bee Venom (BV) Phospholipase A2 (PLA2)

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RATIONALE: PLA2 is a major antigen involved in BV allergy. Increase of IgG antibodies (Ab) with high affinity for PLA2 has been used to evaluate desensitization (DS) efficiency. Does high level of Abs and subsequent binding to PLA2, inhibit in vitro activity of this enzyme? We evaluated this hypothesis in beekeepers (BK), who commonly have high levels of protective Abs and may experience multiple stings without any symptoms.

METHODS: we studied 13 occupational BK (OBK), 20 subjects with beekeeping as hobby (HBK) and 12 healthy controls. In vitro enzymatic activity of 5 µL of BV-PLA2 (100 IU/ml, SIGMA) was quantified using a fluoroscopic method [Radvany. Analytical Biochemistry (1989)]; results are expressed as µmol/min per mg of protein. The same experiment was carried out after addition of 100µL of serum to quantify the effect of patient serum on PLA2 activity.

RESULTS: PLA2 activity was significantly decreased in beekeepers: OBK 4.5±2.1°, HBK 24.2±6.2°, controls 133.2±12.9 µmol/min (mean±sem, °p=0.0001 vs controls). Moreover, subjects who experienced multiple stings (more than thousand yearly) exhibited the lowest PLA2 activity: 3.4±1.2 µmol/min.

CONCLUSIONS: We found that sera from BK inhibited the in vitro activity of BV-PLA2, and this could be related to the presence of protective Abs against BV. This test might be useful in the follow-up of BV desensitization.

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