standard deviation of Rotarod Sampler was 124.2 and 40, and 23.4 and 10.6 for the prototype. The correlation coefficient was 0.61, signifying moderate positive association between pollen counts obtained from the Rotarod Sampler and prototype.
Conclusion: Though our prototype has a larger surface area, it collected significantly less pollen than the Rotarod Sampler. A moderate correlation between the two devices was observed, though increases in the RPM of the prototype should be considered for future evaluation.

Total Pollen Collected Each Day from Rotarod Sampler Rods and Prototype Slides

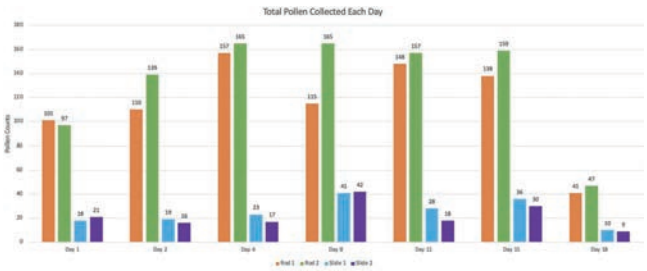

Figure Total pollen counted for each day between the Rotarod Sampler, using two I-rods, and our prototype, using two glass slides.

P034

BAYESIAN NETWORK ANALYSIS INDICATES A HIGH PROBABILITY OF SIMULTANEOUS SENSITIZATION TO MAJOR GRASS ALLERGENS

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Introduction: Grass pollen allergy impacts many patients characterized by high allergen cross-reactivity. The primary elicitor of grass allergy is Phl p 1. However, IgE to Phl p 5 or Phl p 2 also serve as markers of true grass pollen sensitization. Understanding the patterns of sensitization to grasses in certain population remains important for accurate prevention and treatment of allergy to Poaceae pollen.
Methods: Data obtained by multiplex allergy testing Alex[2] was collected from 20,333 patients. Bayesian Network analysis was used to build probabilistic patterns of patient sensitization to majpr grass pollen allergens.
Results: Grass pollen sensitive individuals constituted 6170 patients or 30.34 % of the entire database; 3935 (19.35 %) were sensitive to Phl p 1; 3460 (17.02 %) – to Lol p 1; 2842 (13.98 %) – to Cyn d 1; and 1772 (8.71 %) – to Phl p 2. Bayesian Network analysis indicated that sensitization to Phl p 1 was associated with sensitivity to Cyn d 1, Lol p 1, Phl p 2 and Sec c_pollen with 94.70 % probability. Sensitization to Lol p 1 was connected with sensitivity to Cyn d 1, Pas n extract, Phl p 2, Phl p 5 with 91.96 % probability. Cyn d 1 sensitization could be seen together with Cyn d, Sec c_pollen, Phr c extracts and Phl p 6 sensitization in 86.58 % of cases.
Conclusion: Bayesian Network analysis suggests that group I allergens are highly cross-reactive and can be a good target for AIT in the Ukrainian population sensitive to grass pollen.

P035

HOURLY VARIATION OF POLLEN COUNTS

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Introduction: Patients with pollen allergies need to be aware about the time of day when they are exposed to the higher pollen levels.
Methods: we first evaluated the accuracy of the pollen measurements of an automated real-time pollen imaging sensor (APS−300) to that of the Rotorod sampler with manual counting at the Atlanta Allergy and Asthma Clinic (AAAC) located ~30 km northwest of downtown Atlanta (i.e. the Marietta site). We then investigated the diurnal variability of pollen levels at all three of our study sites (Marietta, Emory ~ 7 km northeast of downtown Atlanta, and SouthFace at downtown Atlanta) from 24 March to 31 March 2021, which measured the highest pollen levels during our study period. We also averaged the hourly pollen concentrations during this week to reduce day-to-day fluctuations due to weather conditions.
Results: Analysis of data collection knows that real-time pollen monitoring measured lower pollen levels between 4 am to noon and then a gradual increase with the peak pollen counts at approximately 2 PM to 9 pm.
Conclusions: Hourly pollen counts are difficult to measure but the automated real-time imaging sensor enables accurate hourly counts. Clinical implication is that patients with pollen allergy should plan their outdoor activities in the morning when the pollen counts are lowest.

Real-Time Pollen Monitoring

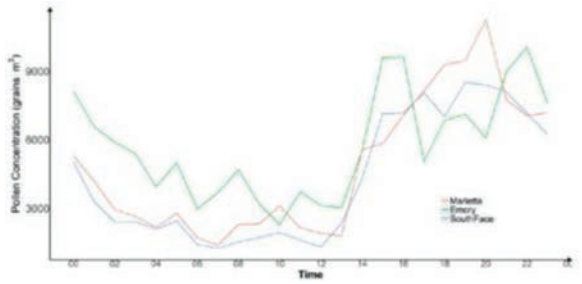

Figure Real-Time Pollen Monitoring of three devices over 24 hours on March 24, 2021.

Allergy Diagnostics and Immunotherapy

P040

HYMENOPTERA VENOM SKIN TESTING: ADOPTING AN ACCELERATED TEST METHOD

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Introduction: The standard method of hymenoptera venom intradermal skin testing (IDST) is performed at a starting concentration of 0.001 to 0.01 μg/ml and increased every 10-fold until positive or maximum concentration of 1 μg/ml. Accelerated methods such as a 1-step method utilizing only the 1 μg/ml have been reported as safe, however many institutions have not adopted this approach. Our objective is to determine and compare the outcomes and safety of standard and accelerated venom IDST.
Methods: This is a retrospective chart review of patients with suspected venom allergy who underwent IDST at three allergy clinics within a single health care system. Demographic data, test method (standard vs. accelerated), test results, and adverse reactions were reviewed.
Results: Data collection is ongoing. Two out of 119 patients (1.7%) who underwent standard venom IDST experienced adverse reactions while none of 24 patients who underwent accelerated venom IDST experienced adverse reaction. One patient, with a history of chronic urticaria, experienced urticaria. The other experienced anaphylaxis requiring epinephrine although had tested negative to all venom concentrations. Within the standard method, ≥80% of positive results occurred at concentrations of 0.1 or 1 μg/ml, and ≥60% of positive results occurred at 1 μg/ml for all species except wasp which was 45% and 40% at 0.1 and 1 μg/ml respectively.
Conclusion: The result of this study underscores the safety of venom allergy testing. As majority of positive results occurred at 0.1 or 1 μg/ml, adopting an accelerated approach would reduce time and cost associated with testing.