	Purpose	Tests	Tables/Figures
Descriptive Statistics	for demographic and general data	Mean ± standard deviation (SD) for continuous variables (e.g., age). If data is skewed, report median and interquartile range (IQR).	A table summarizing demographics (age, sex, residence duration)
		Frequency and percentages for categorical variables (e.g., sex, presence of allergy, exposure history)	A bar chart showing the distribution of sensitization rates across pollen allergens.
Sensitization Prevalence Analysis	Assess overall prevalence of sensitization to each pollen allergen	Chi-square test (or Fisher's exact test for small sample sizes) to compare prevalence rates of sensitization between male vs. female, different age groups, or residence duration categories.	A bar chart comparing sensitization rates for different allergens
		McNemar's test if comparing paired data (e.g., self-reported allergy vs. actual SPT results)	A table showing P-values for gender-based or age-based differences
Association Between Sensitization and Case Report Data	Family History of Allergy	Chi-square test to determine if a significant association exists. If needed, calculate an odds ratio (OR) with a 95% confidence interval (CI)	
	Self-Reported Allergies vs. Actual Sensitization	McNemar's test (for paired categorical data) to check if self-reported allergy aligns with SPT results	A Venn diagram showing the overlap between self-reported pollen allergy and actual sensitization
	Smoking Exposure and Sensitization.	Chi-square test for comparing smokers vs. non-smokers and living with a smoker vs. not in terms of pollen sensitization	
	Pet Ownership and Sensitization	Chi-square test to compare sensitization rates between pet owners vs. non-pet owners	

		Logistic regression to control confounders (age, family history, etc.)	
Severity of Sensitization (Wheal Size)	Larger wheal size in SPT is associated with certain risk factors (e.g., longer residence duration, family history, smoking exposure)	Spearman's correlation (if wheal size is not normally distributed) to analyze relationships with age, duration of residence, or smoking exposure	A scatter plot showing correlation between wheal size and duration of residence
		Kruskal-Wallis test if comparing wheal size across multiple categorical groups (e.g., residence duration: <1 year, 1-5 years, >5 years)	
		Mann-Whitney U test for two-group comparisons (e.g., those with vs. without family history of allergy)	
Predictive Modeling for Pollen Sensitization	Identify the most significant predictors of pollen sensitization	Multivariate logistic regression: Dependent variable: Pollen sensitization (binary: positive or negative SPT); Independent variables: Age, sex, family history of allergy, residence duration, smoking status, pet ownership, parasitic infections	
		Model Output: Adjusted odds ratios (OR) with 95% CI to show which factors significantly contribute to pollen allergy risk. A receiver operating characteristic (ROC) curve to evaluate the model's predictive accuracy	
NOTE:	Significance Level: Set $P < 0.05$ for statistical significance. Adjust for multiple comparisons using Bonferroni correction if testing many allergens		