

# COVID-19 Testing and Challenge Preparations

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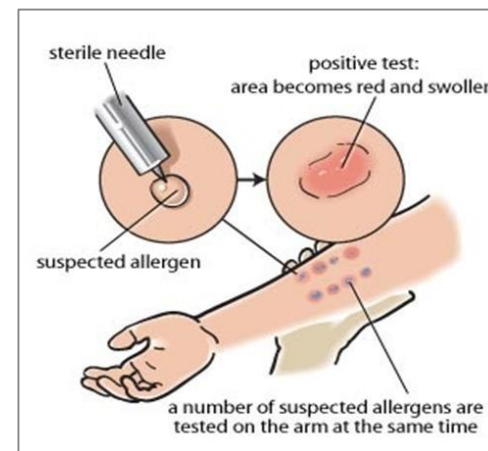
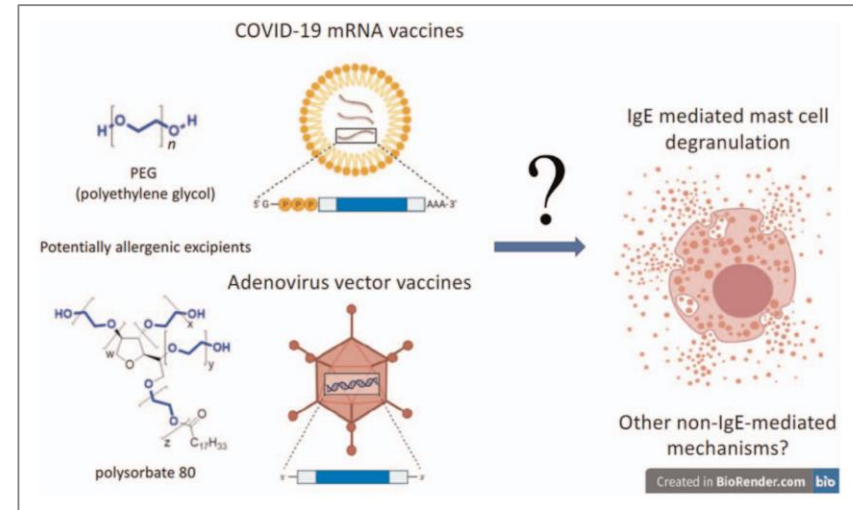
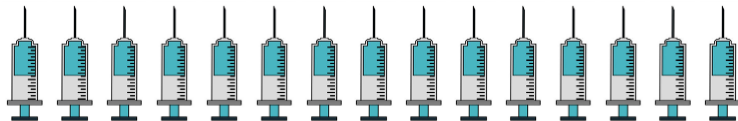


## PURPOSE

PEG 3350 and Polysorbate 80 are two inactive ingredients in the Pfizer-BioNtech and Moderna vaccines known to cause allergic reactions in patients. In preparation for vaccine administration roll-out within our health system, Medicine Allergy Clinic and Outpatient pharmacy collaborated to formulate testing preparations. If patient indicated a possible allergy to PEG 3350 or Polysorbate 80 during the screening process, they were referred to the Medicine Allergy team. Key personnel involved in project were physicians and nurses from the medicine allergy clinic as well as pharmacists and externs from outpatient pharmacy.

## MATERIALS

Project started in February 2021 and is ongoing based on patient need. Patients were scheduled by clinic on same day of the week to ensure best use of staff time and efforts. Pharmacy was informed of scheduling in advance to allow enough time to order medication, schedule preparations within compounding workflow and verification as well as pick-up by the clinic. Each preparation for PEG 3350 and Polysorbate 80 had one skin prick and two intradermal tests, therefore a total of 3 syringes per test. There was also preparation of a control for PEG 3350. Protocol followed was from recommendations in an article by Banerji A, et al in the Journal of Allergy and Clinical Immunology: In Practice (2021). Preparations were made following USP 797 guidelines for compounding of sterile preparations. Pharmacy externs were utilized in cleanroom preparation of all orders. Each patient would have a total of 15 testing syringes. There were 3 syringes of varying concentrations for Methylprednisolone acetate, 3 syringes of varying concentrations for Triamcinolone acetonide, 3 syringes for Methylprednisolone succinate (control), 3 syringes of polysorbate 80, 3 syringes of PEG 3350, all totaling 15 syringes per patient.



## RESULTS

This proved to be a very detailed preparation protocol, with each patient receiving a total of 15 testing syringes. These 15 syringes would take about 1.5 hours for pharmacy to complete. We started with one patient the first week, 1 more patient another week and up to 3 patients or 45 syringes at the most at one time. Preparing 3 patients or 45 syringes would take pharmacy about 3 hours. Therefore, preparation start times were adjusted to 6am in the morning so as to limit disruption of other work in the cleanroom and have all orders in the clinic by 9am. The clinic scheduled patients in the morning to allow for increased observation time. Feedback from the clinic was that patients were testing positive, reflecting that they were indeed allergic to one or more of the inactive ingredients (either PEG 3350 or polysorbate 80) found in the vaccine. Determining appropriate next steps was between patient and provider accordingly. Additional feedback from the clinic indicated patients receiving the straight polysorbate 80 dilution set were experiencing lots of irritation and stinging upon administration. This was stopped and Refresh Tears was added to test for polysorbate 80 allergy in addition to triamcinolone.

## CONCLUSION

Key success factors contributing to positive outcomes include having an established relationship between medicine allergy providers and outpatient pharmacy. Pharmacy prepares all allergens for the clinic following proper USP 797 guidelines. Outpatient pharmacy has two sterile compounding hoods within the pharmacy allowing for compounding of sterile preparations on-site. Open communication between all staff members to ensure everything is ready in a timely and efficient manner. This collaboration allowed for a successful method of testing patients to PEG 3350 and Polysorbate 80 allergies.

## ACKNOWLEDGEMENTS

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