



## 2025 NEW YORK REGIONAL SOCIETY OF PLASTIC SURGEONS ANNUAL RESIDENTS' NIGHT RESEARCH COMPETITION

MONDAY, MARCH 10, 2025  
NEW YORK ACADEMY OF MEDICINE

**ABSTRACT SUBMISSION TITLE:** *B3 - Living In Glass Houses: An Epidemiological Study of Hand and Wrist Injuries from Household Glass Products*

**Additional Author(s):**  
*Ethan Plotsker, Sherron Thomas, Fabiola Aguilera*

**Abstract Presenting Author:**  
*Brian Pettitt, MD*

**Plastic Surgery Residency Training Program:**  
*Montefiore Medical Center/Albert Einstein College of Medicine of Yeshiva University*

### Abstract Text:

#### PURPOSE:

Hand and wrist injuries caused by household glass products occur frequently but the literature lacks a comprehensive evaluation of nationwide injury patterns. We hypothesize that these injuries are most commonly caused by glass doors, windows, and panels due to their large size and tendency to shatter but that their incidence is down-trending due to safety regulations resulting in increased use of tempered glass products.

#### METHODS:

The study is a retrospective analysis of epidemiological data from the National Electronic Injury Surveillance System (NEISS) database from 2014 to 2023. Data extracted from the database included demographic variables including age and gender, types of household glass products including drinking glasses, glass bottles and jars, glass doors, windows, and panels, and mirrors and mirror glass. Injuries were categorized according to anatomic location and type, including amputation, avulsion, contusion, dislocation, foreign body, fracture, laceration, nerve damage, and puncture. Statistical

analysis included descriptive statistics and chi-squared test for significance with Poisson regression employed to assess trends over time.

#### RESULTS:

A total of 1,153,229 injury cases were identified, including 669,274 cases among males and 483,955 cases among females. The overall incidence decreased significantly by 29.3% over the study period ( $p < 0.001$ ). Incidence followed a unimodal distribution with a peak in the 20-24 year-old age group. Males were 0.3% more likely to be injured than females ( $p < 0.001$ ) and were more likely to be injured in the hand while females were more likely to be injured in the fingers ( $p < 0.001$ ). Almost half of all household glass-related injuries were caused by glass doors, windows, and panels ( $n = 516,154$ , 44.8%), and one-third caused by drinking glasses ( $n = 384,247$ , 33.3%). Glass doors, windows, and panels were most likely to cause injuries to the hand and wrist rather than fingers ( $p < 0.001$ ).

#### CONCLUSIONS:

- The incidence of injuries caused by household glass products has decreased significantly over the last ten years likely due to safety regulations resulting in increased use of tempered glass products
- Glass doors, windows, and panels are the most common household glass products associated with hand and wrist injuries and most frequently cause more proximal injuries to the hand and wrist that can result in severe morbidity due to injury to critical structures
- Household glass products remain a frequent cause of hand and wrist injuries and increased public health awareness and safety regulations are required to limit their incidence