

# Exploratory Analysis of Measles Susceptibility Trends in Glasgow (1998–2012)

## 1 Exploratory Data Analysis

Exploratory Data Analysis (EDA) was conducted to understand trends in measles susceptibility among pre-school children in Glasgow from 1998 to 2012. This includes examining year-to-year patterns, comparing susceptibility before and after 2004, and visualizing distributions to support further statistical analysis.

## 2 Summary statistic

Table 1: Mean Measles Susceptibility by Year

Year	mean_susceptibility
1998	0.0488
2000	0.0599
2002	0.0725
2004	0.0680
2008	0.0811
2010	0.0518
2012	0.0474

*Table 1 shows the mean measles susceptibility by year. No sharp decline is observed post-2004, indicating that vaccine hesitancy may have persisted after the Wakefield article's retraction. Any recovery in vaccination rates appears gradual.*

### 3 Data visualisation

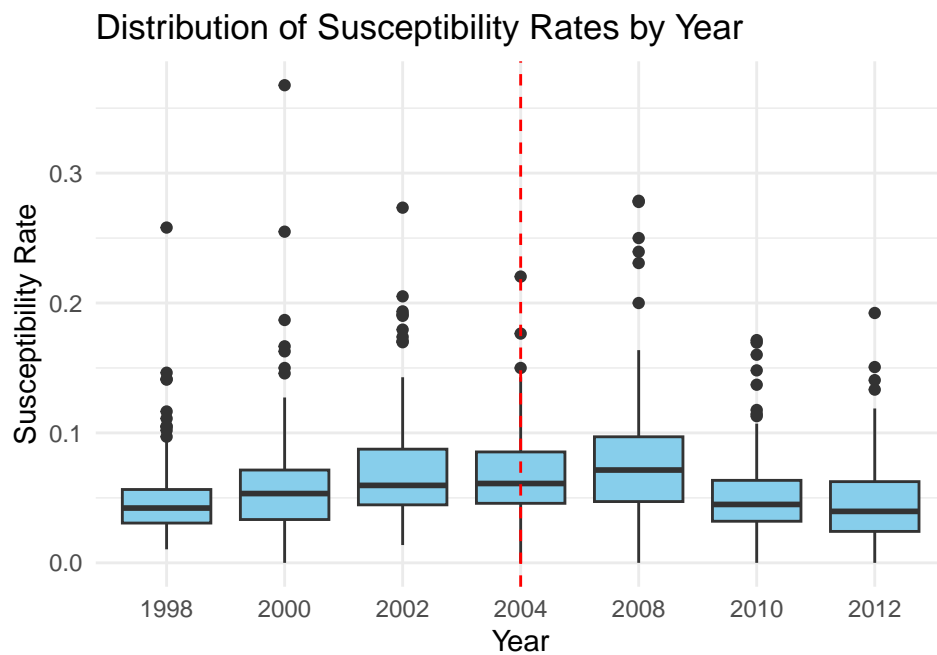


Figure 1: Boxplot of Measles Susceptibility Rates by Year in Glasgow (1998–2012)

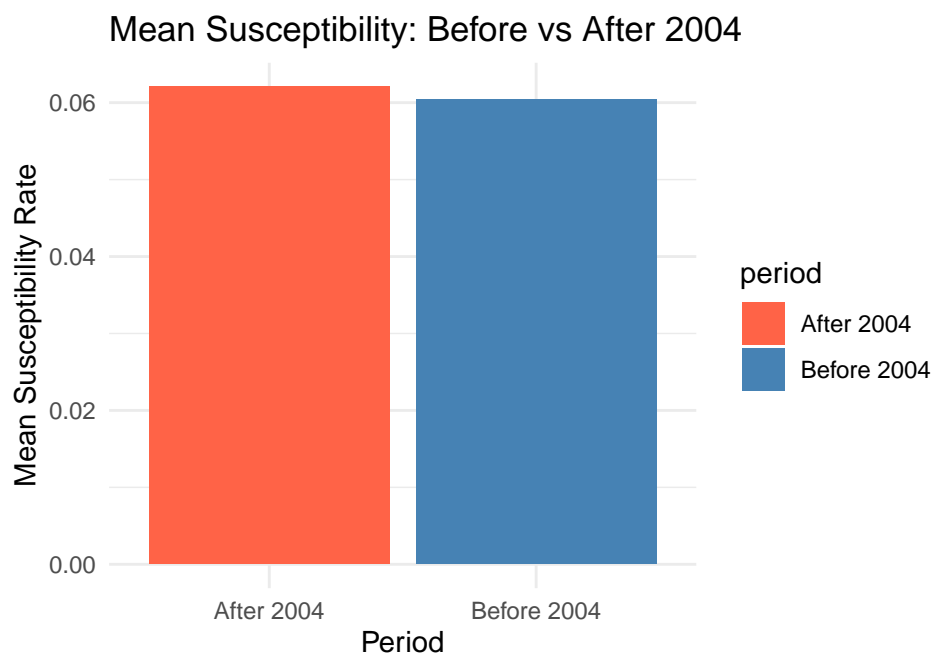


Figure 2: Mean Measles Susceptibility Before vs After 2004

Figures 1 and 2 together show measles susceptibility trends across years and between periods. Figure 1 highlights yearly distributions, with the 2004 retraction marked, showing a peak in 2008 but no sharp drop post-2004. Figure 2 compares average susceptibility before and after 2004, revealing only a slight decrease. These patterns align with Table 1, suggesting vaccine hesitancy persisted beyond the article's retraction.