

LOSS OF CHROMOSOME Y

A review article by Bruhn-Olszewska et al.¹ explores how mosaic loss of the Y chromosome (LOY), the most common post-zygotic mutation in aging men, affects male health. Besides age, LOY is associated with lifestyle factors such as smoking and genetic susceptibility (e.g., CHEK2 mutations). LOY, which occurs in a proportion of cells, especially in blood cells, is associated with a range of diseases:

- Immune system dysfunction, likely due to altered gene expression in leukocytes
- Increased risk of diseases, including cancer, cardiovascular conditions, and Alzheimer's disease
- Higher all-cause mortality

Recent studies also suggest that LOY could influence fibrosis, inflammation, and impaired tissue repair beyond hematopoietic cells.

1. <https://www.nature.com/articles/s41576-024-00805-y>