



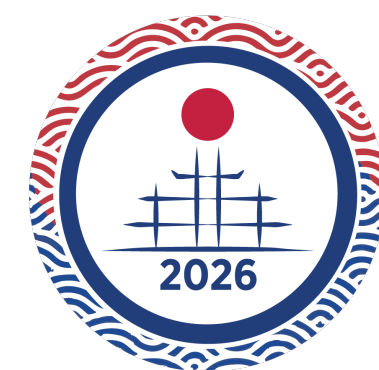
P1.058: Smoking Patterns by Birth Cohort in Korea

An Age-Period-Cohort Population-Based Modeling Study

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INTRODUCTION

Why Korean smoking histories matter

Lung cancer microsimulation requires lifetime smoking histories. Smoking patterns differ substantially by sex and birth cohort, so Korea-specific inputs are needed.

Objective

Estimate smoking prevalence, initiation, cessation, and intensity by sex and birth cohort to inform a Korean smoking history generator.

METHODS

Data sources

Men: Korea National Health and Nutrition Examination Survey (KNHANES), 1998, 2001, 2005, 2007–2024 — the longest historical coverage of smoking items.
Women: Korea Community Health Survey (KCHS), 2008–2025 — a far larger annual sample, needed for stable estimation at low smoking prevalence (<10%).

Analytic samples

Measure	Men	Women
Smoking status	59,855	2,106,387
Initiation	37,212	80,125
Cessation [†]	12,483	18,040
Intensity	21,471	57,574

[†]Former smoking: cessation for ≥1 year.

Age-period-cohort (APC) models

We fitted sex-specific age-period-cohort (APC) models following the CISNET smoking history generator framework. Age, period and birth cohort entered as natural cubic splines with sex- and outcome-specific knots; all models were survey-weighted. Quasibinomial logistic models estimated ever-smoking prevalence, initiation and cessation; a proportional-odds model estimated cigarettes per day (CPD). Estimates were combined to reconstruct never, current and former smoking prevalence by single year of age and birth cohort.

DISCUSSION AND CONCLUSION

A generational shift in smoking

Men

Current smoking prevalence peaked in cohorts born before 1970 and has fallen continuously in every cohort since. Mean cigarettes per day declined in parallel and cessation rose with age and calendar time: fewer men smoke, and those who do smoke less.

Women

Recent birth cohorts increasingly mirror the pattern in men — peak prevalence shifted from the 40s to the 20s and initiation now peaks in early adulthood. Even so, current smoking stayed below 10% in every cohort.

Relevance to lung cancer prevention

These are the first Korea-specific smoking-history inputs for lung cancer microsimulation, supporting refinement of national LDCT screening eligibility and projection of tobacco-control policy effects.

Interpretation

Self-report probably underestimates smoking, especially in women; cotinine-validated studies show substantially higher rates. The models cover combustible cigarettes only and exclude vaping and heated tobacco pathways, which likely contribute to the drop seen in the 2000 cohort.

REFERENCES & ACKNOWLEDGEMENTS

Key references

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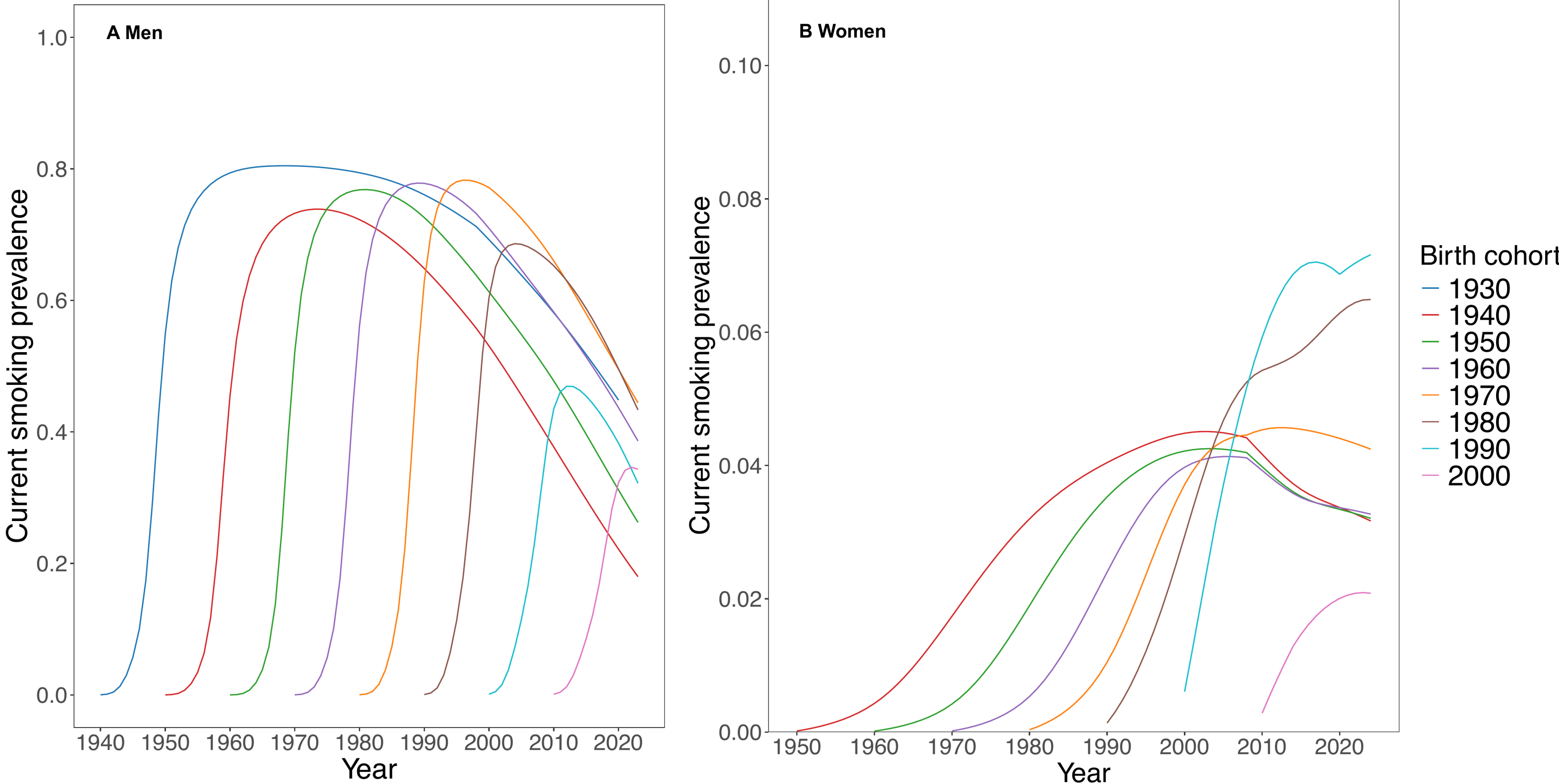
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AI use disclosure

OpenAI Codex (6 Astra) and Claude Opus 5 assisted with language editing and layout. Study data and source figures originate from the authors' manuscript and supplied figure files. All AI-assisted output was reviewed and verified by the authors.

RESULTS

Current smoking prevalence



Men

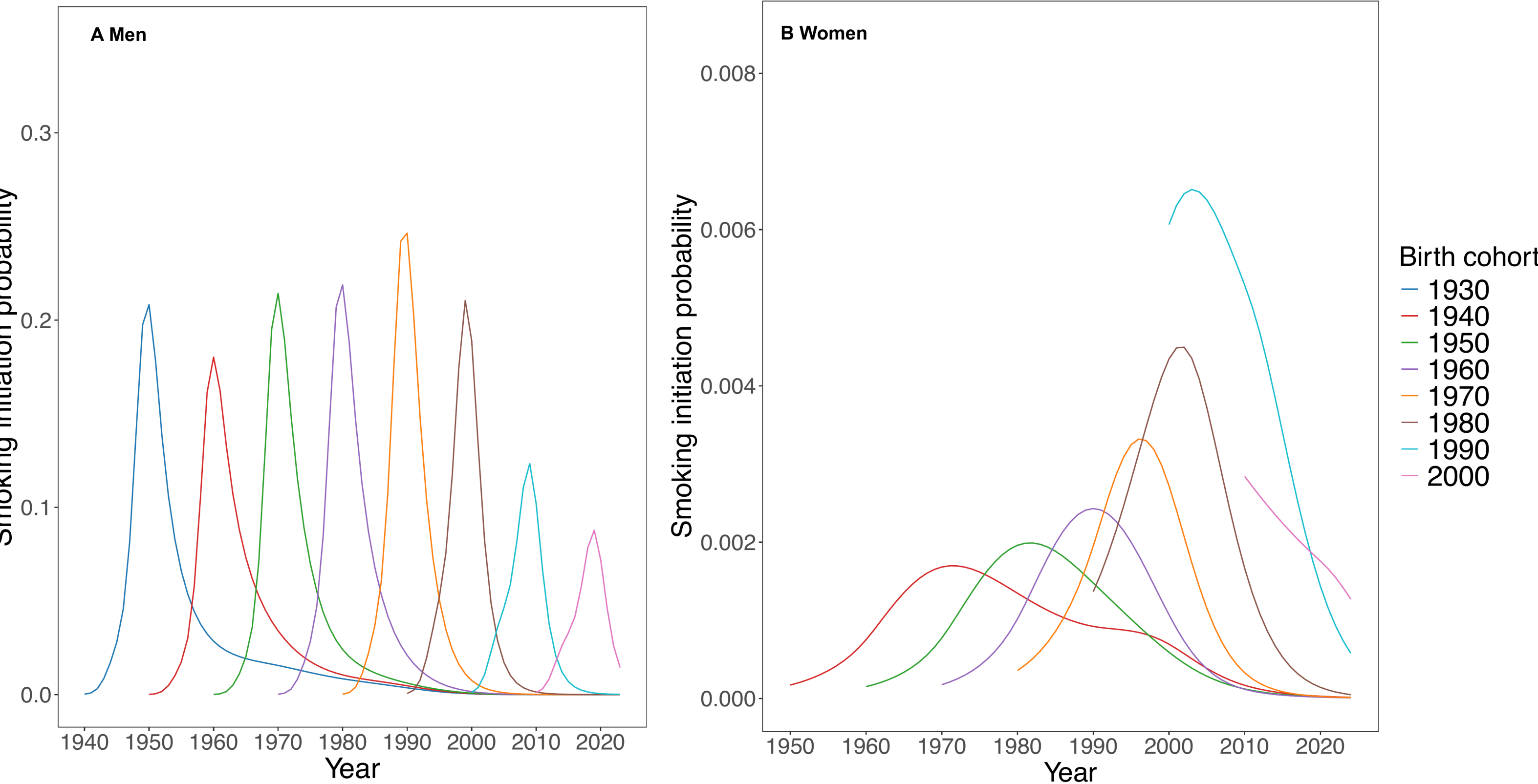
Peaks were highest in mid-century cohorts, then fell sharply from the 1970 cohort onward; the age at peak also moved earlier.

Women

Below 10% in every cohort. Peak age shifted from the 50s to the 20s; peak height fell to the 1960 cohort, rose through 1990, then dropped sharply in 2000.

*Note the 10-fold difference in y-axis scale.

Smoking initiation probability



Men

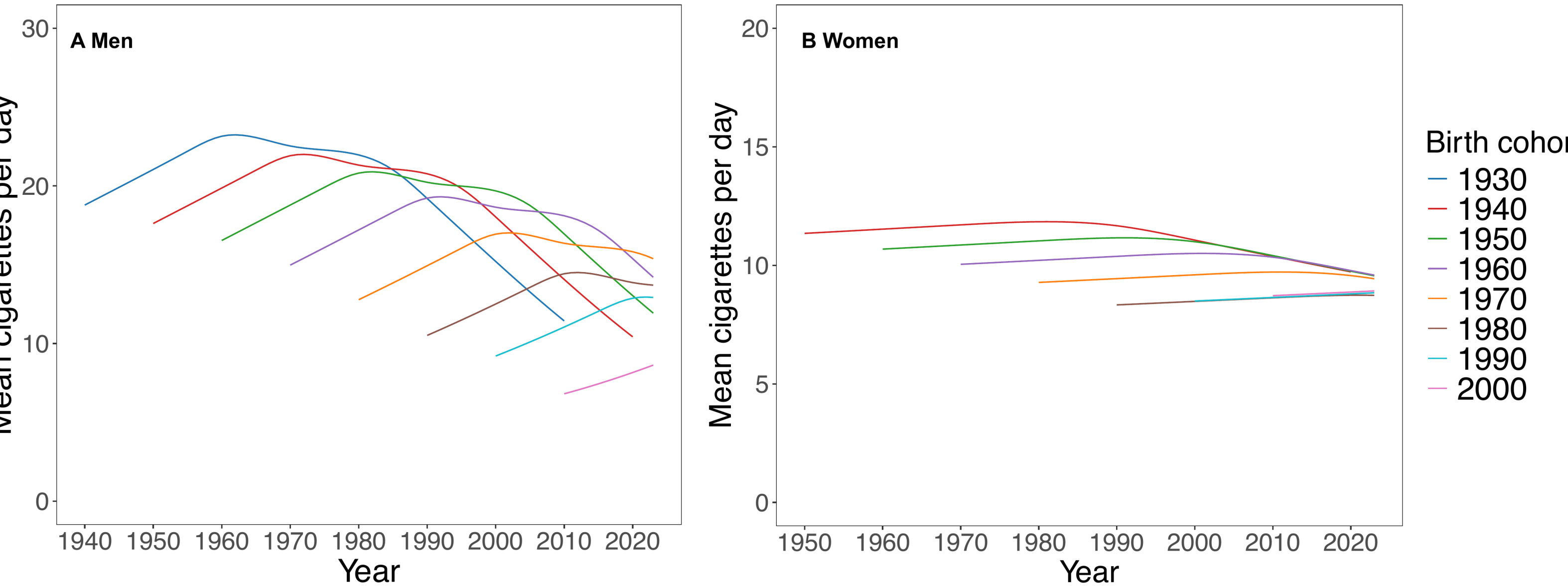
Peaked around age 20 in every cohort. The 1940 cohort had a transiently lower peak (Korean War era), higher peaks followed in the 1950–1970 cohorts, and initiation has declined since.

Women

. Older cohorts initiated late; recent cohorts shifted to an early-adult peak, converging on the shape seen in men at a far lower level

* Note the ~40-fold difference in y-axis scale.

Smoking intensity among current smokers



Men

Highest around age 30 and falling substantially after age 50. Recent cohorts smoke less, with less lifetime variation.

Women

Little variation by age; a modest decline across cohorts up to 1980, then almost flat.