

Smoking Cessation and Short-and Longer-Term Mortality

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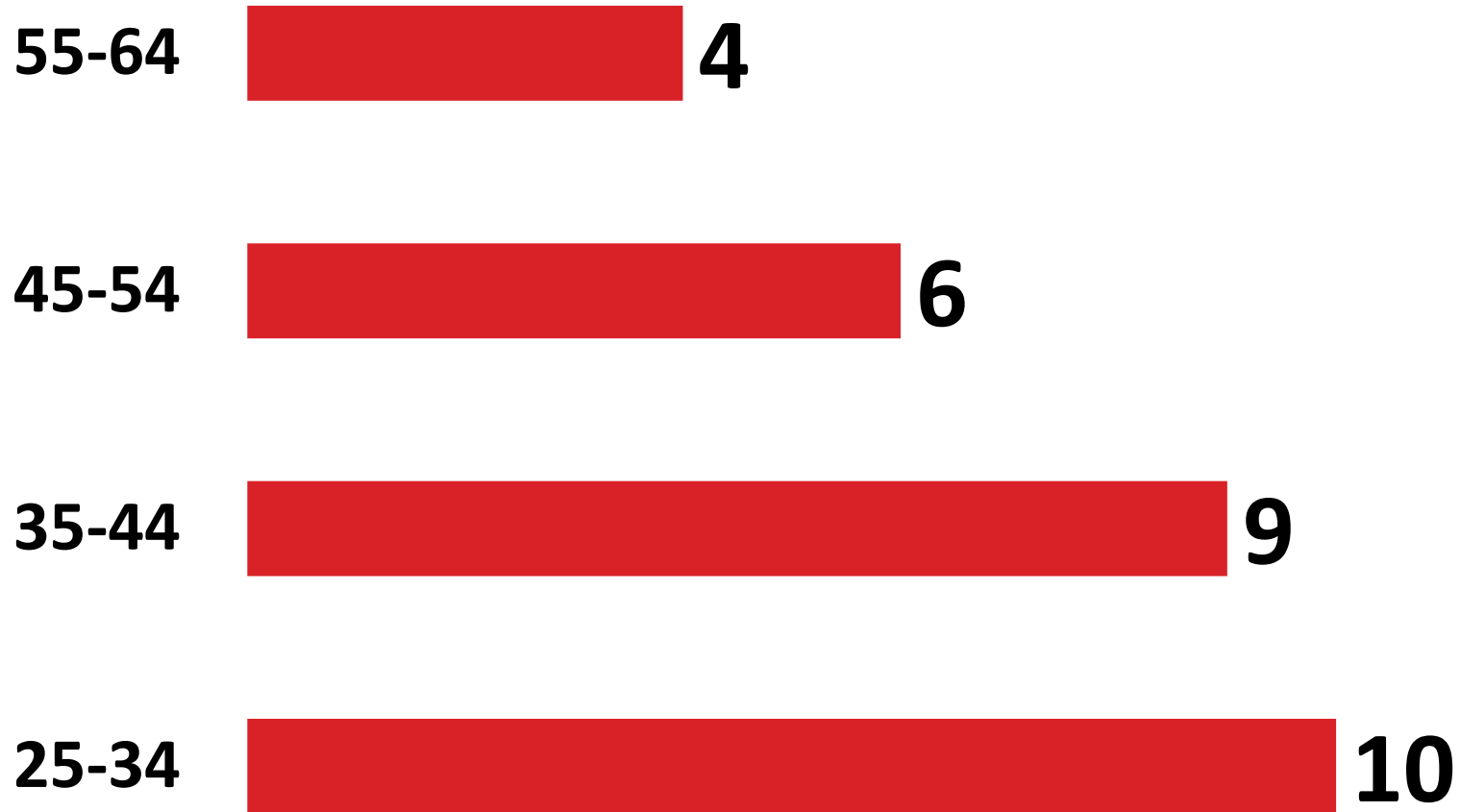
Conclusions

- **Current smokers have significantly higher death risks compared with never smokers (2.8-fold higher for women, 2.7-fold higher for men)**
- **Survival between 40 and 79 years of age is 12 and 13 years less in women and men, respectively, who smoked compared with never smokers**
- **Adults who stop smoking (at any age, but better <40 years) SUBSTANTIALY and QUICKLY reduce their excess risks**

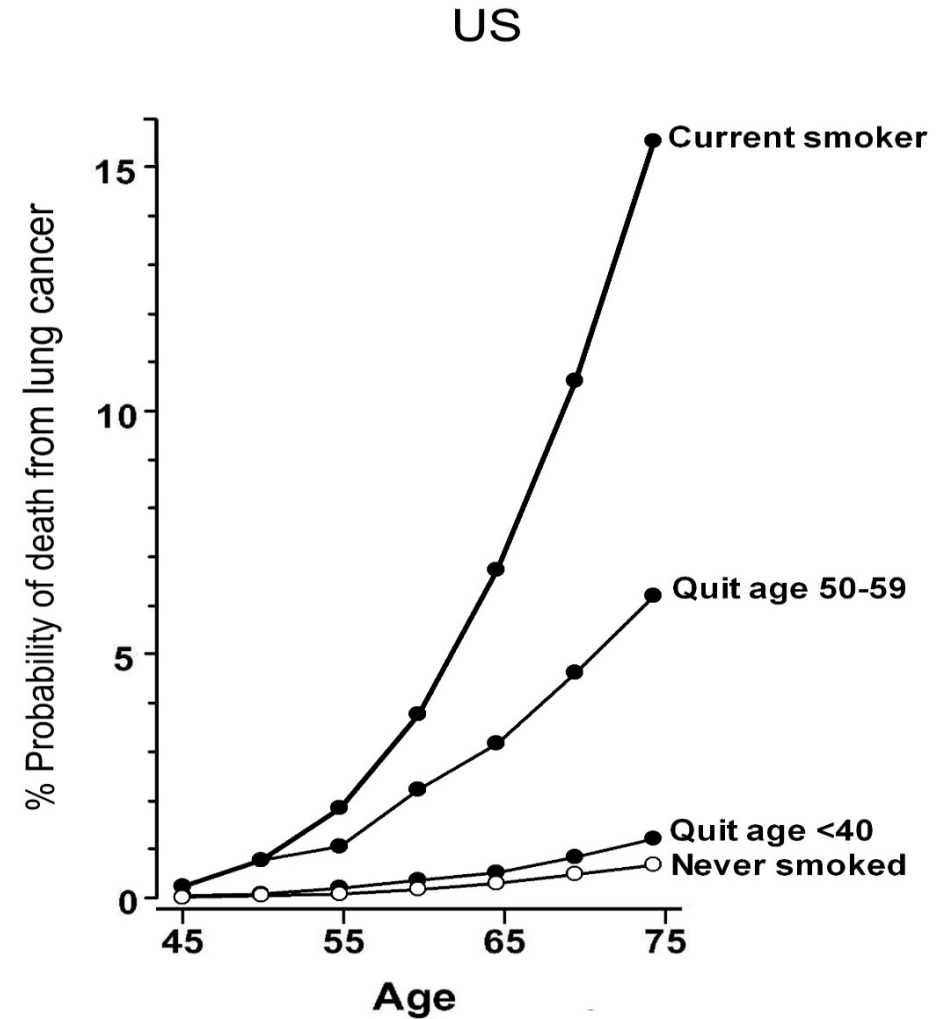
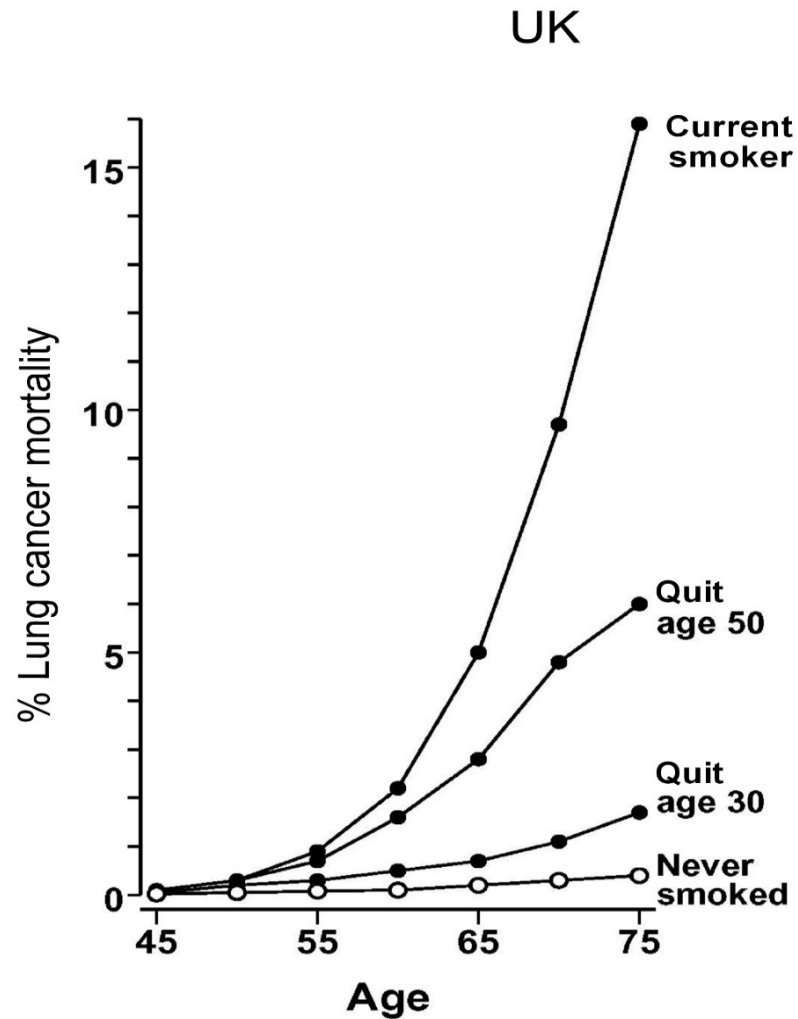
Worldwide no of smokers, drinkers and obese (B=billions, M=millions)

| <u>Exposure</u> | <u>No.</u> | <u>Annual deaths</u> |
|--------------------|------------|----------------------|
| Smoking | 1.1 B | 6-7 M |
| Drinking | 2.0 B | 2 M |
| Adiposity (BMI>30) | 0.6 B | ~ 1.5 M |

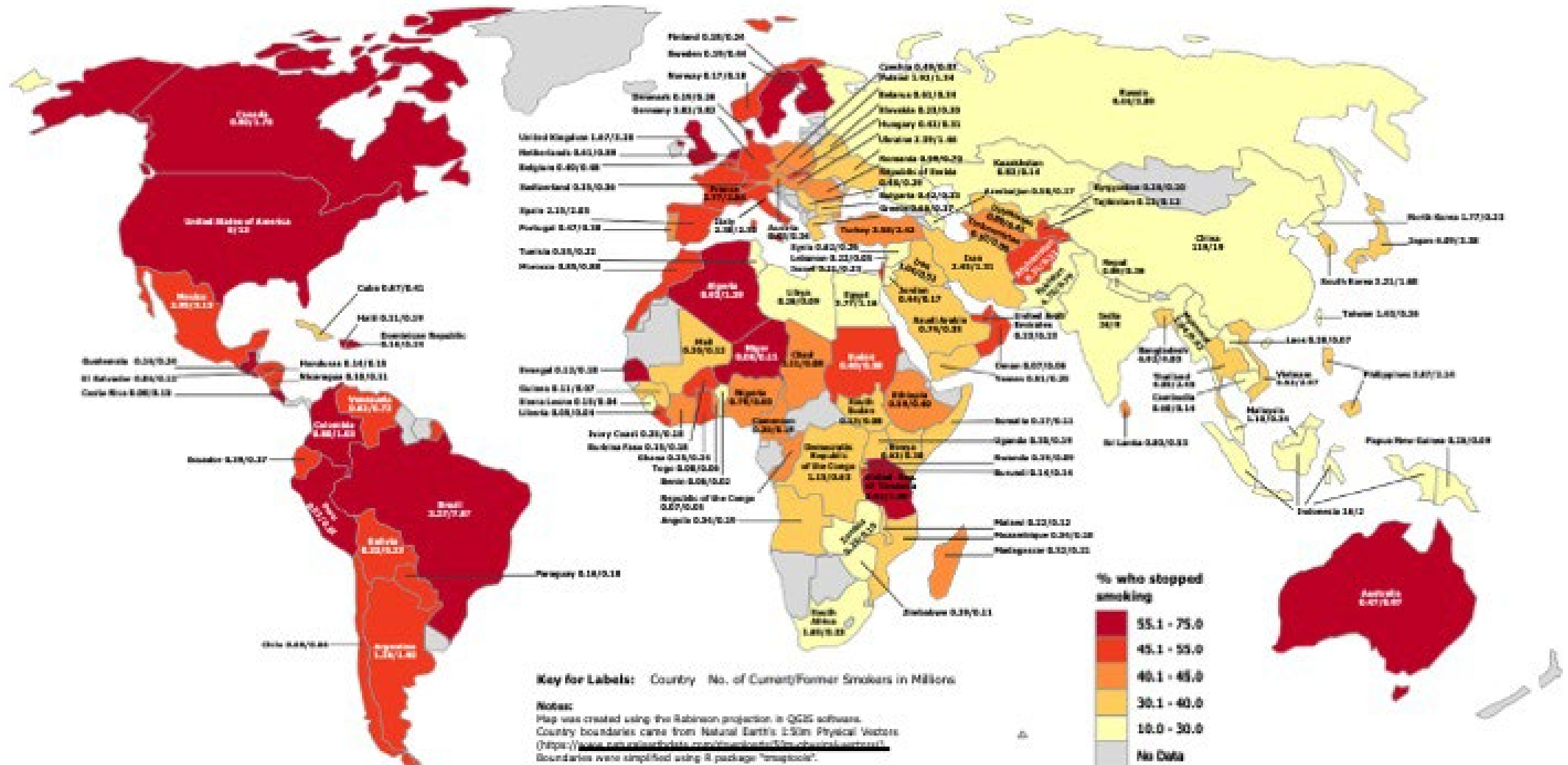
US: Years gained by age at stopping smoking



Stopping works



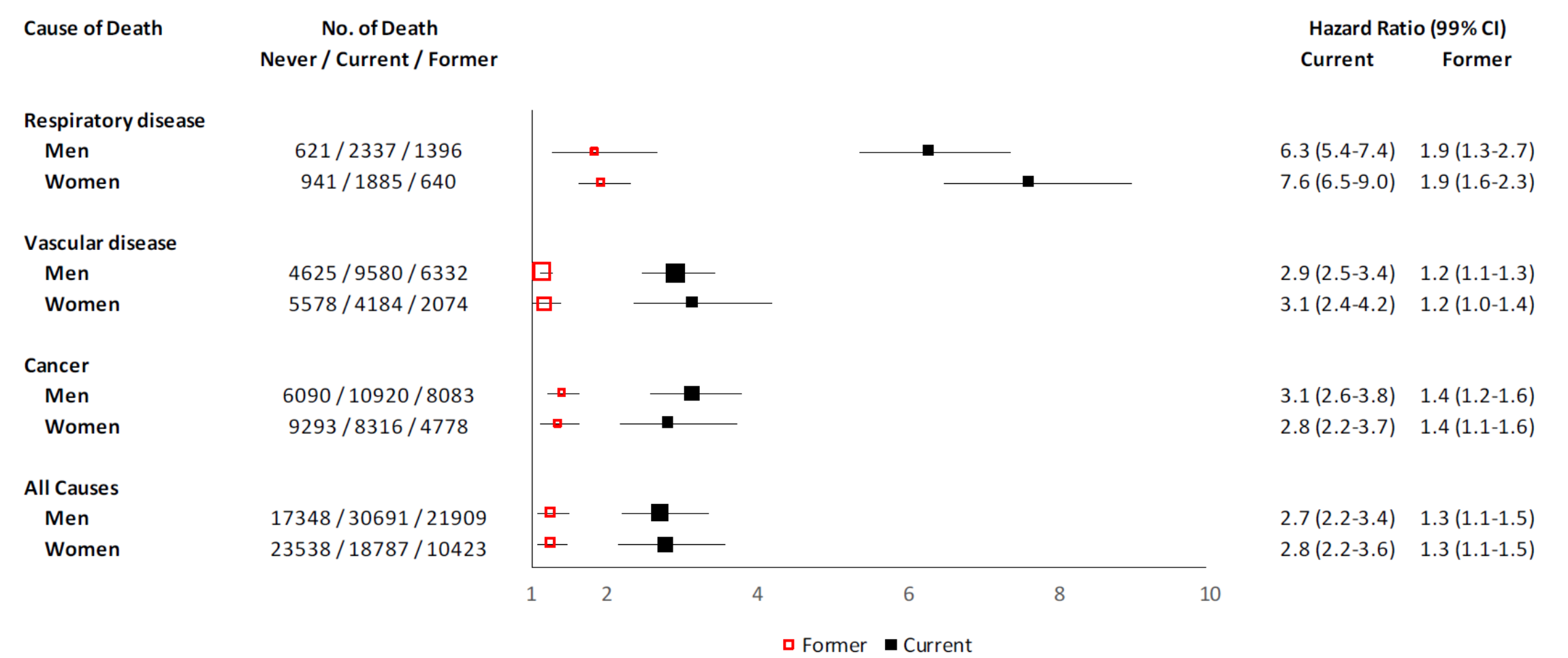
2015-19 (darker=more cessation)



NEJM Evidence Paper

- Pooled analyses of current or former smoker hazards in 4 national cohorts in US, UK, Norway and Canada
- Ages 20-79, studies done 1974 to 2018
- 1.5 million adults followed for 15 years, about 123,000 deaths
- Compare reductions in excess risk for current versus never and former (stratified by quitting <3, 3 to 9, and 10+ years earlier)
- Vascular, cancer, respiratory and all causes mortality

Hazard ratios comparing current and former smokers with never smokers by cause of death and sex in four national cohorts

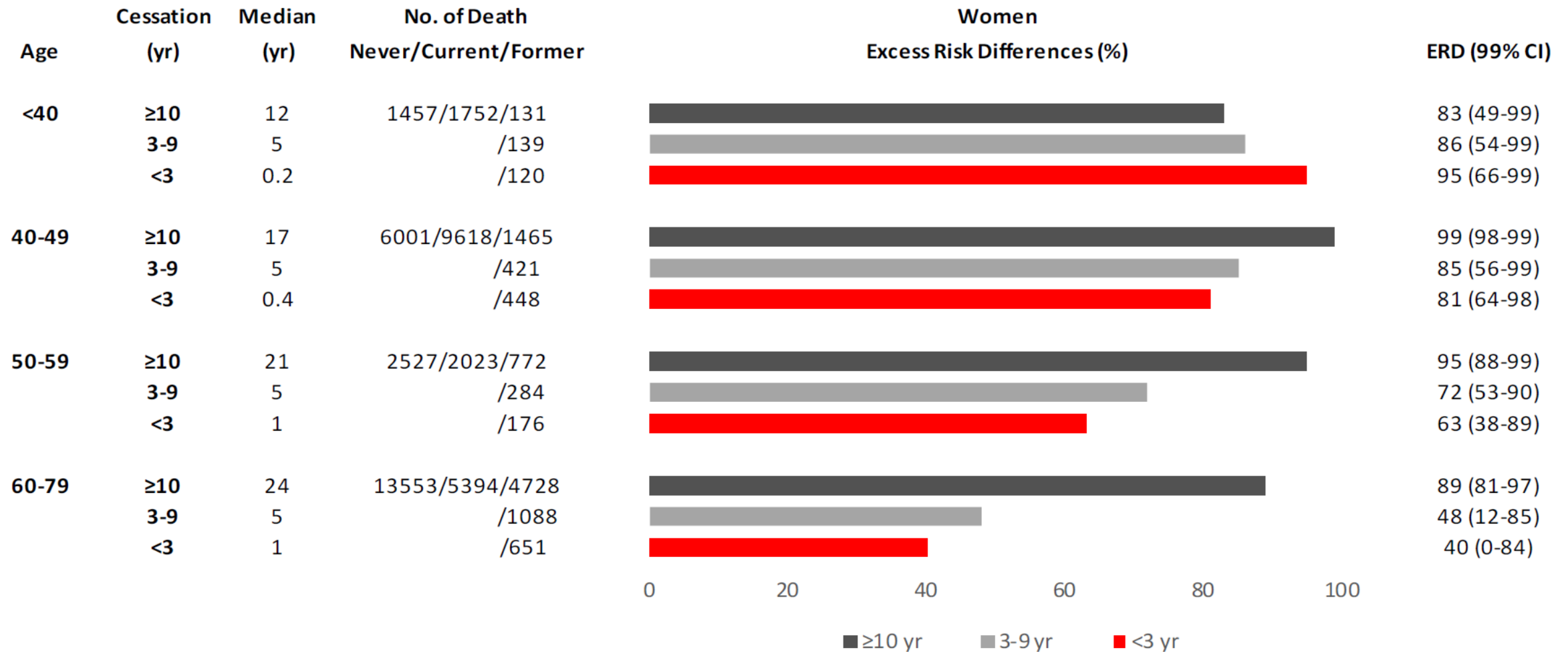


> 80% excess risk reduction for former versus current smokers (30% vs. ~170%)

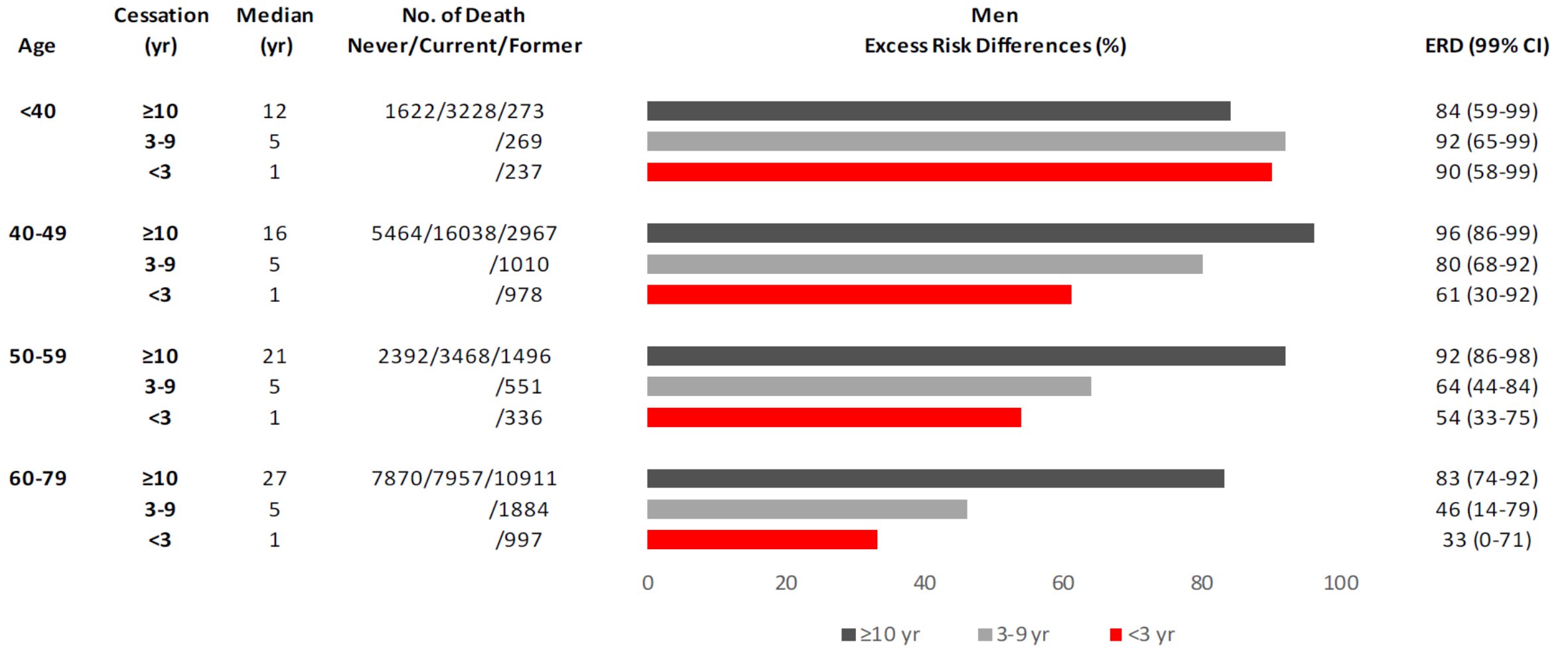


Notes: Area of each square is inversely proportional to the variance of the log of the hazard ratio.

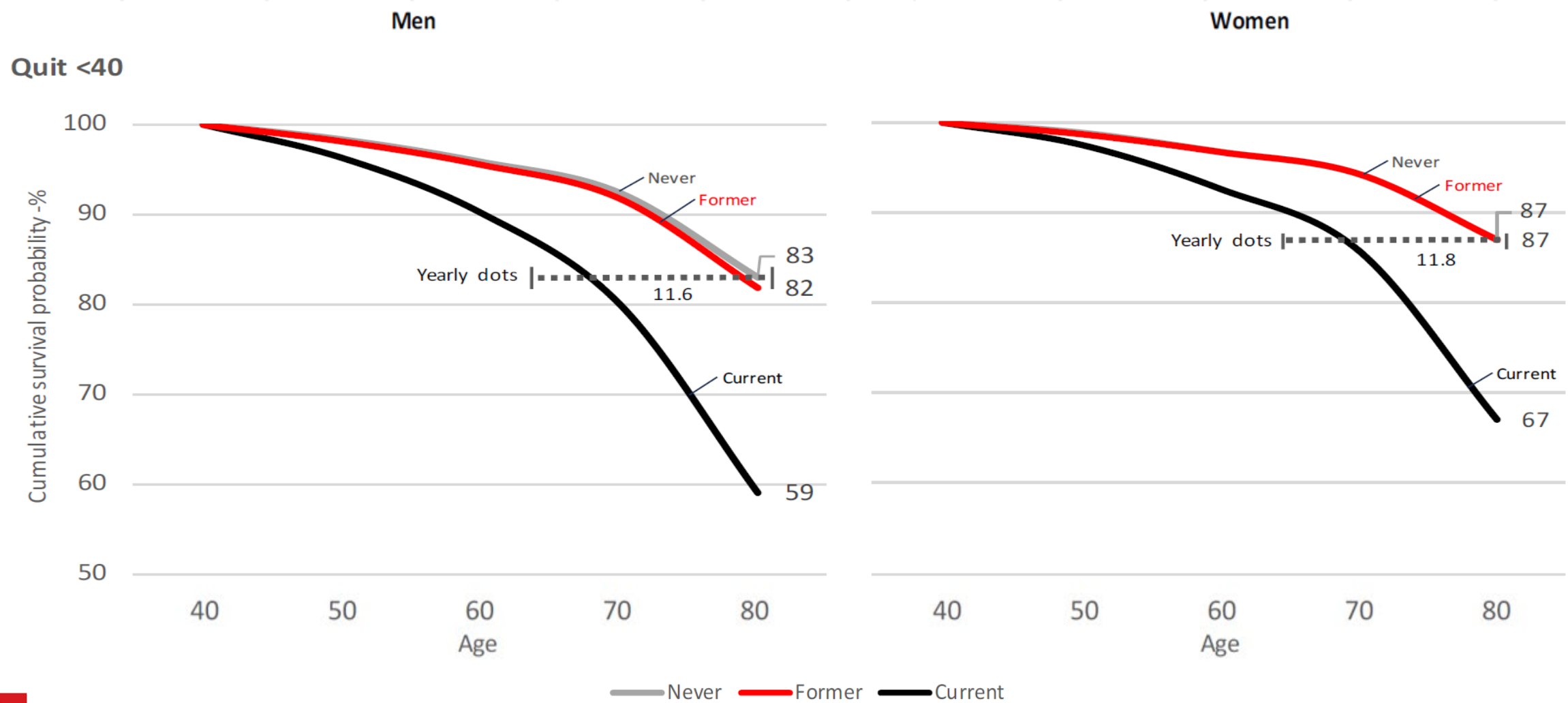
Excess Risk Differences (ERD) for cessation 10+ years, 3-9 years and <3 years compared with never smokers for overall mortality by age group: Women



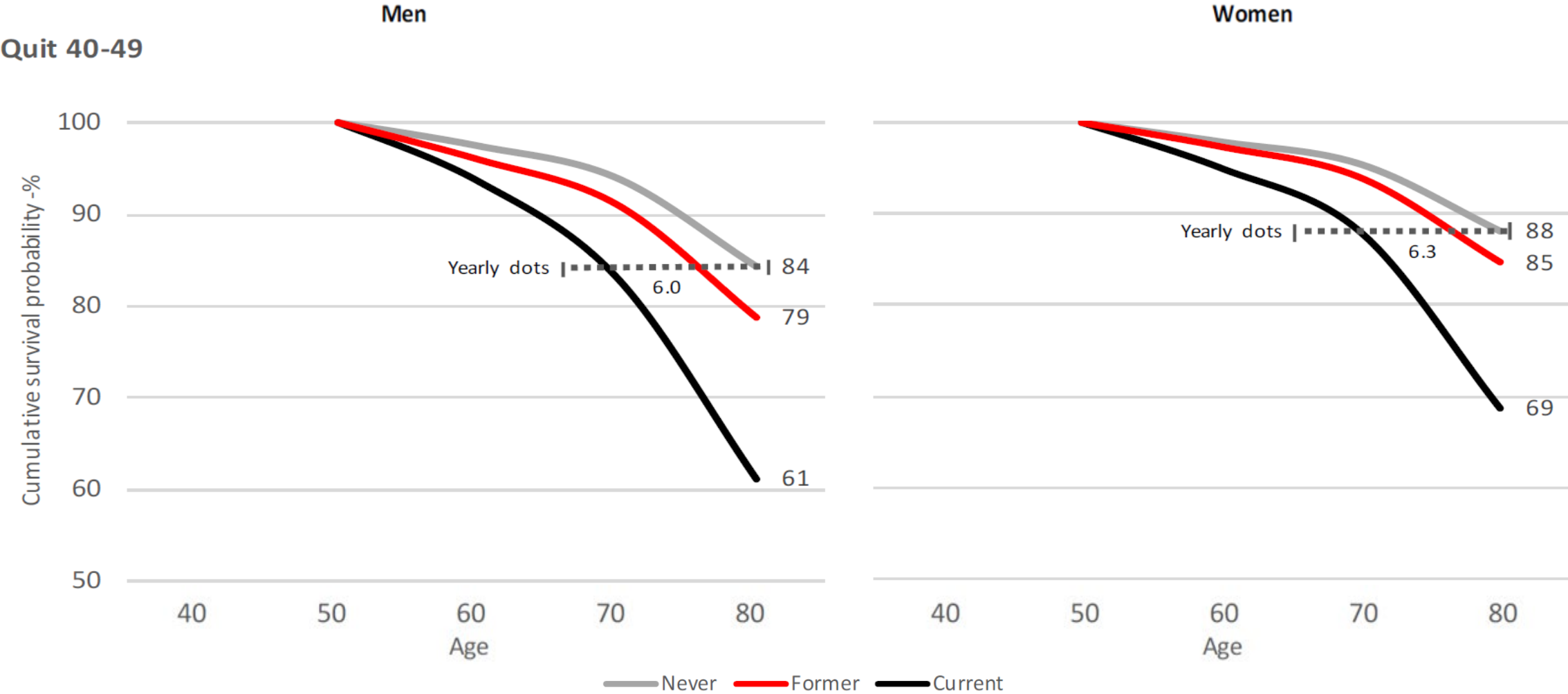
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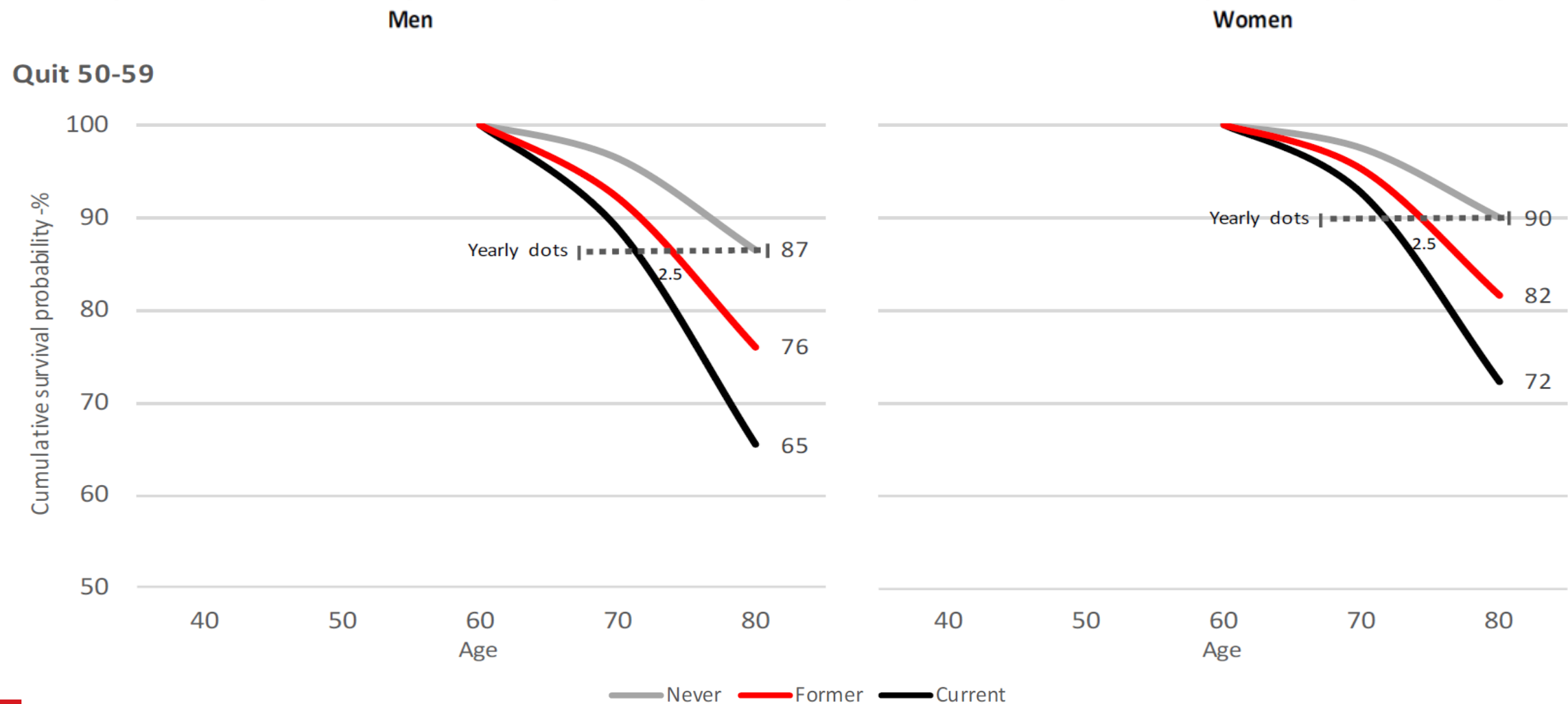
Survival from 40 to 79 years of age by quitting at various ages compared with never or current smokers for all causes for men and women: Quit <40



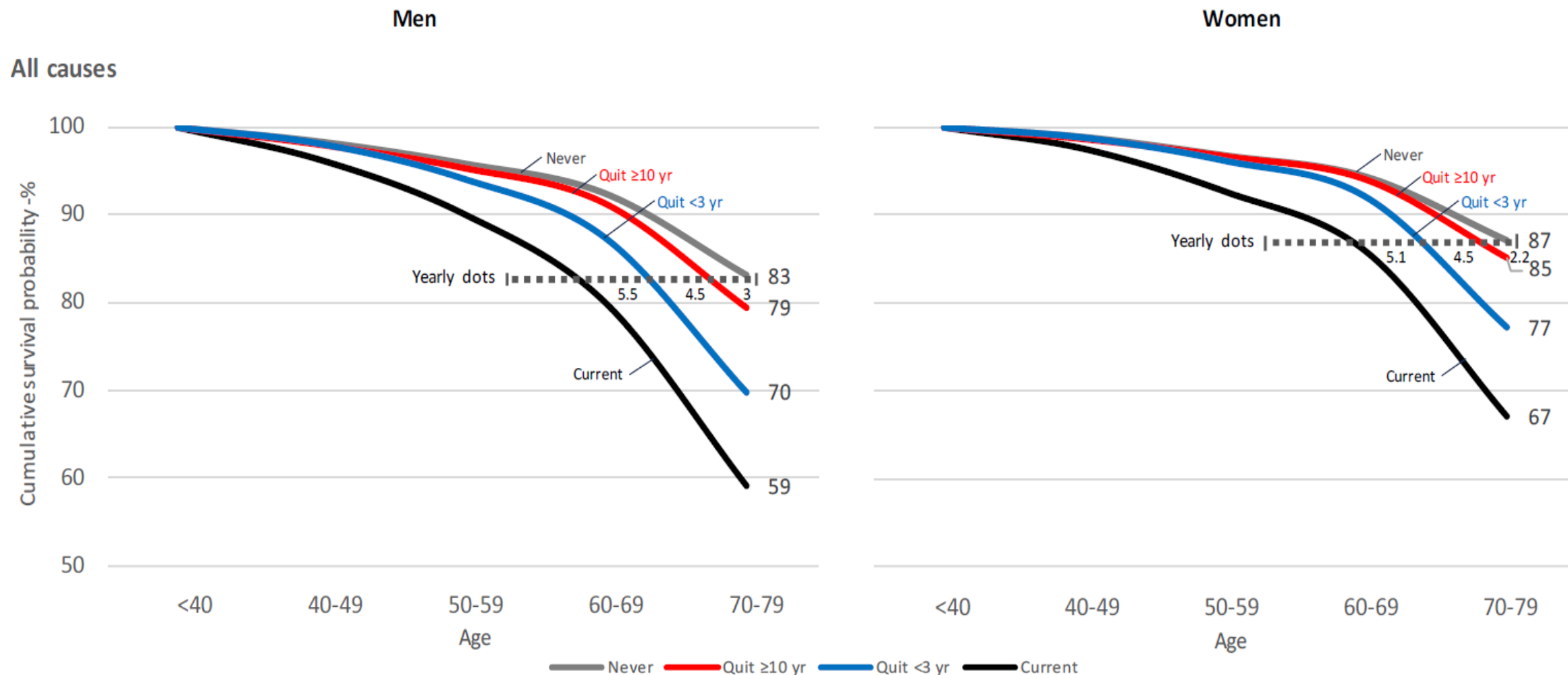
Survival from 40 to 79 years of age by quitting at various ages compared with never or current smokers for all causes for men and women: Quit 40-49



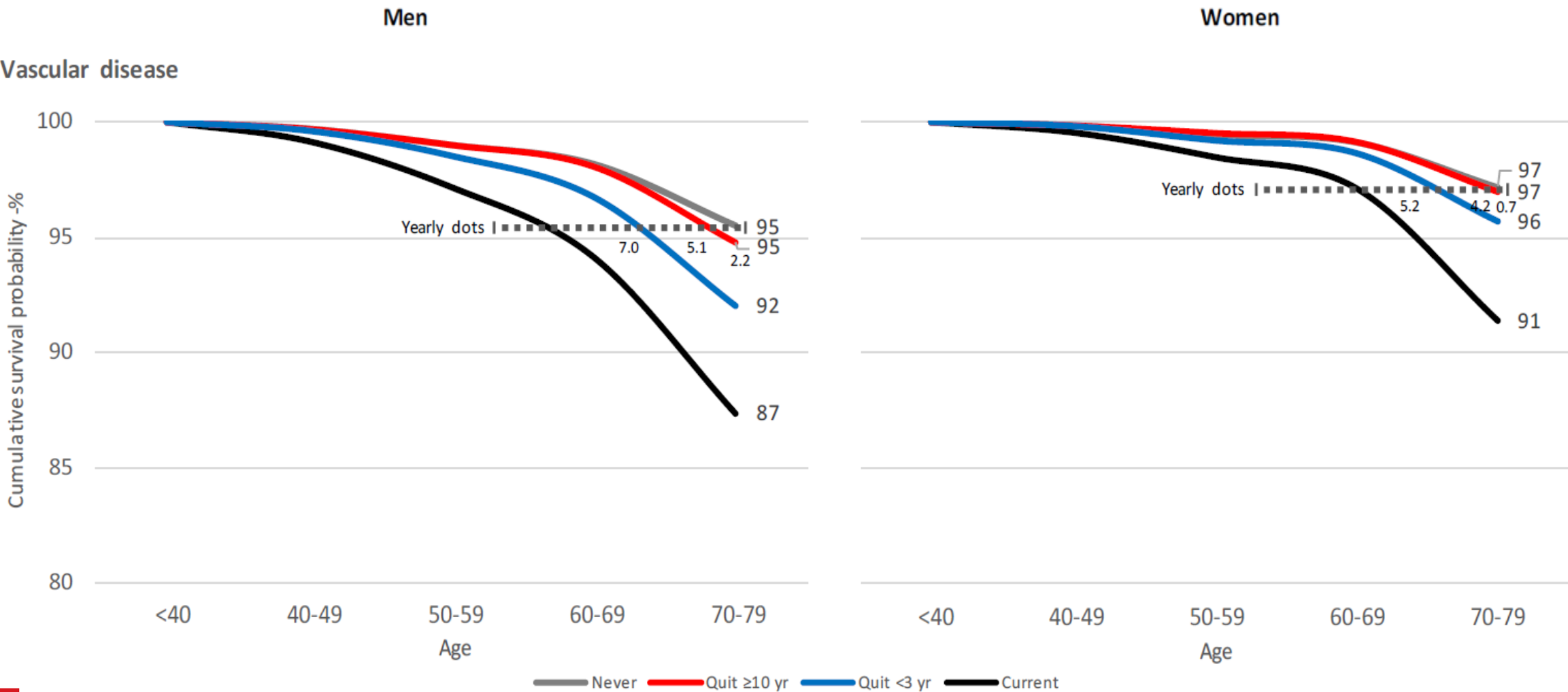
Survival from 40 to 79 years of age by quitting at various ages compared with never or current smokers for all causes for men and women: Quit 50-59



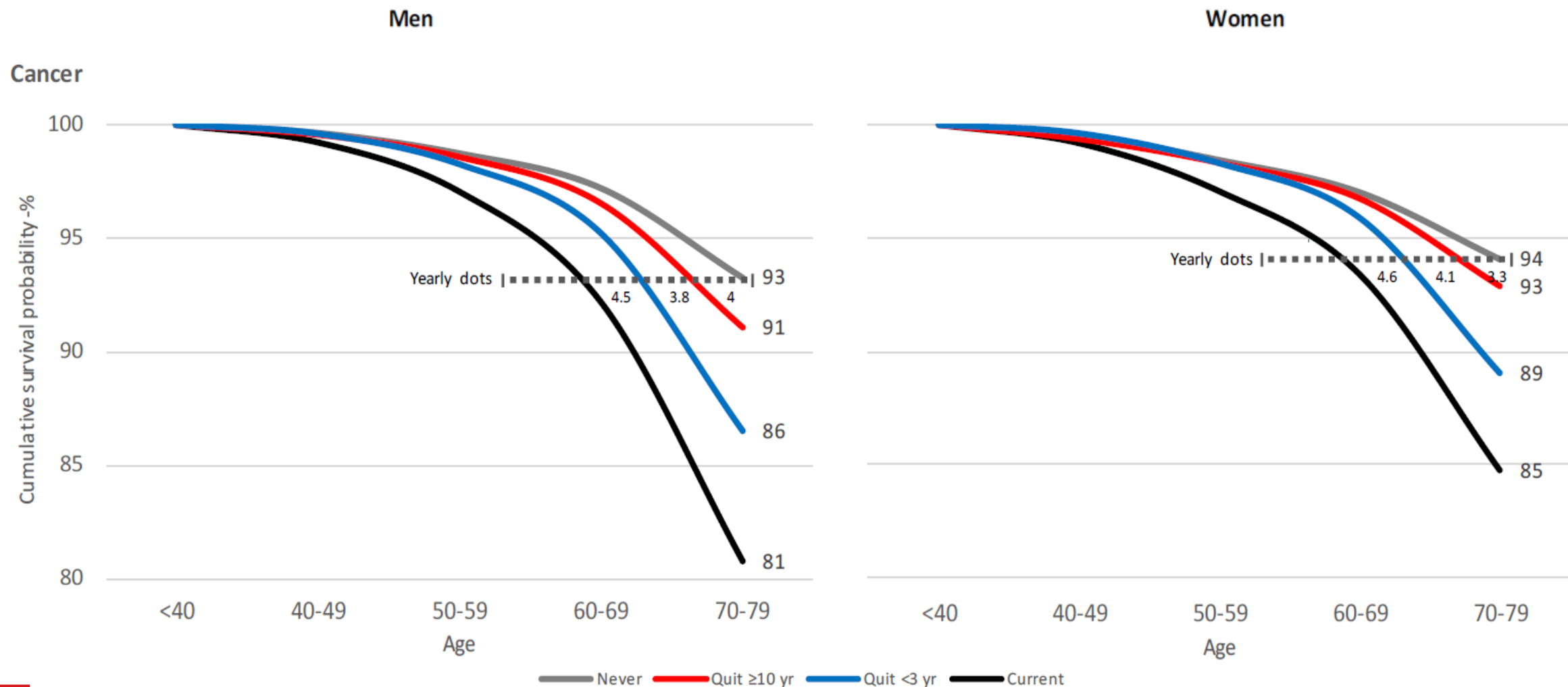
Survival from ages 40 to 79 years of age by smoking status (never, cessation 10+ years or <3 years, and current) by sex: All causes mortality



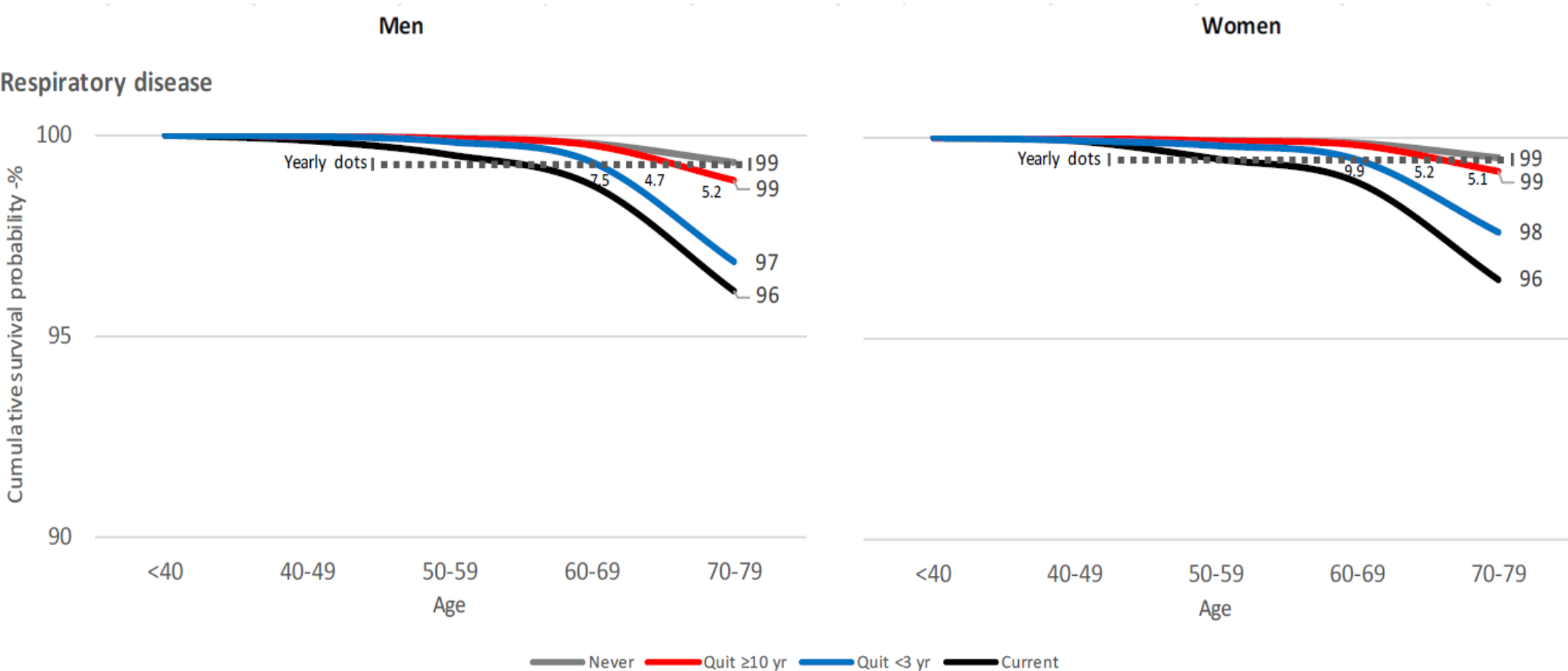
Survival from ages 40 to 79 years of age by smoking status (never, cessation 10+ years or <3 years, and current) by sex: Vascular disease mortality



Survival from ages 40 to 79 years of age by smoking status (never, cessation 10+ years or <3 years, and current) by sex: Cancer mortality



Survival from ages 40 to 79 years of age by smoking status (never, cessation 10+ years or <3 years, and current) by sex: Respiratory disease mortality



Years of life expectancy gained between 40-79 years in relation to duration of quitting smoking by sex and cause of death

| Cause of death | Former smokers vs. Current smokers by duration of quitting, years | | | | Never smokers vs. Current smokers, years | |
|----------------|--|------|-------|------|---|-------|
| | Men | | Women | | Men | Women |
| | <3 | ≥ 10 | <3 | ≥ 10 | | |
| All causes | 6 | 10 | 5 | 10 | 13 | 12 |
| Vascular | 7 | 12 | 5 | 9 | 14 | 10 |
| Cancer | 5 | 8 | 5 | 9 | 12 | 12 |
| Respiratory | 8 | 12 | 10 | 15 | 18 | 20 |

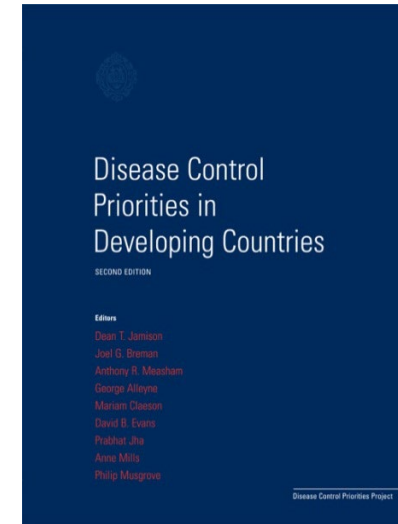
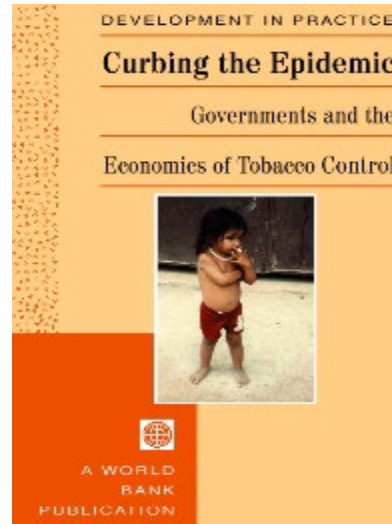
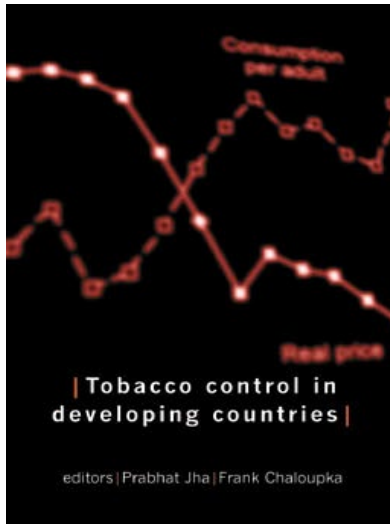
Implications

- Quitting smoking at any age, but particularly <40 years avoids nearly all the continued hazards of smoking
- Much of the large long-term benefits of quitting arise quickly, within 3 years
- Results inform the many smokers who think “its too late to quit”: 60 million smokers in UK, US, Norway and Canada
- Results inform cessation among 1 billion smokers worldwide
- Efforts to accelerate cessation, especially via higher taxes needed worldwide

Conclusions

- **Current smokers have significantly higher death risks compared with never smokers (2.8-fold higher for women, 2.7-fold higher for men)**
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