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EDITOR'S NOTE

Snack (Healthily) Before Shopping

I think all diet guides include the advice to “never go grocery shopping when you are hungry”—and when I had young children, I added “and never with young children”—because either of these factors seem to lead to less wise food choices. Tal and Wansink offer scientific support for this common sense advice in their study of grocery store purchases after short-term fasts.

Rita F. Redberg, MD, MSc

RESEARCH LETTERS

Time Trends of Mortality From Colorectal Cancer in the United States: A Birth-Cohort Analysis

The occurrence of colorectal cancer in the United States is decreasing.¹ We sought to determine whether the decrease began prior to increased colorectal cancer screening.

Methods. Data on US colorectal cancer mortality from 1931 through 2007 were obtained from the Centers for Disease Control and Prevention. Age-specific death rates from rectum and colon cancer per 100 000 living population were calculated for consecutive 10-year periods and 10-year age groups. For instance, the total number of deaths from 1980 until 1989 among subjects aged 55 to 64 years was divided by the corresponding number of total US population of the same age group and living during the same time period when the deaths occurred. The age-specific death rates were plotted against the period of death as period-age contours and against the period of birth as cohort-age contours. An age-standardized cohort mortality ratio (SCMR) was used as a summary statistic of the overall mortality associated with each consecutive birth cohort.² The SCMR was calculated similarly to the standardized mortality ratio (SMR) as the ratio of observed over expected number of deaths in each birth cohort. The individual SCMR value indicates to what extent the SCMR associated with an individual birth cohort lies above or falls below the overall average ratio of 100%.

Results. The period-age contours of rectum and colon cancer show a concurrent rise and fall among old and young age groups, respectively (graphs not shown). In general, such divergent patterns among period-age contours of consecutive age groups are highly suggestive of an underlying birth-cohort phenomenon.³ To delineate such a cohort phenomenon, the **Figure** shows age-specific death rates of rectum cancer (upper panels) and colon cancer (lower panels) replotted against the period of birth as cohort-age contours. In both cancer types, the individual cohort-age contours align in patterns that resemble hyperbolas with an initial rise and subsequent decline associated with consecutive periods of birth. The oldest age groups participated in the initial rise and parts of the subsequent decline. The younger age groups contributed mostly to the recent decline. The location of the peak associated with the highest mortality from rectum or colon cancer appeared to occur before the turn of the century (1900s). Overall, the alignment of all the individual cohort-age contours to form a single overarching pattern suggests that risk of death from colon cancer was strongly associated with the period of birth.

The 2 panels on the right of the Figure graphically summarize the individual cohort-age contours from the 4 panels on the left as time trends of the corresponding age-standardized cohort mortality ratios. Every point of the SCMR curves represents an approximation of the average death rate among individuals belonging to different age groups but being born during the same time period. In appreciating the SCMR curves, one should focus more on their temporal behavior and peaks location than on the actual heights reached by the individual curves. As evidenced by the SCMR curves, mortality from rectum and colon cancer increased among consecutive generations born in the 19th century and then declined in all subsequent generations during the 20th century. The rise and fall were statistically significant in all 4 subgroups of white and nonwhite persons with rectum and colon cancer.

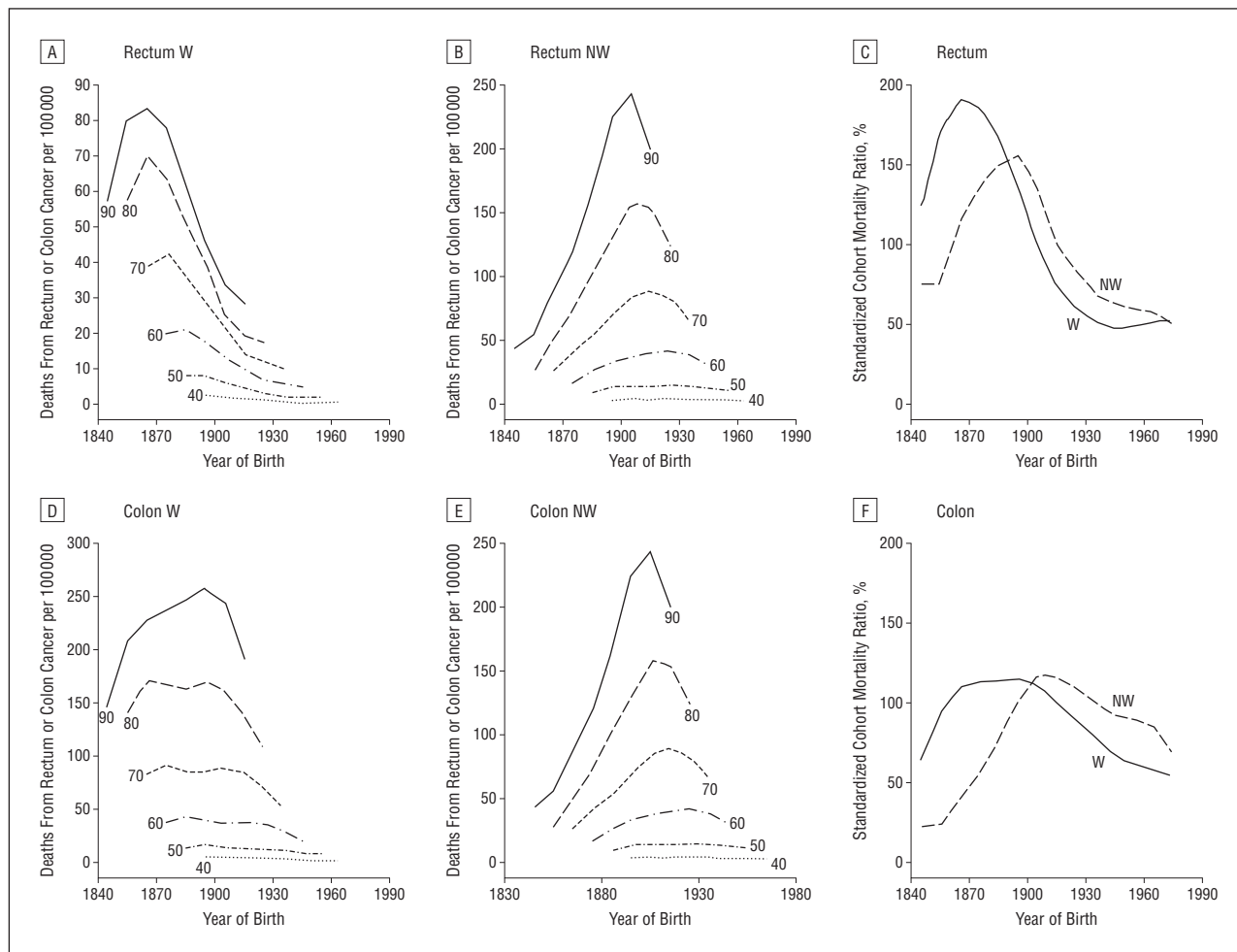


Figure. Age-specific death rates of rectum cancer and colon cancer plotted against the period of birth as cohort-age contours. W Indicates white subjects; NW, nonwhite subjects. A, B, D, and E, Age-specific death rates of rectum and colon cancer plotted as cohort-age contours; the curve of each 10-year age group is labeled by the number representing its central year, for instance, 80 indicating the age group 75 to 84 years. C and F, Standardized cohort-mortality ratios of rectum and colon cancer plotted against the year of birth and stratified by W and NW subjects.

Discussion. Current screening efforts against colorectal cancer were introduced in time such that subjects born around the mid 20th century are the first to benefit from such screening. Our birth-cohort analysis clearly demonstrates that mortality from colorectal cancer already started to decline among subjects born 50 or more years earlier. Cohort effects are generally caused by risk exposure during early childhood that influences subsequent disease behavior throughout life. The acquisition of *Helicobacter pylori* infection during early childhood with the ensuing risk for future development of peptic ulcer or gastric cancer represents a typical example for a cohort effect in digestive diseases.² Infection with *H pylori* is also a known risk factor for the development of colonic neoplasms.⁴⁻⁶ The consistency of the positive associations between *H pylori* and colorectal neoplasms, as evidenced by multiple case-control studies, and the similarity in their birth-cohort patterns both suggest that exposure to *H pylori* may have influenced the long-term time trends of colorectal cancer in the United States.

The present epidemiologic analysis reveals that the time trends of mortality of colorectal cancer in the United States have been shaped by an underlying birth-cohort pattern. Americans born around the beginning of 20th cen-

tury were the ones most likely to develop and die from colorectal cancer. The risk of colorectal cancer has continuously dropped in all subsequent generations. Although there is good evidence to show that various screening techniques protect against colorectal cancer, a detailed analysis of the long-term trends of colorectal cancer clearly demonstrates that the decline of colorectal cancer in the United States started long before any of the various screening techniques became widely used.

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Serotonin Reuptake Inhibitor Use, Depression, and Long-Term Outcomes After an Acute Coronary Syndrome: A Prospective Cohort Study

Depression is highly prevalent among patients with coronary heart disease.¹ Selective serotonin reuptake inhibitors (SSRIs) are recommended as first-line antidepressant treatments for this population.^{2,3} Whereas there is a long-standing notion that SSRIs may improve cardiac disease prognosis by inhibiting platelet aggregation, SSRI use may also worsen prognosis by increasing bleeding⁴ or increasing the risk for arrhythmia.⁵

Only a few small randomized clinical trials with a total of 801 patients have assessed the efficacy of SSRIs in patients with a cardiac condition.^{6,7} Although no evidence for harm was detected in 2 meta-analyses, the follow-up periods for adverse cardiac events in these trials did not extend beyond 6 months, and patient samples were highly selected (ie, only patients not already receiving antidepressant therapy in usual care were included, and patients with comorbid conditions were excluded).

In a cohort of patients with acute coronary syndrome (ACS), we evaluated the association of SSRI and non-SSRI second-generation antidepressant use with the occurrence of cardiac events and mortality during a median follow-up period of 40 months.

Methods. Within 1 week of ACS hospitalization, 457 patients completed the Beck Depression Inventory and a diagnostic depression interview (see Davidson et al⁸ for details). Antidepressant medication use at hospital admission and discharge was assessed by means of medical record review and self-reports. Medical covariates including a post-ACS prognostic risk score, medical comorbidities, and left ventricular ejection fraction were also assessed. Major adverse cardiovascular events (MACEs, defined as hospitalization for nonfatal myo-

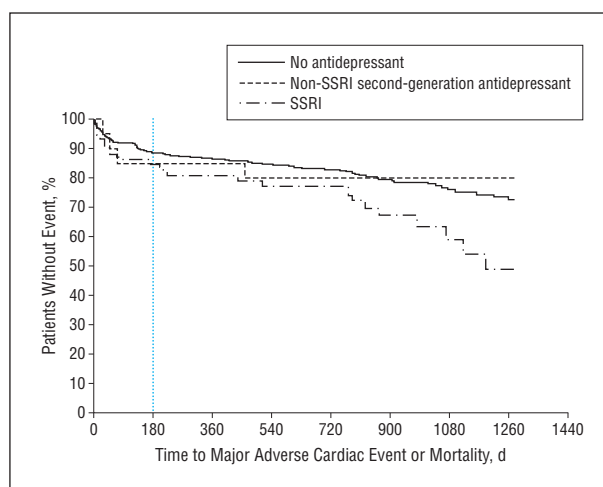


Figure. Event-free survival for combined major adverse cardiac events and mortality in 3 medication groups. Vertical dotted line at 180 days indicates the longest follow-up duration (for adverse cardiac events) in current randomized clinical trials of selective serotonin reuptake inhibitors (SSRIs) in cardiac patients.

cardial infarction, unstable angina, or urgent and/or emergency percutaneous or surgical coronary revascularization) and mortality were surveyed for up to 42 months.

Three groups were compared according to antidepressant class at admission and/or discharge from index hospitalization¹: patients not receiving any antidepressant,² patients receiving SSRIs only, and patients receiving non-SSRI second-generation antidepressants only (see eFigure 1 for specific antidepressants; <http://www.jamainternalmed.com>).³ No patient switched from one to another class during the hospitalization. Because of low numbers (n=21), patients receiving antidepressants in other classes or combinations of antidepressants were excluded. Four additional patients were excluded because they did not complete the depression clinical interview, leaving a sample of 432 patients.

Cox regression analyses were used to estimate differences in time to the first occurrence of either MACE or mortality among the groups (adjusted for age, sex, race, medical covariates [eTable 2], and depression severity or diagnosis of major depressive episode).

Results. Compared with patients not taking any antidepressants (n=354), those receiving antidepressants (n=78) were more likely to be female, to be experiencing a current major depressive episode, and to have increased medical comorbidities and increased depressive symptoms (eTable 1). Compared with patients receiving non-SSRI second-generation antidepressants (n=20), those receiving SSRIs (n=58) were more likely to have a history of major depressive episode (P=.06); otherwise, these 2 groups did not differ.

During a median follow-up period of 1192 days (range, 1-1278 days), 101 patients (23.4%) had a confirmed MACE or died. Among users of SSRIs, users of non-SSRI second-generation antidepressants, and patients not receiving any antidepressant, MACE or mortality rates were 36.2%, 20.0%, and 21.5%, respectively.

The **Figure** shows the Kaplan-Meier survival curves in the 3 medication groups. After controlling for demo-