

Charting aspirin's value as colorectal drug

Despite accumulating evidence that aspirin wards off colon cancer, negative data from a new study suggest that the whole story on aspirin and colorectal cancer has yet to unfold.

In recent years, several research teams have demonstrated that regular aspirin use appears to help guard against colorectal cancer. In 1991, epidemiologists at the American Cancer Society (ACS) in Atlanta reported that people who take aspirin may reduce by half their risk of dying from colon cancer (SN: 12/7/91, p.374). Earlier that same year, a Boston University team showed that regular use of aspirin or aspirin-containing drugs seems to help prevent the development of colon cancer (SN: 3/16/91, p.166).

In addition, researchers postulated a mechanism for aspirin's anticancer action. Laboratory evidence indicates that aspirin and aspirin-like compounds interfere with the synthesis of prostaglandins, hormone-like substances that can fuel the growth of tumors.

Proponents of the drug note that aspirin has already proved its mettle against a range of ills from headaches to heart disease (SN: 7/27/91, p.55). Yet the new study, published in the Aug. 4 *JOURNAL OF THE NATIONAL CANCER INSTITUTE*, hints that for colorectal cancer, aspirin is far from a proven preventive.

Epidemiologist Peter H. Gann, now at the Northwestern University Medical School in Chicago, and his colleagues at the Harvard Medical School in Boston analyzed data from 22,071 male physicians participating in the Physicians' Health Study, a long-term effort designed to test aspirin's value in reducing the risk of cardiovascular disease. Half those volunteers took an adult aspirin tablet and half took a placebo pill every other day. The researchers kept track of the recruits and noted how many cases of colorectal cancer developed during a five-year period.

They discovered 118 cases of invasive colorectal cancer and 253 cases of colorectal polyps, small wart-like growths that can lead to cancer.

The team found no statistically significant reduction in invasive colorectal cancer among physicians taking aspirin. The researchers did find a small decrease in colorectal polyps among the aspirin takers; however, chance could account for this finding, Gann points out.

"The mounting enthusiasm for the potential of aspirin is tempered by these results," Gann says. "I think if there were a very large and fairly immediate impact of aspirin, we would have seen it."

This study represents the first randomized, placebo-controlled investigation of whether aspirin can prevent colorectal cancer, notes epidemiologist E. Robert Greenberg of the Dartmouth Med-

ical School in Hanover, N.H. Previous studies have often been case-control or observational in nature. Such epidemiological studies, in which participants are not randomly assigned to an active treatment group, can be subject to confounding factors that skew the results, he says. Greenberg and his Dartmouth colleague John A. Baron wrote an editorial that appears in the same issue of the journal.

The new study also has a downside. First of all, the researchers tracked the physicians for just five years, a period that may have been too short to show

aspirin's value, says Clark W. Heath Jr., one author of the earlier ACS study on aspirin and colorectal cancer. In addition, the physicians received a low dose of aspirin — 325 milligrams every other day. It may be that aspirin's cancer-fighting abilities show up only at higher doses, says Heath, an epidemiologist with ACS.

All involved believe that additional studies will eventually reveal aspirin's true role in colorectal cancer. Until then, Heath warns against popping aspirin to gain an edge against gastrointestinal cancers. Most people view aspirin as harmless, he says. Yet this drug can cause severe bleeding, damage to the lining of the stomach, and other ill effects, he points out.

—K.A. Fackelmann

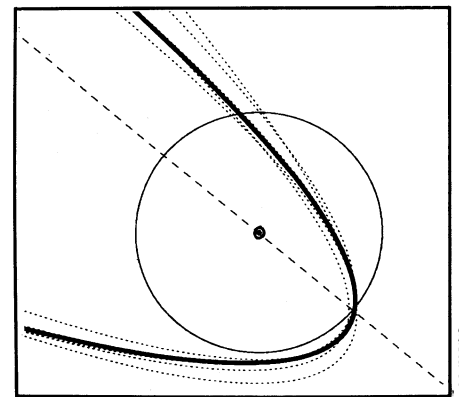
Perseid storm watch: Waiting for the light

On the night of Aug. 11, skywatchers in Asia, Europe, and eastern North America may witness one of the most spectacular displays of celestial fireworks ever recorded. That's because Earth seems poised to plow through a narrow, dense ribbon of the Perseid meteoroids — dusty debris expelled by Comet Swift-Tuttle over the past several centuries.

A Perseid meteor shower graces our skies every August. Usually the streaks of light aren't as intense or frequent as expected this year because normally Earth passes through a broader, less concentrated stream of the meteoroids that lies farther from the orbit of Swift-Tuttle. But last December marked the closest approach of the comet to Earth in its 130-year orbit around the sun (SN: 10/10/92, p.230). And on Aug. 11, Earth may travel through the densest part of the comet's dusty trail. Researchers therefore calculate that a short-lived "storm" of dust particles may enhance this year's Perseid shower, setting the sky ablaze for an hour or two as the meteoroids burn in Earth's atmosphere. The storm may begin around 8:45 EDT.

Meteor expert Bo Gustafson of the University of Florida in Gainesville cautions that such predictions have an inherent degree of uncertainty. Indeed, a team of British astronomers now suggests that although the Perseids may produce a riveting spectacle this year, Earth actually won't encounter the densest meteoroid swath until next August. Nonetheless, the fear that dusty debris could damage one of its spacecraft prompted NASA late last week to make an unprecedented decision. For the first time, the space agency delayed the launch of a craft — in this case the space shuttle *Discovery* — to avoid a meteor storm.

The shuttle, which NASA planned to launch Aug. 4 on a nine-day mission, would have reentered the atmosphere at the height of the predicted meteor storm. NASA has now rescheduled the launch for Aug. 12, the day after the expected



Orbit of Comet Swift-Tuttle (solid arc) shows where it intersects with Earth's orbit (large circle) around the sun. Dashed arcs indicate orbits of meteoroids expelled by the comet on previous passes.

storm.

According to Donald J. Kessler, a senior scientist for orbital debris research at NASA's Johnson Space Center (JSC) in Houston, he and his staff used a computer program to calculate the impact of the meteor storm on critical parts of the shuttle, including its hydraulic lines and the thermal coating of its wings.

They based their calculations on the memorable Leonid meteor storm of Nov. 17, 1966, the most recent such event. Their analysis indicated that there might be twice as much debris in this storm as in the Leonid, an amount the shuttle could nevertheless withstand. NASA considered launching the shuttle on schedule but orienting it so that its tail, which is less vulnerable, would face the storm on reentry. But in the end, the scientists emphasized the uncertainties in their analysis, and NASA took a more cautious tack, says astronomer David Talent, a consultant at JSC.

"If it were my own personal plane, I might have decided to fly it," says Talent. "But this is a national asset. NASA decided it would rather be safe than sorry."

—R. Cowen