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## NEWS BRIEFS from the Aspirin Foundation

### Stronger evidence that aspirin prevents cancer

More large studies have shown that aspirin may reduce the risk of developing and dying from cancer.

In the US, researchers speaking at the American Association for Cancer Research Annual Meeting in Los Angeles said that aspirin use was associated with a 16 percent lower risk of developing any type of cancer and a 13 percent lower risk of dying from cancer.<sup>1</sup> In the UK, a study published in the prestigious medical journal *The Lancet* shows that taking low-dose aspirin reduces the risk of developing bowel cancer by about 70 percent over 10 - 15 years.<sup>2</sup>

These encouraging findings add to the growing body of evidence<sup>3</sup> suggesting that taking regular aspirin may reduce the risk of certain cancers. *What did they show?*

### A lower risk of all cancers

The US study was a new analysis of the Iowa Women's Health Study, a well-established database of 22,507 postmenopausal women who were healthy when they joined the study. It found that 3,487 new cases of cancer and 3,581 deaths from cancer occurred in the 12 years after 1992.

Women who said in 1992 that they took aspirin at least once a week were 16 percent less likely to have developed any type of cancer over the next 12 years, and 13 percent less likely to die from cancer during this period, when compared with women who did not take aspirin at that time. Statistical analysis showed that these findings were not likely to be due to chance.

The benefits were less marked in women who smoked compared with former or never-smokers but the study also confirmed that women taking aspirin had a lower risk of coronary heart disease and of death from any cause. It also suggested that these benefits are unique to aspirin, because they were not found with other nonsteroidal anti-inflammatory drugs (NSAIDs).

The Iowa Women's Health Study is an observational study and therefore cannot prove that aspirin directly reduces the risk of cancer. Furthermore, the assessment of aspirin consumption only during 1992 (rather than over the entire 12-year study period) was a fairly crude measure of aspirin use.

Nevertheless, the reliability of its findings is strengthened because it included a very large group of women who were followed up for a long time and it identified many new cases of cancer.

The Iowa study confirms another recent study from the US. The Nurses' Health Study, which enrolled 79,439 women 24 years ago, found that low-dose aspirin was associated with a 25 percent lower risk of death from any cause; the risk of death from cancer was reduced by 12 percent after 10 or more years of regular aspirin use.<sup>4</sup>

### Reducing the risk of bowel cancer

A new analysis of two trials which began around 1980 (the British Doctors Aspirin Trial and the UK Transient Ischaemic Attack Aspirin trial) shows that aspirin reduces the risk of colorectal cancer.<sup>2</sup> Pooling the two trials gave a total of 7,588 participants who took aspirin at doses of 300, 500 or 1200 mg/day for up to 7

years and were followed up for up to 23 years (and in many cases longer). Overall, taking aspirin for at least 5 years reduced the incidence of colorectal cancer by 37 percent.

This benefit became apparent only after 10 years and the protective effect was strongest between 10 and 14 years, when the incidence of colorectal cancer was about 70 percent lower. There was no apparent effect on other cancers.

The latest study has some drawbacks but, according to a Lancet editorial,<sup>8</sup> it does 'provide convincing evidence that aspirin, at biologically relevant doses, can reduce the incidence of colorectal cancer.'

A new US study adds further support to a protective effect of aspirin by providing strong evidence of a plausible mechanism of action.<sup>9</sup> Aspirin inhibits the enzyme cyclo-oxygenase-2 (COX-2). This study found that regular use of aspirin reduced the risk of colorectal tumours that over-produced COX-2 by 36% but did not alter the risk of tumours that did not produce this enzyme.

#### *What do these studies mean?*

There is now quite a lot of evidence showing that regular use of aspirin is associated with a lower risk of certain cancers<sup>3</sup> but experts are still cautious in interpreting these data - why?

Most importantly, much of the evidence is based on observational studies like the Iowa Women's Health Study. They provide a very important scientific method of monitoring large populations and identifying previously unsuspected links between, for example, the use of medicines and health or illness. But these epidemiological studies are best used to raise questions that can be more rigorously tested in a prospective randomised clinical trial. Paradoxically, two randomised trials have suggested that aspirin does not reduce the risk of cancer.<sup>5-7</sup> Bearing in mind the latest data, it now appears the doses of aspirin they used (50 and 162.5 mg/day) were too low.<sup>8</sup> These contradictions between large studies mean that scientists have been reluctant to commit themselves to recommending the use of aspirin to prevent cancer.

It is also important to remember that regular use of aspirin over many years carries a small risk of side effects on the gastrointestinal system. This risk must be balanced against the potential benefits from a reduced risk of heart disease and (possibly) cancer. This balance is

different for each person, and the decision to take aspirin is therefore best made in consultation with a doctor.

#### References

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