

## Will an Apple a Day Keep Pancreatic Cancer Away?

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Hello. I am David Kerr, Professor of Cancer Medicine at the University of Oxford and past President of the European Society for Medical Oncology. Today I would like to talk about pancreatic cancer and what we might be able to do to reduce the risk of developing it. A study was published recently in *Annals of Oncology*<sup>[1]</sup> by an old friend of mine, Carlo La Vecchia, from the Mario Negri Institute in Milan. It is a very well-conducted case-control study of approximately 1000 individuals, 350 cases of pancreatic cancer and a corresponding 650 case-control patients.

They used a very well-validated food inventory so that they could understand the dietary basis of the individuals involved in the study. Because of the power of our understanding more about the composition of food, we have been able to do a very nice correlation between the risk of developing pancreatic cancer and the dietary composition of flavonoids and glycans, particularly a group of chemicals called proanthocyanidins, important because these are particularly common in apples, pears, and red grapes -- hence the saying "an apple a day keeps the pancreatic cancer away."

The flavonoids and glycans are an interesting class of compounds, and I urge you to look them up. We all use the word "apoptosis," and this is a Greek expression meaning "leaves that fall from trees." In autumn, leaves turn that terminal russet gold because they make chemicals -- flavonoids and glycans -- which are yellow in color, and these induce the leaves to apoptose, or to flutter down and to fall from trees. Flavonoids and glycans have a whole range of fascinating biochemical effects in terms of control of proliferation and control of cell cycle. There is an enormous volume of literature on their biochemistry. This is a very beautiful study from La Vecchia and colleagues suggesting that a diet rich in flavonoids and glycans can reduce the chances of developing pancreatic cancer by more than 25%.

As we get older, we all become epidemiologists and public health doctors. As medical oncologists, we have a duty to start promulgating some of this interesting work. This is a very well-designed study, very well delivered, and in keeping broadly with other evidence out there. The take-home message for us, for our families, and for the population of patients we care for is that an apple a day may indeed keep pancreatic cancer away.

### References

1. Rossi M, Lugo A, Lagioui P, et al. Proanthocyanidins and other flavonoids in relation to pancreatic cancer: a case-control study in Italy. *Ann Oncol*. 2012;23:1488-1493. [Abstract](#)