

## Concurrent Session 3: Immune Function, Cancer, Type 2 Diabetes

### Wholegrains and the prevention of colon cancer

GH McIntosh

*Department of Medicine, Flinders University of SA, Adelaide, South Australia 5000*

**Background** – Wholegrain food consumption has been associated with reduced risk of a number of degenerative diseases, including cancers of the stomach, large bowel, breast and prostate. In our westernised societies cereal grain foods are still a significant component (a staple), but wholegrain use tends to reflect a diet-health conscious minority. The “mediterranean diet” with its good intakes of cereal grain foods along with vegetables and fruits has been shown to contribute to the maintenance of good health and longevity.

**Objective** – to review the evidence regarding wholegrain consumption, dietary fibre and colon cancer and look for possible mechanisms.

**Results** – Grains are the major contributor of dietary fibres to our diet, and can be a marker of wholegrain consumption. Relative risk reductions of 25-50% for colorectal cancers have been observed with wholegrain food consumption, when present in reasonable amounts as part of a balanced diet. Dietary fibre intakes of the order of 25 to 35g/day have been associated with this protective effect. A halving of colon cancer incidence with high consumption of wholegrains and/or dietary fibre has recently been reported recently from cohort studies in Sweden, Europe and Japan.

The removal of significant sources of dietary fibre, along with some associated nutrients and phytochemicals, has created highly digestible energy sources, and exposed the population to hyperglycaemic influences and insulin resistance/metabolic syndrome, increasing risk of several degenerative diseases. Technological developments with refining of flours did not help; such refined cereal foods are now part of the problem. Our knowledge of what dietary fibres and phytochemicals, major and minor nutrients are capable of contributing to disease prevention is progressing. Also some factors may be released during food preparative (fermenting) procedures, or during colonic digestion via microbes involved in fermentation. There are produced potentially beneficial nutrients (vit Bs), benzoquinones and antiinflammatory factors.

**Conclusion** – There is good evidence for wholegrain foods offering protection against colon cancer. Individual and interactive influences of components need better understanding, but evidence to date suggests some significant influences are operating to benefit health.