



Dear Dr. Hoo,

I read in your previous article, something to do with ‘xenohormesis’. Can you elaborate on this?

If you recall, Xenohormesis is derived from the root word “xeno” (foreign) and “hormesis” (relating to control). Essentially, xenohormesis pertains to how certain types of food and substances within them (both natural and synthetic) or environmental pollutants, can have positive or negative influences on virtually every cell, tissue and organ in the body with resultant health implications.

The previous article discussed the possible role of xenohormesis in the development of cancer, and how active compounds such as indole-3-carbinol (I3C) found in cruciferous vegetables were protective against some forms of cancer (eg. lung, colon, breast and bladder) as published by the *British Journal of Cancer*, Vol. 94, pp.407-426.

In fact, compounds such as I3C appear to confer its benefits not only to cancer prevention but possibly to the prevention of cardiovascular disease. Researchers at the University of Hawaii found that I3C was able to reduce the secretion of apolipoprotein B-100 (apoB) by 56%. This finding is significant as ApoB is the main constituent of LDL cholesterol (the “bad” cholesterol) and has been linked to plaque formation in blood vessels in higher concentrations.

Furthermore, a meta-analysis which reviewed the cardiovascular benefits of vegetables, published in a well respected journal *The Lancet* (Vol. 367, pp 320-326) reported that eating five or more servings of fruit and vegetables per day could reduce the risk of stroke by 26%.

With the above in mind, it is essential that we remember that xenohormesis applies to both beneficial and detrimental factors in our environment. Indeed, the food we eat, the air we breathe, the quality of water we drink all play a role in the expression of our genes which over the long term may have either a positive or negative health outcome.

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