

The impact of food on genes

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The paper "The Impact of Food on Genes" is an excellent example of an essay on medical science. Hirsch & Evans' study takes a broad approach to make a good attempt to briefly explain the essence and importance of one of the newest and possibly most promising directions in genetic studies – nutrigenomics. Particularly, they focus on the relationships between nutrition and genetic responses trying to predict how such subtle changes can affect the health of human being. Despite the availability of several animal studies that explore such relationships, lack of credible research in the field is apparent. The authors reasonably claim that a full understanding of the relationship between nutritional factors and gene expression in humans is not possible to achieve via animal models. The situation does seem strange given the huge amount of human cell data collected up to date, coupled with substantial data generated by animal studies. Probably, the methods available these days to explore the problem make such studies to time and money consuming to carry them out on regular basis. Still, some scientists, such as van Breda and colleagues try to close this gap. The study conducted by van Breda et al. is a quality attempt to explain how vegetables reduce the risk of cancer on the genetic level. Although the correlation between increased consumption of vegetables and reduced risk of colorectal cancer has been verified by past research, knowledge of specific genes and genetic pathways involved in this correlation is highly essential in order to understand etiology of this dangerous disease and identify effective treatment methods. An interesting combination of research methods (mixed sampling, biopsy, and advanced statistical analyses) employed by van Breda and colleagues enabled them identify a group of genes that can be "... mechanistically linked to cellular processes that explain either prevention of

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colorectal cancer risk by high vegetable intake or increased colorectal cancer risk by low vegetable intake” (van Breda et al. 2004, 2207). The study also identifies several interesting directions for further research namely, which of the revealed genes are affected by vegetables at each specific stage of the disease.