Cancer Prevention Research

Table of Contents

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Table of Contents

ABOUT THE COVER

Diets high in glycemic load (GL) are associated with increased risk for several cancers. In a randomized crossover-controlled feeding trial (see the study beginning on page 567), Garrison and colleagues measured plasma proteins collected at baseline and end of 28-day consumption of the controlled high and low GL diets, using microarrays populated with 3504 antibodies. The authors demonstrate measurable proteomic differences caused by diets in plasma of healthy individuals, and those differences are more robustly detected after stratifying participants by high and low fat mass as determined by dual X-ray absorptiometry. Pathway analysis shows that certain cancer-related pathways (DNA repair, DNA replication, and cell cycle) altered by diet are overrepresented in participants with high fat mass, whereas pathways involved in post-translational protein modification are overrepresented in participants regardless of their fat mass. The results suggest that physiological impact by consumption of diets in differing GL is variable depending on an individual's adiposity. More studies are warranted to test dietary recommendations related to cancer prevention tailored with the additional consideration of fat mass. The cover image depicts a food wheel with different levels of glycemic index, on the background of an image of microarrays, the technology used in this study.

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12 (9)

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