Western refined dietary pattern is associated with risk of Inflammatory Bowel Disease

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Background: Nutrients and foods may have interactions through non-nutrient components that can not be examined by single nutrient or food group analyses. Dietary patterning may examine this aspect of diet and is particularly useful when there is no consistent dietary aetiology, as in Inflammatory Bowel Disease (IBD) and its two main diseases Crohn's disease (CD) and Ulcerative Colitis (UC). In an energy adjusted nutrient analysis which controlled for modifiers/confounders, saturated and total fat intake were the only significant predictors of IBD (1). These and a protective effect of starch intake were also significant in UC, whilst only Vitamin A was a significant predictor for CD.

Objective: To determine the pre-symptomatic dietary patterns which may be involved in the aetiology of IBD and in the CD and UC subgroups of this case control study.

Design: Case control study of newly diagnosed cases with IBD matched (within 5 years of age, gender and geographic location) to randomly selected (electoral roll) multiple controls. Cases were recruited within six months of diagnosis from NSW and ACT by referral from gastroenterologists. Diet was assessed within two years of onset of symptoms by FFQ (including vitamin supplements). Food groups were formed and dietary patterns determined using Principal Components Analysis (PCA) and analysed by conditional logistic regression after controlling for confounders*.

Outcomes: Data from 107 case and 308 matched controls were used in the analyses. The 'western refined' dietary pattern in IBD correlated highly with cakes & biscuits, takeaways, sugar & confectionery, soft drinks & juices and margarines & oils. Two separate dietary patterns were associated with CD – 'teetotal, sugar & cakes' (correlated highly with sugar & confectionery; cakes & biscuits; soy products, bread & grains, and lack of alcohol) and 'fast foods' (Trend P value NS) which correlated highly with takeaways, soft drinks and lack of fruit. No significant dietary patterns were found for UC.

Risk of IBD – 107 cases matched to 308 controls, Odds ratio (OR) for quartiles of dietary score

Dietary Pattern	Lowest Quartile	2nd Quartile	3rd Quartile	Highest Quartile	95% CI lowest versus highest Quartile	Trend P value
Western refined diet*	1	1.13	1.81	3.55	1.72– 7.33	0.0002

*controlled for oral contraceptive use, breast fed less than 6 weeks & past smoking.

Risk of CD – 65 cases matched to 186 controls, Odds ratio (OR) for tertiles of dietary score

Dietary Pattern	Lowest Tertile	Middle Tertile	Highest Tertile	95% CI lowest versus highest Tertile	Trend P value
Fast foods*	1	1.29	2.51	1.06–5.94	0.10
Teetotal, sugar & cakes*	1	1.24	2.88	1.31–6.37	0.006

*controlled for oral contraceptive use, breast fed less than 6 weeks & past smoking.

Conclusions: A 'western refined' diet is related to the subsequent appearance of IBD and 'teetotal sugar and cakes' and 'fast foods' with the appearance of CD in genetically susceptible individuals. This data suggests that a diet avoiding these food patterns, such as a Mediterranean eating style may reduce the incidence of IBD in genetically susceptible people.

Reference
1.   Bencke AJ, Roberts DCK, Batey R. 'Saturated fat linked to risk of inflammatory Bowel Disease' (Conference Abstract). APJCN 2001; 10: S87.