

Results of a study into the effects of diet on runners' performance during periods of high levels of training.

The above test was conducted at the University of Birmingham's Sports Science department. It was funded by the Ministry of Defence in order to understand the effects of diet on levels of performance, stress, fatigue and vigour. I took part in this and several other tests, all of which successfully combined exhaustion with trauma, nausea, and the odd black-out. The time trials were all conducted in a laboratory, usually requiring subjects to breath into a tube in order to measure oxygen and CO2 levels - cannulas were attached to the runners' arms in order to extract and test blood. Any urine produced during tests was taken away and frozen in liquid oxygen. So nothing unusual there then...

DIET

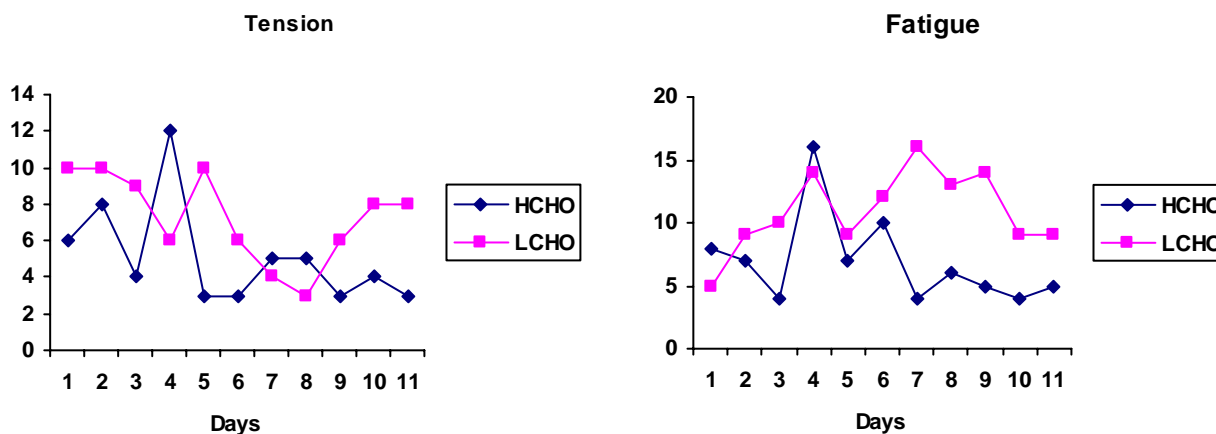
CHO = carbohydrate	energy intake	grams CHO	energy as % CHO	energy as % fat	energy as % protein
High CHO	3835	625	65	21	13
Low CHO	3835	388	41	44	16

Each period lasted for 11 days, with 5 days recovery. The test involved daily training routines, often at race pace; all food was packaged and labelled to the nearest calorie. During the low carbohydrate (CHO) diet, meals usually left participants feeling bloated, and were often difficult to finish; the high CHO diet left us feeling constantly hungry, although the calorie count was the same – a phenomenon marketed by Atkins, despite his apparent ignorance of how it worked!

PERFORMANCE

	High CHO	Average HR	Low CHO	Average HR
Time trial 1	29.59	180	29.56	180
Time trial 2	29.14	171	29.35	175
Time trial 3	30.35	159	30.32	164
Time trial 4	29.38	163	30.53	164
Time trial 5	62.50	166	65.00	169
Time trial 6	64.15	163	64.57	166
Time trial 7	65.12	157	67.09	160
Time trial 8	64.08	161	66.03	164

The high CHO performances show faster times as well as lower heart rates. The graphs below illustrate the beneficial effects of high levels of CHO on tension and fatigue. There are similar results for levels of vigour and recovery.



The conclusion is simple, but we all need reminding that high levels of complex CHOs, combined with a low fat intake will not only improve performance, but will aid that elusive feeling of well-being, which is, of course, the new black.

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