

A possible criticism of carbohydrate loading was the fact that it increased body weight, which in its turn was detrimental to the athlete. It was shown that the increase was partly offset by the reduction in weight that resulted from the earlier period on a high protein-fat diet.

Need for drinks whilst running a marathon

A questionnaire was issued to competitors in the AAA Marathon Championship in 1975, which indicates that some increase in body water may not be without its advantages, (Newton, 1980).

Of the 149 competitors who finished the race, 109 (73%) returned forms. They were divided firstly into groups depending on whether they finished comfortably, in slight distress, in acute distress, or retired. The sub-groups were again divided into those who were on the Saltin (glycogen loading) diet and those who were not. The numbers in each group and subgroup are shown in Table V.

TABLE V
Numbers completing race and on Saltin diet

| | Total | On Saltin diet | Not on Saltin diet |
|-----------------------------|-------|----------------|--------------------|
| Finished comfortably | 54 | 26 | 28 |
| Finished in slight distress | 47 | 22 | 25 |
| Finished in acute distress | 8 | 3 | 5 |
| Retired | 14 | 5 | 9 |
| Total: | 123 | 56 | 67 |

It is interesting that so many competitors had in fact adopted the carbohydrate loading diet. Further analysis showed the numbers who felt the need of a drink during the race and those who did not (Table VI).

TABLE VI
Numbers of drinkers during race

| | On Saltin diet | Not on Saltin diet |
|-----------------------------|----------------|--------------------|
| Percentage requiring drinks | 19.3 | 80.7 |

The proportion of runners completing the race without taking extra fluids was greater among those who used the diet than in those who did not. It also appeared that runners who used the Saltin diet were less dehydrated, since they resumed the production of a positive fluid balance earlier than the other group, indicated by the numbers of competitors who passed urine within 1 or 2 h (Table VII).

TABLE VII
Numbers passing urine

| | On Saltin diet % | Not on Saltin diet % |
|------------------------------|------------------|----------------------|
| Passing urine within 1 hour | 29 | 21 |
| Passing urine within 2 hours | 16 | 12 |

From these observations it appears that a small increase in weight following glycogen loading may not be wholly a disadvantage.

REFERENCES

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DISCUSSION

Dr. Press: Dr. Sharman implied that although there was evidence that a low-carbohydrate diet was necessary after the depletion of glycogen stores before the change to a high-carbohydrate diet, this might no longer be the case. Is there any evidence that this period of a high-protein, high-fat diet is unnecessary?

Dr. Sharman: Nowadays, it is accepted that the same beneficial results can be obtained without the protein diet. If this is the case, the question of adverse effects from a high-protein diet does not arise.