

Metabolic Effect of an Indigenous Compound on Sportsmen

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INTRODUCTION

The liver plays an important role in the metabolism of various foodstuffs. Anabolic and catabolic processes contribute to the increase or decrease of body weight. These processes, in turn, depend upon factors like caloric intake, digestion, absorption, utilisation and endocrine functioning.

The drug 'Liv.52' (The Himalaya Drug Co.) has been studied in the past in relation to abnormal subjects and animals and no attempt had been made to see its effect on normal, healthy individuals who involve themselves in regular physical exercise for long periods. The strain of physical exercise causes decrease in weight, especially so, when the caloric intake is inadequate. To individuals in rigorous training, this is one of the main psychological handicaps. After reviewing the literature on 'Liv.52' it was thought that 'Liv.52' tablets may produce a beneficial effect on certain metabolic parameters of the body among athletes.

REVIEW OF LITERATURE

Sheth *et al.*, (1963), mentioned that 'Liv.52' tablets caused a significant improvement in appetite and general condition, with a quick gain in weight in patients suffering from various conditions. Athavale (1966) studied the effect of 'Liv.52' tablets on food intake of patients and concluded that there was marked improvement in appetite, general feeling of well-being, regular bowel movement and well-formed stools. These findings were further confirmed by Damle and Deshpande (1966).

MATERIAL AND METHODS

This study was conducted on 12 top Indian Athletes undergoing training at the National Institute of Sports, Patiala. All the athletes were doing mild calisthenics and warming up exercises for one and half hours and intensive physical exercises for two and a half hours daily. All the athletes were living in identical conditions and were on the same diet.

The subjects were divided into two groups, Control and Experimental. The control group, which consisted of four subjects, was not given 'Liv.52' tablets; whereas, the experimental group consisted of eight subjects and was given 'Liv.52' tablets - 2 tablets three times a day before every heavy meal, for three weeks.

The initial states of appetite and bowel movements were ascertained in all the subjects. Height and weight of the individual were recorded under resting and identical conditions. Oxygen consumption, and thereby, the metabolic rate, were measured by McKesson's Metabolar in basal conditions. All these readings were repeated after every seven days and the study was completed in 21 days.

OBSERVATIONS

Weight: From Table 1, it is clear that there was an increase in the weight of six subjects in the experimental group: one subject (S.S.) showed a decline in weight and another (B.S.), no change. Even the subject S.S. showed a slight increase in weight after 15 days of taking the 'Liv.52' tablets. The subject S.S., unfortunately, fell ill during the last week of training and his weight was reduced.

The table also shows that in the control group there was no change in the weight of the individuals during the period of investigation.

Table 1: Shows the weight of the subject in the Experimental and Control groups – before and after taking Liv.52

Sl No.	Name of the subject	Initial wt. in kg.	Weight after 7 days in kg.	Weight after 15 days in kg.	Weight after 21 days in kg.
EXPERIMENTAL GROUP					
1	P.S.	58	58.5	59	59
2	B.S.B.	69	69.5	70	71
3	S.S.	62.5	62.5	63.5	62*
4	Z.S.	57.5	58.5	58.5	60
5	B.S.	58	58	58	58
6	M.S.	67	67	67.5	68
7	S.U.S.	57.5	57.5	59	60
8	K.S.	59.5	59.5	60	60.5
* was ill during physical training.					
CONTROL GROUP					
1	A.S.	59	59	59	59
2	N.P.	58	58	58	58
3	K.S.T.	61.5	61.5	61.5	61
4	J.S.	70	70	70	70

Appetite: There was general improvement in the appetite in all the subjects. Subjects P.S., B.S.B., Z.S. and S.U.S., who previously used to complain of loss of appetite, had marked improvement in form more strenuous exercises and had a feeling of well-being after a period of rest.

Bowel Movements: None of the athletes complained of irregular bowel movements. Their stools were well-formed. This further added to their feeling of well-being.

BMR: From Table 2 – it is clear that there was no appreciable change in the BMR of the experimental group.

Table 2: Shows the Basal Metabolic Rate in Cal/sq. M./Hour during the period of investigation of Experimental and Control Groups

Sl No.	Name of the subject	Initial wt. in kg.	Weight after 7 days in kg.	Weight after 15 days in kg.	Weight after 21 days in kg.
EXPERIMENTAL GROUP					
1	P.S.	48	50	46	46
2	B.S.B.	48	48	46	46
3	S.S.	56	56	54	51.5
4	Z.S.	54.5	50	45	45
5	B.S.	57	57	57	54.5
6	M.S.	37	32.5	32.5	30
7	S.U.S.	52	54.5	54.5	52
8	K.S.	41.8	46	41.8	41.8
CONTROL GROUP					
1	A.S.	36	36	36	33.6
2	N.P.	39	39	39	46
3	K.S.T.	46.5	46.5	46.5	45
4	J.S.	42.5	42.5	42.5	40

DISCUSSION

It was noted on several occasions that strenuous physical exercise for long periods causes staleness and irritability in the athletes. Sometimes, the athletes lost weight beyond normal limits, which worried them further. The result used to be a decline in their performance. At various training camps for preparing athletes for the big international competitions, this staleness was not uncommon. The staleness consisted of loss of weight and appetite and marked increase in the metabolic rates due to higher consumption of oxygen, even during basal conditions.

'Liv.52' tablets in proper doses caused increase in the weight of all the subjects. The main reasons may be attributed to the increase in appetite, improved absorption and utilisation of food and regular bowel movements. These factors helped in giving a feeling of well-being to the individuals. Due to this, the athletes could perform well and were able to undertake strenuous training without any bad effects, e.g., staleness and irritability. The basal metabolic rate remained constant and in a few individuals it was lowered, showing that the drug could help in stabilising the oxygen consumption at rest. Thus, in other words, the tablets were quite helpful in the full recovery of the subjects after previous strenuous exercise.

CONCLUSIONS

From this study the following can be concluded:

1. There was an increase in weight in all the athletes.
2. There was general and significant improvement in the appetite and feeling of well-being.
3. Basal metabolic rate showed very little change, confirming that the oxygen consumption was within normal limits at basal conditions.

REFERENCES

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