ASSESSMENT OF NORMAL WEIGHT IN MALES OF THE AGE GROUP OF 40-60 YEARS WITH RESPECT TO HEIGHT: A NEW FORMULA

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Abstract: In the present work, 3000 male human subjects were studied for their health status and endeavour was made to establish the relation between the height and weight. Male individuals between the age group of 40 to 60 years were studied; their heights were between 140-180 cm. They were grouped as Group I-weight above (Height in cm-100 cm) x kg/cm, Group II-weight between Group I and Group III subjects and Group III-weight below Group I subjects at least by 15%. It was found that Group II subjects were less sufferer from disease like, diabetics, coronary heart diseases, hypertension etc. than Group I subjects, Group III subjects were also similarly less affected by diseases but they are more prone to tiredness to accustomed work than Group II subjects. So it is concluded that the weight of Group II subjects should be considered standard.

Key words: body weight diabetes height hypertension obesity ischaemia expectancy would be increased by four years (13). Uptil now medical scientist cannot contribute a general formula or criterion by which we can evaluate that a person has got normal weight. It is also difficult because of the diversity of the heights and difference in weight due to sex. But a predicted or desired weight is essential to define obesity and low weight in human beings. In general the animals are not becoming obese who are in nature and toil hard to procure food. They take uncooked natural food and may be less prone to obesity.
Obesity is now determined by Body Mass Index or Quetelet Index which is calculated by dividing the body weight in kilogram by height in meters square (14). It is erroneous to measure subcutaneous fat and skin fold etc. to determine or diagnose in obese (15). Similarly it is also not known who are under-weight. Besides clinical low weight also be called undernurished but what should be the actual criteria are ill defined. Now that all these methods are cumbersome and inadequate in accuracy to it is worth trying to formulate a weight formula in respect to height.

METHODS

Male human subjects from different offices in Calcutta were taken between the age group of forty and sixty years. The heights of these subjects were between 140-180 cm.

The weights and heights were taken; cholestrol and blood glucose were measured by the methods described by King and Wooton (16). Besides Blood Pressure and E.C.G. were also recorded. History of tiredness to accustomed work was taken.

The subjects of the present investigation were divided into three groups; total number of subjects were 3000 with one thousand in each group.

Group I: Weight above

\[ \text{Height in cm} - 100 \text{ cm} \times \text{kg} \]

Group II: Weight between group I and group III subjects.

Group III: Weight below group I subjects at least by 15%

RESULTS

Table I shows that of 1000 subjects of group I, the cholestrol level was above 250 mg% in 10.5% subjects while it was below that level in 89.5% persons. But in group II and group III subject cholestrol level above 250 mg% were in 4.5% and 2.3% subjects respectively. The post prandial blood sugar level was above 120 mg% in 12.1% subjects of group I, 5.9% subjects of group II and 6.1% subjects in group III. This result of group I is highly significant (P<0.001) when compared to group II and III. Again Diastolic Blood pressure was above 90 mm of Hg in 10.0% subjects of group I while it

<table>
<thead>
<tr>
<th>Group</th>
<th>Cholesterol Above 250 mg/dl</th>
<th>Blood glucose Above 120 mg/dl</th>
<th>Blood pressure Above 90 mm of Hg</th>
<th>E.C.G. Ischaemia</th>
<th>Feeling of tiredness to accustomed work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group I</td>
<td>10.5%</td>
<td>12.1%</td>
<td>10.0%</td>
<td>8.1%</td>
<td>51%</td>
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<td>(n=1000)</td>
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</tr>
<tr>
<td>Group II</td>
<td>4.5%</td>
<td>5.9%</td>
<td>4.2%</td>
<td>5.2%</td>
<td>11%</td>
</tr>
<tr>
<td>(n=1000)</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Group III</td>
<td>2.3%</td>
<td>6.1%</td>
<td>4.1%</td>
<td>4.7%</td>
<td>28%</td>
</tr>
<tr>
<td>(n=1000)</td>
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</table>
was higher in 4.2% and 4.1% subjects in
group II and group III respectively. This
result of group I is highly significant when
compared to group II and group III
(P<0.001). Ischaemic changes were also
more in group I than in group II & III
subjects. Besides the number of subjects
feeling tiredness in group I, group II and
group III subjects were 51.0%, 11.0% and
28.0% respectively.

DISCUSSION

Obesity is a curse to the affluent society
and it contribute several diseases only
because of the over nutrition or higher
weight (17, 18, 19) but up till no actual
formula is contributed by the scientists
which can easily help stamp an obese. The
term obesity is implied to an excess adipose
tissue but meaning of excess is hard to
define. Barring aesthetic considerations
obesity can best be viewed as any degree of
excess adiposity that imparts a health risk.
But the cut off between obese and normal
can only be approximated (15). The methods
adopted for the measurements of obesity
particularly skinfold or triceps fatfold are
source of several errors (20, 21). Present
work might be a satisfactory alternative to
the present day formulae. From this
investigation it is obvious that in group II
people, the incidence of disease is lower than
group I. The results show that incidence of
high cholesterol level in group I was 10.5%
more; the blood glucose was higher in 12%;
higher blood pressure was 10% and
Ischaemia was 8% higher than those of
group II while these results were slightly
better in group III but these were
statistically insignificant. Moreover, the
group III people were less efficient than
group II as 28% of them felt tired to
accustomed work while the group II subject
only 11% felt tired to accustomed work. So
it is reasonable to surmise that the normal
weight of a person should not exceed as
given below : (Height in cm -100 cm) x kg/
 cm i.e. if a person has the height of 167 cm
his weight should not exceed (167 cm -100
 cm) x kg/cm or 67 kg. Above that the weight,
the person will suffer from obesity and those
who are less in weight by 15% of the above
said formula i.e. (67 x 15/100) kg or below
56.95 kg would be regarded as under-
nurished or under-weight.

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