On improving daily energy expenditure

Office Worker's Dilemma was posted on this page on August 18, 2018. Continuing with the same theme, overweight and obesity has become a major issue for all, especially the sedentary worker. Higher body mass index (BMI) in adolescent and adult life is strongly associated with increased Non-communicable Disease (NCD) risks, specifically hypertension, diabetes, ischemic heart disease, and some chronic conditions; and that physical activity helps in weight reduction and minimising the negative effects of being overweight.

Heavy occupational activity, cycling to/from work, and leisure-time physical activity were found to be associated with lower risk of overall or abdominal overweight/obesity in male employees in a Chinese working population. **[1]** Sedentary time is considered an important and independent risk factor in weight gain and obesity genesis.**[2]** Leisure sitting time, the number of hours spent watching television, using a computer, and certain related activities, has been found to be importantly associated with overweight and high BMI.**[3]** **[4]** **[5]**

Basal Metabolic Rate (BMR) is defined as the rate at which the body uses energy while at rest to maintain vital functions such as breathing and keeping warm. Physical activity is essential for human beings irrespective of being overweight or obese, to maintain or increase BMR, as well as to increase daily energy expenditure and contribute to weight loss.**[6]** State of overweightness and obesity are known to decrease BMR; contrary to this any increase in BMR will help reduce weight.

According to the National Institute of Health USA, calorie intake is expended by 60-80% for BMR, 10% for digesting food we eat and 10-30% by physical activity. We have little choice but to depend on the physical activity we undertake to affect BMR.

BMR can be calculated using Harris-Benedict equation revised by Mifflin and Jeor in 1990:

BMR Men = (10xWt. in Kg) + (6.25xHt. in Cms) - (5xAge in Yrs.) + 5
BMR Women = (10xWt. in Kg) + (6.25xHt. in Cms) - (5xAge in Yrs.) – 161

Calorie requirements:

Sedentary Worker	= PAL 1.53xBMR
Active Worker	= PAL 1.76xBMR
Vigorous Activity	= PAL 2.25xBMR (PAL = Physical Activity Level)

BMR is determined according to our age, weight, height and gender, leaving on leisure-time physical activity to burn surplus calorie intake. That is where the complications start, as we find it difficult to sum up all our will power to reduce calorie intake and allocate enough time to engage in physical activity.

In old days walking or cycling was a norm for most of us. Children walked to schools and had plenty of running around during the school time. People walked to offices or workplace. Weekends were generally filled with outdoor activities. Climbing stairs was the norm but now we have lifts and escalators everywhere. Mechanised means of transportation has changed all that, significantly reducing our ability to expend energy without thinking about it. "Pass me the remote" and "please make a cuppa for me" are usual requests from a couched potato. The message is get up and do it yourself, it is good for you.

A Canadian study found obesity as a major health issue on farms, suggesting it requires attention at both clinical and population health levels of intervention. While the mechanization of farm work has obvious benefits in terms of productivity, its potential effects on risks for overweight and obesity must be recognized.**[7]**

We have a knack of avoiding spending energy in our daily routines. The advent of electronic gadgets and other mechanical assistance in our kitchens, bathrooms, offices and almost in every aspect of our life, commands us to spend less energy. Any effort to use your hands for daily activities, rather than gadgets, would allow us to spend a bit more energy and increase our BMR. This is not to suggest that we must go back to the old ways of doing things, but to recognise the fact that we need to find ways of adding to our daily physical activity by every possible means. This applies to all the other things that one can do to be more active to increase BMR in every possible way, contributing to overall spending of excess calories ingested.

Having realised the need to expand energy in every possible way, there is no compromise on sensible diet and essential physical activity.

Three things to remember to be healthy:

1. Lifestyle: Start enjoying activities that make you energetic. Spending time on dance floor rather than in front of a TV, sitting on a computer the whole day or only reading a book to spend your free time. A brisk walk (100 steps per minute) or any sport activity involving spending energy can do wonders. Make a habit of routine exercise and make sure you do not miss a day.
2. Diet: Not the place to discuss it at length. However, remember what determines the calorie intake; *quality, quantity and frequency*. Quality is important to judge if your diet is somehow too rich in fats and sugar and devoid of essential vegetables. Fresh and home-made meals may be healthier than the take-away meals. Avoid processed foods. Quantity of food determines the calories going into body. Your body does not need as much food as your eyes suggest. Keep to small helpings. Frequency: Eating in between meals one can tuck-in substantial calories. Do sedentary adults need a big breakfast, mid-morning tea with snack, a substantial lunch, an afternoon tea with cakes and biscuits, followed by supper and to end up with a platter of cheese and biscuits. A sedentary adult will do well with just two to three simple meals a day.
3. Physical Activity: Exercise is a must for everyone. How we find time or willpower to do it is the difficult proposition. In my blog on Office Workers Dilemma, suggestions were made how sedentary worker can find enough to do during working hours.

Some helpful suggestions:

1. Reduce salt, sugar and fat intake as much as possible;
2. Take tea or coffee without sugar;
3. Avoid sugar sweetened beverages at all costs;
4. Fatty and fried foods are tasty but it is important to keep them to the minimum;

5. Avoid processed foods like sausages, cured meats, and fatty cheeses;
6. Make your supper time as early as possible in the evening;
7. Reduce the quantity of animal proteins in your daily diet;
8. Green vegetables and nuts are good for you;
9. Make a habit of expanding energy in every possible way during the day;
10. A brisk walk for 20-40 minutes daily can do wonders.

References:

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