PHYSIOLOGICAL AND BIOCHEMICAL MECHANISMS INVOLVED IN ENERGY TURNOVER DURING PHYSICAL ACTIVITY

Summary

The human body requires for proper functioning clearly-defined amount of energy which depends on inherited genetic-based rate of metabolism, lifestyle, age, sex and current bodyweight. The balance between the amount of energy ingested with food and used by organism is the basis of health status and in order to preserve proper condition the energy balance should equal to zero. If the daily caloric requirement is not exceeded, the energy intake is equal to energy expenditure and our bodyweight does not change we achieved the status desired for healthy adults. The energy expenditure in adults could be divided into two categories. One is energy required for basal metabolic processes such as: blood circulation, heart function, thermoregulation, endocrinal activity and specific dynamic food action (energy required for digestion, absorption and metabolism of food ingredients). The second category is energy required for physical activity and exercise which contributes to largest increase in body energy requirement. Increase in energy expenditure is not only related to increased physical activity but also to intense mental work. These changes in activity should be reflected in the amount of energy supplied with the food in order to prevent undernutrition or overfeeding. The latter could lead to overweight and obesity although their direct causes are complex. An important role in etiology of obesity play genetic factors, improper nutrition, unhealthy lifestyle with low level of physical activity, stress and some psychological and social issues. That is why the physical activity remains one of the most effective means of maintaining the constant bodyweight and proper energy balance.