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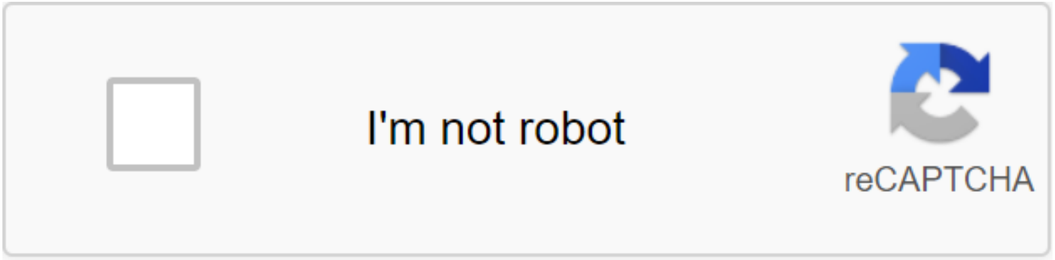

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Metabolism is the name given to all the reactions that occur in the body. These numerous reactions are regulated and catalyzed by enzymes. Among the functions of metabolism, we can highlight the receipt of energy. There are two main metabolic processes: catabolism and anabolicism. Below we will talk more about metabolism, its importance and its processes. Read more: Starch: The Importance and CharacteristicsWhat Is Metabolism? Metabolism is a set of all the reactions that occur in the body to control material and energy resources, in order to meet their structural and energy needs. These reactions are catalyzed with several enzymes and have as a goal: obtaining chemical energy; conversion of nutrient molecules into macronutrient precursors such as amino acids, nitrogen bases, sugars and fatty acids; production of macromolecules such as proteins, nucleic acids, polysaccharides and lipids; synthesis and degradation of specialized biomolecules. ATP production is one of the goals of metabolism. ATP is a molecule that provides energy to perform different reactions. Metabolism reactions are collected in two metabolic pathways, catabolism and anabolicism.1. Catabolism: also called humiliating, it is a continuous process and involves reactions that contribute to the degradation of complex molecules in simpler products, with the release of energy. The energy released by the catabolic route is used by the body to perform a wide variety of activities. Catabolic pathways can be classified as aerobic metabolism and anaerobic metabolism, as we will see below: Aerobic Metabolism: Reactions occur in the presence of oxygen, which, in respiratory chains, acts as the ultimate intake of electrons and is combined with hydrogen to form water. In aerobic metabolism, the end products are water reactions and carbon dioxide. Anaerobic metabolism: Reactions occur in the absence of oxygen. The final receivers of electrons in this type of metabolism may be nitrates, sulfates, fumarates and ammonia ions. Among the end products of these reactions can be identified lactate (milk fermentation) and ethanol (alcohol fermentation). The final balance of energy generated in aerobic metabolism is higher than in anaerobic.2. Anabolic: also called the biosynthetic pathway, it involves reactions in which complex molecules are produced from simple molecules. The reaction requires energy consumption. Anabolicism is necessary, for example, for the process of growth and maintenance of the body. Don't stop now... There's more ;)metabolic pathways are irreversible, however, they are interconnected. The energy released during the degradation of molecules (catabolic or degrading pathway) is used to synthesize biomolecules (anabolic or biosynthetic pathway) and other reactions. In addition to energy, the decay of organic molecules releases carbon that can be used in the synthesis of biomolecules. Intermediate compound processes such as the cycle of citric acid (one of the processes that occur in cellular respiration) can also be used in anabolic pathways as precursors to the synthesis of biomolecules. Energy Metabolism Energy Energy includes a set of reactions related to energy exchanges in the body. In order for these reactions to occur, energy substrates are needed that come from the feed. The main sources of energy used in these reactions are carbohydrates, lipids and proteins. Molecules from the digestion process of food are transferred to cells, where they oxidize, producing energy. In the process of digestion, the food is broken down into smaller molecules and absorbed, getting into the bloodstream. From the bloodstream they are pushed into various tissues and oxidized in cells, thus producing energy. For the complete degradation of molecules produced during feeding in CO2 and H2O, the presence of oxygen is necessary when energy is produced. Excess of these substrates, if not used, can be stored by the body in various forms. Carbohydrates, for example, can be stored as glycogen in the liver and used when the body does not consume enough of this substance to produce energy. In addition to providing energy, the food provide precursors to the synthesis of biomolecules such as essential amino acids. Energy production is responsible for the release of heat, which will be used to maintain body temperature, as well as to produce ATP (adenosine triphosphate). ATP is a molecule that participates in numerous metabolic processes, providing energy for its implementation. Energy release occurs by converting ATP into ADP (adenosine diphosphate) and inorganic phosphate. Also Access: Healthy Nutrition: Important information on this issue Is the amount of energy the body needs to perform a wide variety of functions. About 75% of the energy generated from food is used to perform vital bodily functions such as breathing, nervous system activity and circulation. The rate of basal metabolism can vary depending, for example, on gender and age. Some factors influence post if you don't digest the food in such a way that it generates heat. It is believed that the animal is in the zone of thermonuclear, if during experiments it is stored in the temperature range, within which the production of heat in the body remains unchanged. Respiratory methods of measuring tms and tmb - Volume or constant pressure respirometry. The beast is stored in a sealed container. Changes in pressure due to the consumption of O2 animals are measured at constant temperature by the pressure sensor. CO2 produced by an animal is chemically eliminated by KOH or ascaritis. If a Warburg melonometer is used, the change in pressure is measured by maintaining the constant volume of the container. Using the Gilson speedometer, the volume change is measured while maintaining constant pressure. Gas analysis. There is now a wide range of laboratory instruments that allow direct quantitative quantifying of O2 and CO2 concentrations. This device is very accurate and allows you to automatically identify. Calorimetric methods of measuring tms and tmb - Pumping calorie. Energy consumption is estimated by comparing the heat generated by the burning of an unesthy food sample with the heat produced by the burning of an equivalent sample of overcooked debris (faeces and urine) from this food. Direct calorie. It consists of a direct measurement of the heat produced by the flame of the burning sample. Indirect calorie. It measures heat production by comparing O2 consumption and CO2 production. It is based on the Hess Act, which states that a chemical reaction releases the amount of heat depends only on the nature of reagents and products. Gradient calorie. If the heat flow passes through the material of thickness G, area A and thermal conductivity C, the result is a temperature gradient that increases with G and decreases with A and C. This allows you to calculate energy consumption. Differential calorie content. Measures the heat flow between a camera containing an experimental animal and an adjacent unemployed camera. Two chambers are insulating, except for the surface that joins them, for which they exchange heat. TMS and TMB differ in proportion to the size of the animal. This relationship is known as metabolic escalation. The concept can be easily understood by comparing two herbivorous mammals of very different sizes, such as a rabbit and an elephant. If we quantify the foliage they ingest during the week, we find that the rabbit eats much less than the elephant. However, the mass of foliage eaten by the former would have been quite larger than her own body weight, whereas in the case of the second Back. This discrepancy indicates that, in proportion to their size, the energy needs of both species are different. The study of hundreds of animal species shows that this particular observation is part of a common model of quantitative metabolic escalation in terms of TMS and TMB. For example, the average TMB (2200 J/h) of 100 grams of mammals is not ten times, but only 5.5 times higher than the average TMB (400 J/h) of 10 grams of mammals. Similarly, the average TMB of mammals 400 g (4940 J/h) is not four times, but only 2.7 times higher than the average TMB 100 g of mammals. The TMS (or TMB) ratio represented by T, and the body weight represented by M, animal can be described by the classic equation of biological alamtry, T s a × Mb, in which A and B are permanent. Correcting this equation mathematically explains why TMS and TMB do not differ in proportion to the mass of animals. Using logarite on both sides, the equation can be expressed as follows: journal (T) - journal (a) b × log (M), journal (a) and b can be evaluated by linear regressive analysis between the experimental values of the journal (T) and the journal (M) of several animal groups. The log (a) constant is the point of cutting the regression line on the vertical axis. For its part, b, which is the tilt of this line, is an ametric constant. It has been found that the average astrometric constant of many animal groups is usually close to 0.7. In the case of the journal (a), the higher their value, the higher the metabolic rate of the animal group during the analysis. The lack of proportionality of TMS and TMB relative to size results in small animals having higher O2 needs per gram of body weight than large animals. For example, the energy consumption rate of one gram of whale tissue is much lower than that of one gram of mouse tissue. Large and small mammals have a heart and lungs of similar size relative to their body weight. Thus, the reduction in heart rate and lung last require much higher than that of the former in order to bring enough O2 into the tissue. For example, the number of heartbeats per minute is 40 in an elephant, 70 in an adult and 580 in a mouse. Similarly, humans breathe about 12 times and mice about 100 times per minute. In the same species, these models are also observed among individuals of different sizes. For example, in adults, the brain responds to about 20% of total metabolic costs, while in children 4 to 5 years of age these costs reach 50%. In mammals, body sizes and and basal metabolism are associated with the longevity equation L x 5.5 × C0.54 × M-0.34 × T-0.42, where L is long-lasting in months, C is brain mass in grams, M is body weight in grams, and T TMB calories per gram per hour. C indicates that mammalian life expectancy has a positive relationship with brain size. M indicates that life expectancy has a negative relationship with body weight. Exhibitor T indicates that longevity has a negative relationship with metabolic rate. This connection, although with different exhibitors, also applies to birds. However, they tend to live longer than mammals of similar body weight. The medical interest of women's TMB can double during pregnancy. This is due to an increase in oxygen consumption caused by the growth of fetal and uterine structures, as well as an increase in maternal circulation and kidney function. The diagnosis of hyperthyroidism can be confirmed by increased oxygen consumption, i.e. high TMB. In approximately 80% of thyroid hyperactivity cases, TMB is at least 15% higher than normal. However, high TMB can also be caused by other diseases. Gaiton Links, A.C., Hall, J. E. 2001. A contract on medical physiology. McGraw-Hill Inter american, Mexico. Hill, R.W., Weiss, GA, Anderson, M. 2012. Animal physiology. Sinauer Associates, Sunderland. Layton, J. R. B. 2008. Measuring metabolic rate is a guide for scientists. Oxford University Publishing House, Oxford. Lough, M., Oausson, H., Bostrom, K., Janerot-Schoberg, B., Solstrom, A., Rsum, E. 2005. Changes in basal metabolic rate during pregnancy due to changes in body weight and composition, cardiac output, insulin-like growth factor I, and thyroid hormones and due to fetal growth. American Journal of Clinical Nutrition, 81, 678-85. Randall, D., Burggren, W., French, K. 1998. Animal physiology - mechanisms and adaptations. McGraw-Hill Inter-American, Madrid. Solomon, S. J., Kurtzer, M.S., Calloway, D. H. 1982. Menstrual cycle and basal metabolic rate in women. American Journal of Clinical Nutrition, 36, 611-616. Willmer,., Stone, G., Johnston, I. 2005. Animal environmental physiology. Blackwell, Oxford. Oxford. retail business management book pdf. retail business management books