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DEPENDENCE OF HUMAN PHYSIOLOGICAL CONDITION ON BIOPHYSICAL
PARAMETERS

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✓ Resume

All human intellectual activity is based solely on the consumption of energy. Without energy, it is impossible to imagine the activity of the organism, the normal functioning of all the necessary benefits for people. This factor is extremely important both within a person and for his existence in the environment. Various areas of production cannot work independently, because they require constant energy production. Living systems for their existence must constantly replenish and expend energy. Energy processes in ecosystems obey the first and second laws of thermodynamics. In accordance with them, energy does not arise and does not disappear, it only passes from one form to another (the first law of thermodynamics is the law of conservation of energy). Some of the energy is dissipated in the form of heat.

The dependence of the human physiological state on biophysical parameters, the application, importance and changes of thermodynamic indicators in the human body are explained.

Key words: Thermodynamic indicators, thermoregulation, energy balance, heat transfer, heat war, application of the first and second laws of thermodynamics to the human body.

ЗАВИСИМОСТЬ ФИЗИОЛОГИЧЕСКОГО СОСТОЯНИЯ ЧЕЛОВЕКА ОТ БИОФИЗИЧЕСКИХ ПАРАМЕТРОВ

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✓ Резюме

Вся интеллектуальная деятельность человека основывается исключительно на потреблении энергии. Без энергии невозможно представить себе активность организма, нормальное функционирование всех необходимых благ для людей. Данный фактор крайне важен как внутри человека, так и для его существования в окружающей среде. Различные сферы производства не могут самостоятельно работать, ведь они требуют постоянного получения энергии. Живые системы для своего существования должны постоянно пополнять и расходовать энергию.

Энергетические процессы в экосистемах подчиняются первому и второму законам термодинамики. В соответствии с ними, энергия не возникает и не исчезает, она лишь переходит из одной формы в другую (первый закон термодинамики — закон сохранения энергии). При этом часть энергии рассеивается в виде тепла.

В данной статье объясняется зависимость физиологического состояния человека от биофизических параметров, применение, значение и изменение термодинамических показателей в организме человека.



INSON FIZIOLOGIK HOLATINING BIOFIZIK PARAMETRLARGA BOG'LIQLIGI

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✓ Rezyume

Insonning barcha faoliyati faqat energiya iste'moliga asoslangan. Energiyasiz organizmning faoliyatini, odamlar uchun barcha zaruriy manfaatlarning normal ishlashini tasavvur qilish mumkin emas. Bu omil inson ichida ham, uning muhida mavjudligi uchun ham nihoyatda muhimdir. Ishlab chiqarishning turli sohalariga mustaqil ishlay olmaydi, chunki ular doimiy energiya isemolini talab qiladi. Tirik tizimlar mavjudligi uchun doimo energiyani to'ldirishi va sarflashi kerak.

Ekotizimlardagi energiya jarayonlari termodinamikaning birinchi va ikkinchi qonunlariga bo'ysunadi. Ularga muvofiq energiya paydo bo'lmaydi va yo'qolmaydi, u faqat bir shakldan ikkinchisiga o'tadi (termodinamikaning birinchi qonuni - energiyaning saqlanish qonuni). Energiyaning bir qismi issiqlik shaklida tarqaladi.

Maqolada inson fiziologik holatining biofizik parametrlarga bog'liqligi, termodinamik ko'satgichlarning inson organizmidagi tadbiri, ahamiyati va o'zgarishi yoritilgan.

Kalit so'zlar: Termodinamik ko'satgichlar, termoregulyatsiya, energetik balans, issiqlik uzatish, issiqlik urushi, termodinamikaning birinchi va ikkinchi qonunlarining inson organizmiga tadbiri.

Relevance

Due to the fact that the organism is in constant contact with the external environment, changes in external environmental factors have a significant impact on the organism. Human body temperature is normally 36.2-36.8°C and is almost constant. Any temperature change of the external environment affects the homeostasis function of the human body, and a response reaction to this change is formed.

People living in regions with high temperature (Africa, desert, Sahara) are anatomically and physiologically adapted to high temperature. An example of anatomical adaptation is body color, which helps to keep them from constant heat. An example of physiological adaptation is the adaptation of visceral organs to high temperature, as well as the thickening of the skin [1].

Here a natural question arises: What is the energy balance of the body? We know that the food consumed by the human body is used for the following purposes: tissue regeneration, reserve formation, and growth in a young organism, etc. But the food consumed by the body is mainly used to compensate for the energy expenditure that occurs during the life of the body. This energy is the heat equivalent to the mechanical energy required to maintain the body temperature and replace the heat distributed to the environment, as well as for various activities in the body, including human work. The energy balance in the human body is taken in relation to a state of equilibrium of the body, i.e. in relation to the state in which energy expenditure exists in the body and this energy expenditure is coordinated with the heat released during digestion. In this case, the first law of thermodynamics is defined in relation to the body as follows: the amount of heat released in the body during the digestion of food is used to replace the part of the heat that escapes to the surrounding environment and is spent on the body's work [2].

It is not difficult to measure the mechanical work performed by a person under certain conditions. These measurements are carried out in accordance with the laws and formulas of physics. However, it is very difficult to directly determine the body's heat transfer to the surrounding environment.

Processes that ensure relatively constant maintenance of body temperature in humans are called thermoregulation. Thermoregulation is mainly divided into chemical thermoregulation related to the generation of heat and physical thermoregulation related to the transfer of heat to the surrounding environment.

The body transfers heat to the surrounding environment by heat conduction, convection, radiation, and evaporation. The ratio between them, all other things being equal, depends on the temperature,

humidity and movement of the environment surrounding the body. In this case, the surrounding environment means not only the environment that directly affects the organism (for example, air, water, etc.), but also the objects standing at a certain distance that can participate in heat exchange by radiation (for example, room walls, equipment, etc.) should also be understood [7].

Convection heat loss is normally through the air. The thermal conductivity of air is very small, but its convection can greatly increase the heat supply. In addition, air convection helps to evaporate moisture from the surface of the skin. Attempts are made to limit air movement to reduce convection. For this, a person wears clothes, and the walls of the dwelling are insulated with porous materials, and in porous materials there is still air.

The layer of the external environment, which is directly adjacent to the skin, is also very important for keeping the heat inside the body, because the main heat exchange of the body with the surrounding environment takes place in this layer. In humans, this layer is the main thermal protection of the body along with the air between the skin surface and clothes. The temperature on the surface of human clothes drops to 15-18 °C [3].

Radiative heat loss occurs mainly from the surface of clothing and some exposed areas of the body. Heat is usually radiated towards the surfaces of surrounding bodies, which have a slightly lower temperature. Because, according to the second law of thermodynamics, in heat exchange, heat always passes from bodies with a higher temperature to bodies with a lower temperature.

Moisture evaporates from the surface of the skin and from the lungs. A person emits about 350 grams of water vapor on average per day along with exhaled air. When sweating is normal, about 500 grams of sweat evaporates from the surface of the skin in a day (when the ambient temperature is 16-18°C). These numbers increase significantly when the temperature of the surrounding environment rises or when the muscles work intensively [4].

When the temperature of the surrounding environment is low, the release of heat increases mainly due to radiation. When the ambient temperature is high, heat loss through conduction and radiation decreases. In such conditions, heat is given due to the evaporation of sweat, which is greatly increased. If this is not enough, thermoregulation will be disturbed. This situation is called a heat war.

When the body temperature rises too high, heat loss from the body increases, and heat production is temporarily balanced. When the temperature drops, heat loss from the body increases [8].

The energy balance of the body is the ratio of the amount of energy provided by food and the amount of energy consumed by the body and released into the environment. The study of energy balance is of theoretical and practical importance (for example, to calculate the nutrition of people and farm animals). Energy balance is studied by calorimetry. Energy exchange is determined in kcal and kJ (1kcal = 4.19 kJ) [6].

The amount of energy released by a person can be determined directly by calorimetry, but this method requires sophisticated equipment. Another method - the method of indirect calorimetry is more convenient and based on the study of gas exchange. In this case, the respiration coefficient (CO_2 / O_2) is determined, and it turns out to be different during the oxidation of different substances. During the oxidation of carbohydrates, the respiration coefficient is equal to one; fat - 0.7; proteins - 0.81.

The amount of energy required to maintain the basic indicators of life is called the basal metabolism and it is determined in the morning, at rest, in a lying position, on an empty stomach, and in conditions of thermal comfort. Half of the main metabolism takes place in the liver (26%) and relaxed skeletal muscle (26%), the rest in the brain (18%), heart (9%) and others. The intensity of basal metabolism depends on age and gender. By the age of 70, it decreases significantly, it is lower in women than in men (1500 kcal per day for women, 1700 kcal for men).

The most convenient way to determine the main metabolism in the body is to determine it using the Reed formula (Reed table). In this case, it is possible to determine age-related metabolism by memorizing a simple table. Special tables (see Tables 1 and 2) allow you to determine the average statistical level of a person's basal metabolism according to the subject's height, age and body weight. By comparing these average values with the results obtained in the study of metabolism with the help of tools, it is possible to calculate the energy costs for performing a certain load [5].

Table 1. Table for calculating the basic metabolism of men

A				B						
Mass, kg	Kcal	Mass, kg	Kcal	Height, sm	Age					
					17	19	21	23	25	27
44	672	85	1235	40						
45	685	86	1249	44						
46	699	87	1263	48						
47	713	88	1277	52						
48	727	89	1290	56						
49	740	90	1304	60						
50	754	91	1318	64						
51	768	92	1332	68						
52	782	93	1345	72						
53	795	94	1359	76						
54	809	95	1373	80						
55	823	96	1387	84						
56	837	97	1406	88						
57	850	98	1414	92						
58	864	99	1428	96	113	—	—	—	—	—
59	878	100	1442	100	153	128	—	—	—	—
60	892	101	1455	104	193	168	—	—	—	—
61	905	102	1469	108	233	208	—	—	—	—
62	919	103	1483	112	273	248	—	—	—	—
63	933	104	1497	116	313	288	—	—	—	—
64	947	105	1510	120	353	328	—	—	—	—
65	960	106	1524	124	393	368	—	—	—	—
66	974	107	1538	132	433	408	—	—	—	—
67	988	108	1552	134	473	448	—	—	—	—
68	1002	109	1565	136	513	488	—	—	—	—
69	1015	110	1579	140	553	528	—	—	—	—
70	1029	111	1593	144	593	568	—	—	—	—
71	1043	112	1607	148	633	608	—	—	—	—
72	1057	113	1620	152	673	648	619	605	592	578
73	1070	114	1634	156	713	678	669	625	612	598
74	1084	115	1648	160	743	708	659	645	631	618
75	1098	116	1662	164	773	738	679	665	652	638
76	1112	117	1675	168	803	768	699	685	672	658
77	1125	118	1689	172	823	788	719	705	692	678
78	1139	119	1703	176	843	808	729	725	718	698
79	1153	120	1717	180	863	828	759	745	732	718
80	1167	121	1730	184	883	848	779	765	752	738
81	1180	122	1744	188	903	868	799	785	772	758
82	1194	123	1758	192	923	888	819	805	792	778
83	1208	124	1772	196	—	908	839	825	812	798
84	1222						859	845	832	818

Table 2. Table for calculating the basal metabolism in women

A				B						
Mass, kg	Kcal	Mass, kg	Kcal	Height, sm	Age					
					17	19	21	23	25	27
44	1076	85	1486	40						
45	1085	86	1478	44						
46	1095	87	1487	48						
47	1105	88	1497	52						
48	1114	89	1506	56						
49	1124	90	1516	60						
50	1133	91	1525	64						
51	1143	92	1535	68						
52	1152	93	1544	72						
53	1162	94	1554	76						
54	1172	95	1564	80						
55	1181	96	1573	84						
56	1191	97	1583	88						
57	1200	98	1592	92						
58	1210	99	1602	96	21					
59	1219	100	1661	100	5	14	—	—	—	—
60	1229	101	1621	104	19	2	—	—	—	—
61	1238	102	1631	108	27	18	—	—	—	—
62	1248	103	1640	112	43	34	—	—	—	—
63	1258	104	1650	116	59	50	—	—	—	—
64	1267	105	1659	120	75	66	—	—	—	—
65	1277	106	1669	124	101	82	—	—	—	—
66	1286	107	1678	128	123	114	—	—	—	—
67	1297	108	1688	132	127	116	—	—	—	—
68	1305	109	1698	136	139	130	—	—	—	—
69	1315	110	1707	140	155	146	—	—	—	—
70	1325	111	1717	144	171	162	—	—	—	—
71	1334	112	1726	148	187	178	—	—	—	—
72	1344	113	1736	152	201	192	183	174	164	155
73	1353	114	1745	156	215	206	190	181	172	162
74	1363	115	1755	160	229	220	198	188	179	170
75	1372	116	1764	164	243	234	205	196	186	177
76	1382	117	1774	168	255	246	213	203	194	184
77	1391	118	1784	172	267	258	220	211	201	192
78	1401	119	1793	176	279	270	227	218	209	199
79	1411	120	1803	180	291	282	235	225	216	207
80	1420	121	1812	184	303	294	242	233	223	214
81	1430	122	1822	188	313	304	250	240	231	221
82	1439	123	1831	192	322	341	257	248	238	229
83	1449	124	1847	196	333	324	264	255	246	236
84	1458	125	1851	200	343	334	272	262	253	244

The height and weight of the examined person are measured using a measuring tape and scales. Tables will be used later. The charts for determining the basal metabolic rate of men and women are different because men have an average of 10% higher basal metabolic rate than women. Tables are used as follows. If, for example, the examinee is a 25-year-old man with a height of 168 cm and a mass of 60 kg, then according to the tables for determining the basal metabolic rate of men (Table 1, part A), the number 892 is found. Next to the value of the human mass (table 1 part B) they are horizontally age (25 years) and vertical height (168 cm), the number 672 is located at the intersection of age and height

graphs. Adding both numbers ($892 + 672 = 1564$), you get the average statistical value of the normal basal metabolism of a man of a certain age, height and weight - 1564 kcal.

Conclusion

All human intellectual activity is based solely on the consumption of energy. Without energy, it is impossible to imagine the activity of the organism, the normal functioning of all the necessary benefits for people. This factor is extremely important both within a person and for his existence in the environment. Various areas of production cannot work independently, because they require constant energy production. Living systems for their existence must constantly replenish and expend energy.

Energy processes in ecosystems obey the first and second laws of thermodynamics. In accordance with them, energy does not arise and does not disappear, it only passes from one form to another (the first law of thermodynamics is the law of conservation of energy). Some of the energy is dissipated in the form of heat.

LIST OF REFERENCES:

1. Sobirjonov A.Z. Problem solving method in physics in general secondary schools //Modern Journal of Social Sciences and Humanities ISSN: 2795-4846 2022; 4.
2. Abdugabbarova U.M., Sobirjonov A.Z., Latipova K.D. Features of teaching biophysics to medical students. // British Journal of Global Ecology and Sustainable Development. 2023 March; 14: ISSN (E):2754-9291
3. Собиржонов А.З. Кохлеарная имплантация и перспективы её развития в Узбекистане. // Вестник Ташкентской медицинской академии. 2021; 8.
4. Самойлов В.О. Медицинская биофизика: учебник для вузов / 3-е изд., испр.и доп. — СПб.: СпецЛит, 2013; 591.
5. Bazarbayev M.I. and etc. // Biophysics. Tashkent, 2018.
6. William C. Parke, Biophysics: A Student's Guide to the Physics of the Life Sciences and Medicine Springer; 1st ed. 2020 edition.
7. Paul Davidovits. Physics in Biology and Medicine (4th edition) // Academic Press is an imprint of Elsevier 2012.
8. Raximov B. The role of innovative educational technologies in teaching biophysics. research and education. ISSN: 2181-3191 2023;2(3):91-99.
9. Рахимов Б., Мухитдинов Х., Жўраева З. Алгоритм обучения биофизике с использованием инновационных образовательных технологий. 30.03.2023 // Innovative Development in Educational Activities ISSN: 2181-3523 2023;2(6)191-200.
10. Базарбасв М.И., Сайфуллаева Д.И., Рахимов Б.Т., Жўрасва З.Р. Роль информационных технологий в медицине и биомедицинской инженерии в подготовке будущих специалистов в период цифровой трансформации в образовании. // Т.Т.А. Ахборотномасн 2022;10(10):8-13.
11. Raximov B.T. Современное состояние биофизики и особенности преподавания биофизики в медицинском вузе. // Formation of psychology and pedagogy as interdisciplinary sciences. Italia © Sp. z o. o. "CAN", 2021 © Authors, 18-27.

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