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## THE IMPACT OF ENERGY DRINKS ON THE HUMAN BODY

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**Relevance.** Nowadays, we can observe an increasing demand for energy drinks (ED), which are frequently consumed by people of almost all ages, especially young adults (including students and schoolchildren) without being aware of any potential health risks including addiction and some pathologies, e.g. cardiac, neurological, psychological diseases, and problems with digestion.

**Aim:** the aim of our project is to summarize and analyze all adverse and beneficial effects of ED consumption based on their chemical composition. Our purpose presupposes the following objectives:

- studying real cases of health problems associated with ED consumption.
- estimating the propensity for drinking energetics among the responders of our survey and evaluating their potential health risks.

**Materials and methods.** To achieve our purposes, we analyzed the chemical composition of 9 ED brands available on the Belarusian market, e.g. *Monster Energy, Genesis, Bizon, Atom, Dynamit, Hell, Gorilla, Burn, Red Bull*. In the course of our research, we reviewed some data bases (PubMed publications, Wikipedia) about the impact of individual ingredients in ED composition on the human body. Besides, we assessed the consequences of ED consumption, which include different health conditions. Additionally, we conducted a survey among young adults, mostly students (totally 54 responders), to investigate their experience of drinking energy beverages.

**Results and their discussion.** Energy drinks are often used to increase performance, relying on positive physical and cognitive effects of their ingredients. These effects strongly depend on the dosage, age, sex, the time of consumption, and personal sensitivity.

Our review of major common ingredients shows that the most popular energy drinks generally have similar chemical compositions including water, sugar, caffeine, taurine, and vitamins of group B. Some EDs contain other neuroactive ingredients and certain chemicals, for instance, extracts of panax ginseng, ginkgo biloba, and guarana. These substances prove to be beneficial for human organism in moderate doses.

Nevertheless, the negative consequences of ED consumption mostly occur due to excessive drinking, ED consumption when having cardiac, neurological, gastrointestinal, and other health problems, or mixing EDs with alcohol. The studies bring evidence of the development of addiction and having side effects such as weakness, shivering, headache, tachycardia, insomnia, tremors, or depression in the conditions listed above.

Our survey shows the following results:

Only 25 (46.3%) of participants drink energetics. The frequency of consumption varies: 16 (63.9%) of them drink EDs several times a year, 6 (24%) - several times a month, 3 (12.1%) - several times a week. In general, the responders of our survey aren't prone to consuming energy drinks. Thus, only 3 (12.1%) of them are recommended to reduce ED consumption to avoid negative consequences.

**Conclusion.** Assessing the results we have come to the following conclusions:

1. The major risk is associated with consumption of ED in high quantities and mixing EDs with alcohol, which can lead to addiction and certain side effects.
2. The available studies seem insufficient to make statement, what ED dosage could be beneficial for physical and mental health. Hence, we recommend mindful consuming of energy drinks.