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## SUMMARY

### *Effect of physical activity and diet on short-term memory in people over 60*

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Aging is a natural and irreversible process in every living organism. Thanks to a healthy and balanced diet and physical activity, this process can be slowed down by up to 10-20 years (Shephard, 2007).

Due to the dissemination of knowledge on the impact of hygienic lifestyle on health and the progress of medicine, it is estimated that soon the percentage of people over 65 in industrialized countries will constitute about 50% of the population (Kasperczyk, 2014). Due to the aging population, gerontology is gaining interest in many sciences, including medicine, psychology, dietetics, etc.

Over the years, there has been an abundance of research on the factors and effects on the healthy functioning of individual systems in the human body. Thanks to clinical dietetics, scientists know the composition of food products and their effects on individual internal organs or the human motor apparatus. Kinesiological diagnostics allows you to assess the type of movements that are harmful to joints and ligaments. Movement science allows you to establish the forms and norms of exercise for each age group. Guidelines have been established for seniors to undertake moderate physical effort for 150 minutes a week in order to maintain physical fitness and motor independence (Kasperczyk, 2014).

The human muscular surface accounts for 40% of the entire body, and the nervous system controls the entire body. That is why healthy eating and physical activity are so important. When a person does not lead a hygienic lifestyle, stops caring about the diet and leads a passive lifestyle, he must take into account the consequences such as: weaker muscles, worse lung efficiency, shorter physical fitness, and thus - independence, faster aging of the body, constantly deteriorating memory, and above all worse quality of life or faster death.

The aim of the study was to audit whether changing the lifestyle to a healthier one in old age may affect short-term memory. Two factors were selected that are easily achievable



for seniors - the introduction of food products that positively affect the work of the brain, as well as any forms of physical activity.

The research was carried out in two stages. The first one took place at the turn of December 2017 and January 2018, where the lifestyle of respondents over 60 was verified. After the selection of separate groups, the second stage began, which consisted of a scientific experiment that lasted from March 2018 and, together with a 3-month verification period, the research ended at the end of the year.

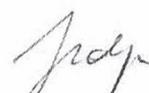
For both stages, observation sheets in the form of a diary were used, thanks to which it was possible to verify the diet of seniors and their physical activity. In addition, during the short-term memory test, respondents wrote down the memorized numbers on the last page of the diary. As a result, both the lifestyle and short-term memory level of the individual were recorded on one sheet.

The first stage selected two research groups - control and experimental. Physically active seniors with proper nutrition were the control group, while respondents with a passive lifestyle with a patchy diet, mostly (56.1%) poor in nutrients, were included in the scientific experience and constituted the experimental group.

The first stage already showed that lifestyle influences short-term memory, because seniors from the control group fared better in the psychometric test, remembering on average 4.0 numbers out of 7 presented. On the other hand, the respondents from the experimental group achieved an average result of 3.1 remembered numbers.

In the second stage, all respondents received tips on food products that positively affect the functioning of the central nervous system, as well as suggestions of types of physical and recreational activity that activate both hemispheres of the brain. The control group undertook to maintain a healthy diet and lead an active lifestyle until the end of the second stage by the experimental group. On the other hand, the respondents covered by the research experiment declared that they would introduce nutritional products from dietary guidelines into their menu and change their passive lifestyle into an active one, maintaining such a mode at least until the end of the verification period.

The results obtained after the second stage of the research and statistical analysis allowed to establish that 89% of the respondents from the experimental group followed the dietary guidelines and 72% of the respondents changed their passive lifestyle to an active one. Such a high percentage made it possible to obtain reliable results that allowed to formulate conclusions and verify the hypotheses and research question. Because seniors from the control group, maintaining an active lifestyle, kept their memory at a good level, achieving an



average result of 4.1 remembered numbers in the memory test. The respondents from the experimental group achieved a better result than in the first stage of the study, remembering an average of 3.9 out of 7. After the data analysis was completed, it was found that the difference from the memory test in this group was statistically significant. The conducted research allowed to conclude that changing the lifestyle to a healthier one in the elderly age has a beneficial effect on the central nervous system, and thus on short-term memory.

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