

IMPORTANCE OF TROFOSTAZ IN IMPROVEMENT OF HEALTH OF TEENAGERS

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Abstract: trophology is as a new kind of science. By its etymology from Ancient Greek τροφή (trophē, “nourishment”) – which comes from food, and at the same time helps us to support a constant durability of our body. Trofostaz is a special kind of homeostasis which maintains the constancy of the trophic flow the gastrointestinal tract into the internal environment, and it is different for each nation or country, as a result of consumption of each own local foods. And it is thought that, change in diet of people by many reasons, especially in developed countries, showed its negative affect to genetically produced trofostaz by decreasing health status of people. In this study we learn the effect of local food, “Turkmen bread” enriched with *Cucurbita maxima*, to the immune system and nutritional assessment parameters used in determination of protein-energy malnutrition (PEM) of people. All 70 subjects were voluntary boys of Military school in Ashgabat with average age 19.17 ± 0.1 . They consumed our especially prepared Turkmen bread with their meal for 30 days. Nutritional assessment parameters measured and cytokines (IL-1 β , IL-1RA, INF γ , IL-4, TNF α) concentration analyzed using “Vektor-Best” ELISA kits. Results showed that Turkmen local food improves the nutritional assessment parameters and immune system of Turkmen boys.

Keywords: trofostaz, food, immune system, interleukins.

ЗНАЧЕНИЕ ТРОФОСТАЗА В УЛУЧШЕНИИ ЗДОРОВЬЯ ПОДРОСТКОВ

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Аннотация: трофология как новый вид науки. По своей этимологии из древнегреческого троφή (trophḗ, «питание») - который происходит из пищи и в то же время помогает нам поддерживать постоянную прочность нашего тела. Трофостаз - это особый вид гомеостаза, который поддерживает постоянство трофического потока желудочно-кишечного тракта во внутреннюю среду, и он различен для каждой нации или страны в результате потребления каждой собственной местной пищи. И считается, что изменение рациона питания людей по многим причинам, особенно в развитых странах, показало его отрицательное влияние на генетически продуцируемый трофостаз, снижая состояние здоровья людей. В этом исследовании мы изучаем влияние местной пищи, «туркменского хлеба», обогащенной “Тыквой гигантской”, на иммунную систему и параметры оценки питания, используемые при определении белково-энергетической недостаточности (РЕМ) людей. Все 70 были добровольцами - мальчиками Военного училища в Ашхабаде со средним возрастом $19,17 \pm 0,1$ года. Наш специально приготовленный туркменский хлеб они ели в течение 30 дней. Измеренные параметры оценки питания и концентрацию цитокинов (IL-1 β , IL-1RA, INF γ , IL-4, TNF α) анализировали с использованием наборов ELISA «Вектор-Бест». Результаты показали, что туркменская местная еда улучшает параметры оценки питания и иммунную систему туркменских мальчиков.

Ключевые слова: трофостаз, питание, иммунная система, интерлейкины.

As above we noticed that Trophology is a new kind of science. This science is disagree with Russian inventor I.I. Mechnikov. If body's intestines bacterial flora very strong it's also benefit for human also, not only for animals. This science proves that it is very healthy also for people. Also says that, it is not important to kill all the microorganisms in intestines. Microorganisms which are in our intestines are not helping us about digestion of the food, also constant immunity system and nervous system and sets up a requirement for hormones regeneration. Especially if the food is produced in ecologically clean, safe conditions and in the same region where the human grow up which accepting this food. Stamina of teenagers (generally in 80-90%

of them) could show its signs during their bodies in their bodies' advancing ages which are from 10-20. Most of males are in the last decade of their life are going into new life way. They are being part of society, going into public and this matter showing its effect especially in microorganisms in intestines. These microorganisms in intestines are getting healthy. This point also strongly related with teenagers' health conditions and psychological matters. These conditions also appears about their metabolically, neurologically and immunologically matters. As a result was noticed that adapting and advancing of teenagers to the life is strongly related with their food. Actually we all know that when young boys are going to the military forces their adapting period is depending on their psychological conditions.

Aim. To learn the effect of local food, "Turkmen bread" enriched with *Cucurbita maxima*, to the immune system and nutritional assessment parameters used in determination of protein-energy malnutrition (PEM) of people.

Materials and methods. All 70 subjects were voluntary boys of Military school in Ashgabat with average age 19.17 ± 0.1 They consumed our especially prepared Turkmen bread with their meal for 30 days. Nutritional assessment parameters measured and cytokines (IL-1 β , IL-1RA, INF γ , IL-4, TNF α) concentration analyzed using "Vektor-Best" ELISA kits. Statistical analysis conducted by using Student's t-test.

Results. As we see, in the Table 1, in the weights of the teenager no any change, after fed with bread ingredients with pumpkin in their weights there is little bit decreasing. There are in the test subject soldiers' weight indexes also no any changes. Always their active muscles fat layers are growing up according to their shoulders. ($P < 0.05$), triceps' fat layer also, growing 0.09 mm according to their active muscles. It means that, the soldiers who are eating the bread with ingredient of pumpkin, can feel the protein-energetically support which comes from the food in their active muscles.

*Table 1. Effect of Turkmen bread enriched with *ucurbita maxima* to the nutritional assessment parameters*

	Before consumption of bread	After consumption of bread for 30 days
Height (m)	1.78 \pm 0.06	1.78 \pm 0.21
Weight (kg)	71.78 \pm 0.2	71.54 \pm 0.25
BMI (kg/m ²)	21.9	21.87
Shoulder width (cm)	22.62 \pm 0.1	22.82 \pm 0.05*
Triceps	8.8 \pm 0.1	8.89 \pm 0.05*

skinfold thickness (mm)		
Transferrin (mg/L)	2.0±0.05	2.1±0.06*
Serum albumin (g/L)	35.1±0.4	38.2±0.1*

*p<0.05

When they are doing some actions, any kind of actions, first of all their back gets sweat. One of the most important influences is also albumins in our blood improving regularly. (P<0.05) Except these benefits, we can say that, bread with ingredient of pumpkin is stabilizing the amount of the lymphocytes in our blood (P<0.05).

In the Table 2 we can see that cytokines also improves after consumption of pumpkin enriched bread. As a result we can say, bread with the ingredient of pumpkin not only helping protein-energetically, also supports their body with regular immunity system constancy. Actually, this study proved that, bread with the ingredient of pumpkin not only care about the soldiers' health, but supports bodies' protein-energetically requirements, supports immunity system and helps about teenagers' trofostaz.

Table 2. Effect of Turkmen bread enriched with Cucurbita maxima to the cytokines

	Before consumption of bread	After consumption of bread for 30 days
IL-1β (pg/ml)	0.58±0.02	0.72±0.008*
IL-1RA (pg/ml)	6.28±0.06	8.26±0.01*
INFγ (pg/ml)	0	0.28±0.009***
IL-4 (pg/ml)	0	0.04±0.03***
TNFα (pg/ml)	0.14±0.008	0.32±0.04*

*p<0.05 ***p<0.001

Finally we can say that, by improving Trofostaz we can also improve health of teenagers, especially in the period of puberty. Local foods plays main role in the regulation of trofostaz. Chinese medicine also confirms this information.

Conclusion. Each country's traditionally based diet from local foods helps improving health of people which can be seen in our study.

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