

Two Popular Diet Models: Food Intolerance Test and Diet for Blood Group

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Abstract

This study examined the distribution consistency of the foods and the consumption of which are considered to be “forbidden or limited” by the diet for certain blood groups and of the foods considered to be “forbidden or limited” at the end of food intolerance test. The study group was composed of 102 individuals that took the food intolerance test. Foodprint®200+test, which is part of Cambridge Food Intolerance Tests, (Cambridge Nutritional Sciences-Turkey) was given to the participants, and the results were analyzed in the Cambridge Turkey laboratories. The participants identified their own blood groups. One sample ratio test was used for statistical analysis. The distribution of the participants with type A blood to the foods suggested to be “forbidden and limited” for this blood group was found not to show 80 per cent consistency at the end of the food intolerance test ($p>0.05$). Another similar inconsistency was also observed for the blood types of B, AB and O ($p>0.05$). The results of the personal food intolerance test were found not to show minimum 80 per cent consistency with the foods included in the classification made by the diet for each blood group.

Keywords: Food intolerance, blood type, food, diet model, food intolerance test.

Introduction

The relationship between diet and health has been observed for a very long time. Before the science age, although people didn't have any diet knowledge, people realized that some foods were good for their health and they tried to identify healthy nutrients without test tubes, microscopes or laboratories¹. To detect the food negatively affecting one's

health, the foods which were deemed to result in sensitivity were excluded from the daily diet via elimination diets and the symptoms of the sensitive person were monitored^{2,3}.

Today, however, many methods have been developed and any negative impact deemed to be caused by foods is called “food reaction” (food allergy and food intolerance). A food allergy refers

to hypersensitivity reactions given to foods through the immune system, in other words, the defense system. Food intolerance, on the other hand, is the state of abnormal responses given by other mechanisms, without any allergy, or defense system overreaction⁴.

Although not as life threatening as a food allergy is, people with food intolerance suffer from many symptoms as well. The most common symptoms are bloating, tiredness, irritable bowel syndrome, migraines or headaches and skin or respiratory symptoms⁵⁻⁸.

More practical and easier-to-understand food intolerance tests have been developed today, which have enabled the detection of food-specific IgG antibodies and treatment or alleviation of intolerance-induced symptoms from which many people suffer for their whole lives⁵. IgG tests made to define food intolerance analyze all 4 sub-classes of IgG tests (IgG₁, IgG₂, IgG₃, IgG₄) or just the IgG₄ antibody⁹.

Other than food intolerance test, another diet model that has recently gained importance is "diet for blood group". As a result of the studies by J.D'Adamo, which suggests that people may have different diets according to their blood group, foods which are "forbidden or limited or free to consume", have been defined for each blood group¹⁰.

Each blood group carries a different antigen depending on its chemical structure. Blood group antigens start producing the strongest antibodies of the defense system when a foreign antigen enters the system. It is stated that there is an interaction between the blood and foods consumed by a person, which results from the "lectin" proteins, various types of which are present in foods at large amounts. "Diet for blood group" is based on the principle that when a person consumes a food containing lectin, which cannot adapt to his or her blood group antigen, that this lectin binds to some organs (such as the brain, stomach and liver) and cannot be digested, which results in an accumulation in these binding areas, causing some diseases such as bowel syndrome and cirrhosis. Foods to be consumed and not to be consumed by each blood group have been defined according to this principle. For instance, there is information suggesting that people with type O blood can consume animal protein sources more comfortably, while people with type A blood should follow a vegetarian diet¹⁰.

This study is aimed to detect whether the foods classified as "forbidden or limited" at the end of the food intolerance test of a person showed consistency with the foods "forbidden or limited" by his or her diet for blood group. In other words, the study attempted to show the consistency between the

“forbidden and limited foods” list created according to the diet for blood group and the results of food intolerance test specifically for each person. No such previous study conducted on this subject was encountered in the scope of the present study.

Materials and Methods

In total, 102 individuals took food intolerance tests in a private clinic for the study. Most of the participants applied to the clinic for a voluntary food intolerance test while some of them took the test after they got advice from the clinic doctor or dietitian for their symptoms (such as bloating or gas in the stomach or bowels, difficulty in losing weight, edema, insomnia, migraine attacks, skin problems, etc.). All participants were informed of the study and participated in the study on a voluntary basis.

The subjects applied for Cambridge Food Intolerance Test conducted by Cambridge Nutritional Sciences-Turkey, a subsidiary of England-resident Omega Diagnostics Group PLC. “Subclass 4 IgG Examination technique” was adopted for analyzing all four IgG types in the Cambridge Food Intolerance Tests, which include Food Print Test, applied with micro-array system and Food Detective Tests applied with macro-array system. Study participants were subjected to Foodprint®200+ test. Foodprint®200+

Genarrayt® food IgG test is a rapid, ELISA-based colorimetric microarray test for the measurement of IgG antibodies that can analyze up to 221 foods from blood, serum or plasma (Cambridge Nutritional Sciences-Turkey). In the scope of the study, the blood taken from the fingertips of the participants was prepared according to the instructions for use of the kit prepared for the test. Test results were analyzed in the Cambridge-Turkey laboratories.

Each participant gave his or her own blood group for the study and there were not any participants who did not know his or her blood group.

At the end of the food intolerance test taken by 102 participants, the foods which the participants produced IgG antibodies were defined and the results were compared to the foods classified as “forbidden or limited” by the blood group of each participant. Consistency was analyzed on the basis of 108 types of food defined at the end of intolerance test. In the diet for each blood group, there are lots of foods that are “forbidden or limited” for specific blood groups. Since the present study was aimed to reveal consistency with food intolerance tests, the foods defined by the food intolerance tests of the 102 participants (totally 108 types of food, including the results of all participants) were compared to those classified by the diet for each blood group.

In the data analysis, the distribution of the participants that took food intolerance test to the foods forbidden or limited by the diet for each blood group were calculated using percentage frequency statistics. The consistency of the resulting ratios between the foods forbidden or limited by the diet for each blood group and the foods forbidden or limited at the end of the food intolerance test was accepted to be a minimum of 80 per cent. In other words, 80 per cent of the calculated percentages were tested for their consistency with the foods classified according to the diet for each blood group. One sample ratio test was used for this purpose. Statistical significance was set at " $p > 0.05$ ".

The first and second hypothesis of this study was that (i) the foods forbidden by the diet for each blood group were forbidden by 80 per cent by the food intolerance test and (ii) the consumption of foods of which were limited by the diet for each blood group were limited by 80 per cent by the food intolerance test as well.

Results and Discussion

Sex, age, body weight and blood group variables of the participants

Seventy two per cent of the participants were female and the remaining 28 per cent were male. Average age, body weight and height values were 42.1 ± 10.6 years,

70.3 ± 12.0 kg, 163.4 ± 6.2 cm for females and 43.9 ± 14.1 years, 85.6 ± 12.4 kg, 177.4 ± 7.0 cm for males.

According to blood groups, participants with type A RH+ blood constituted 37 per cent; with type B RH+ blood constituted 14 per cent; with type AB RH+ blood constituted 11 per cent; and with type O RH+ blood constituted 38 per cent of the study group (Fig. 1).

Food intolerance tests were given to 39 per cent of the participants due to gas and bloating complaints, 29 per cent due to difficulty in losing weight, 15 per cent for edema, 10 per cent for skin problems, 5 per cent for migraine and 2 per cent for insomnia.

Distribution of participants according to test results to the foods forbidden or limited by the diet for each blood group

Blood group A

Table I gives the number of participants shown by the intolerance test to be sensitive to the foods classified as forbidden (foods in the "forbidden foods" list) by the diet for blood group A and related percentages.

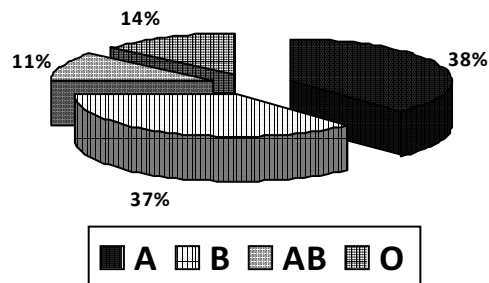


Figure 1

Distribution of participants according to blood groups

According to the recommended diet, people with type A blood are recommended to avoid 22 foods (forbidden). However, the food intolerance test revealed that they were sensitive to 17 out of these 22 foods. The sensitivity of the people with type A blood to the foods that they should not consume (according to the diet for blood group) was behind the prediction in terms of percentages. For instance, food intolerance test results of a maximum 50 per cent of the 38 participants with type A blood showed that they should not consume cow's milk. Moreover, the statistical testing of the hypothesis showed that the minimum consistency between this ratio and the diet for blood group should be at least 80 per cent and this proves that the results were inconsistent ($p > 0.05$).

Table II lists the number of participants shown by the intolerance test to be sensitive to the foods classified as limited (foods to be consumed at limited amounts) by the diet for blood group A and related percentages.

The recommended diet for blood group A suggests a limited consumption of 49 foods by the people within this blood group. However, the food intolerance test revealed sensitivity to 38 out of these 49 foods. The sensitivity of the people with type A blood to the foods that they should consume at limited amounts (according to the diet for blood group) was far behind our prediction. In other words, the people with this type of blood were expected to be more sensitive (at the end of the food intolerance test) to all or most of the foods they should consume at limited

TABLE I
Participants Sensitive to Foods Forbidden by the Diet for Blood Group A

Foods	N	%	z value	Foods	N	%	z value
Cow's milk	19	50	-0.162	Lamb meat	1	3	-11.923
Mussel	6	16	-9.896	Chili pepper	0	0	-12.329
Lobster	1	3	-11.923	Black pepper	0	0	-12.329
Caviar	1	3	-11.923	Cashew	18	47	-5.029
Shrimp	2	5	-11.518	Pistachio	7	18	-9.490
Crab	1	3	-11.923	Chickpea	1	3	-11.923
Orange	7	18	-9.490	Haricot bean	8	21	-9.084
Mandarin orange	0	0	-12.329	Potato	7	18	-9.490
Tomato	2	5	-11.518	Eggplant	0	0	-12.329
Wheat bran	6	16	-9.896	Black tea	0	0	-12.329
Beef	1	3	-11.923	Coca cola	16	42	-5.840

H_0 refusal, $p > 0.05$

TABLE II
Participants Sensitive to Foods Limited by the Diet for Blood Group A

Foods	N	%	z value	Foods	N	%	z value
Trout	5	13	-10.301	Chestnut	0	0	-12.329
Pear	1	3	-11.923	Cumin	2	5	-11.518
Barley	2	5	-11.518	Kiwi	1	3	-11.923
Sunflower seed	2	5	-11.518	Sheep cheese	3	8	-11.112
Almond	0	0	-12.329	Sheep milk	3	8	-11.112
Pea	6	16	-9.896	Curry	2	5	-11.518
Brewer's yeast	4	11	-10.707	Currant	2	5	-11.518
Wheat	9	24	-8.679	See bass	2	5	-11.518
Dill	2	5	-11.518	Mushroom	4	11	-10.707
Durum wheat	0	0	-12.329	Corn	2	5	-11.518
Baker's yeast	1	3	-11.923	Peppermint	2	5	-11.518
Apple	1	3	-11.923	Pomegranate	3	8	-11.112
Hazelnut	5	13	-10.301	Nectarine	1	3	-11.923
Raspberry	0	0	-12.329	Beet	0	0	-12.329
Gluten	5	13	-10.301	Rice	3	8	-11.112
Coconut	1	3	-11.923	Cucumber	2	5	-11.518
Turkey meat	4	11	-10.707	Peach	0	0	-12.329
Cow's milk Cheeses	c	3	-11.923	Cinnamon	3	8	-11.112
Cow's yoghurt	1	3	-11.923	Chicken	0	0	-12.329
Semolina	4	11	-10.707	Tuna	0	0	-12.329
Watermelon	1	3	-11.923	Radish	6	16	-9.896
Melon	0	0	-12.329	Grape	2	5	-11.518
Goat's cheese	0	0	-12.329	Egg white	1	3	-11.923
Goat's milk	0	0	-12.329	Yolk	6	16	-9.896
Thyme	1	3	-11.923				

H_0 refusal, $p > 0.05$

amounts (according to the diet for blood group). For instance, food intolerance test results of maximum 16 per cent of the 38 participants with type A blood showed that they should only consume a limited amount of radish and yolk.

Moreover, the statistical testing of the hypothesis showed that the minimum consistency between this ratio and the diet for blood group should be at least 80 per cent and this proves that the results were inconsistent ($p > 0.05$).

Blood group B

The number of participants shown by the intolerance test to be sensitive to the food classified as forbidden (foods in the “forbidden foods” list) by the diet for blood group B and related percentages are presented in Table III.

According to the recommended diet, it is suggested that people with type B blood should avoid 22 foods (forbidden). However, food intolerance test revealed sensitivity to only 9 out of these 22 foods. The sensitivity of the people with type B blood to the foods that they should not consume (according to the diet for blood group) was behind the prediction. Food intolerance test results showed that a maximum of 29 per cent of the 14 participants with type B blood

should not consume cashew. Moreover, the statistical testing of the hypothesis showed that a minimum consistency between this ratio and the diet for blood group should be at least 80 per cent and this proves that the results were inconsistent ($p > 0.05$).

The number of participants shown by the intolerance test to be sensitive to the foods classified as limited (foods to be consumed at limited amounts) by the diet for blood group B and related percentages are listed in Table IV.

According to the recommended diet, the diet for blood group B suggests a limited consumption of 53 foods by the people within this group. However, as seen in the Table, the sensitivity of the participants with type B blood to the

TABLE III
Participants Sensitive to Foods Forbidden by the Diet for Blood Group B

Foods	N	%	z value	Foods	N	%	z value
Trout	5	13	-10.301	Chestnut	0	0	-12.329
Mussel	3	21	-5.479	Rye flour	0	0	-7.483
See beas	0	0	-7.483	Chicken	1	7	-6.815
Lobster	1	7	-6.815	Cinnamon	1	7	-6.815
Shrimp	0	0	-7.483	Black pepper	0	0	-7.483
Crab	0	0	-7.483	Cashew	4	29	-4.811
Pomegranate	0	0	-7.483	Pistachio	1	7	-6.815
Tomato	0	0	-7.483	Peanut	1	7	-6.815
Buckwheat	0	0	-7.483	Hazelnut	0	0	-7.483
Corn	0	0	-7.483	Chickpea	0	0	-7.483
Wheat	3	21	-5.479	Pinto beans	1	7	-6.815
Wheat bran	0	0	-7.483	Artichoke	0	0	-7.483

H_0 refusal, $p > 0.05$

foods that they should consume at limited amounts (according to the diet for blood group) was far behind the prediction. For instance, food intolerance test results showed a maximum of 29 per cent out of

14 participants with type B blood should consume a limited amount of yolk. Moreover, the statistical testing of the hypothesis showed that a minimum consistency between this ratio and the diet for blood group should be at least

TABLE IV
Participants Sensitive to Foods Limited by the Diet for Blood Group B

Foods	N	%	z value	Foods	N	%	z value
Raspberry	0	0	-7.483	Celery	1	7	-6.815
Pear	0	0	-7.483	Chestnut	0	0	-7.483
Barley	1	7	-6.815	Flaxseed	0	0	-7.483
Almond	1	7	-6.815	Cumin	0	0	-7.483
Horsebean	0	0	-7.483	Cherry	0	0	-7.483
Pea	0	0	-7.483	Kiwi	0	0	-7.483
Brewer's yeast	2	14	-6.147	Raisin	0	0	-7.483
Blackberry	0	0	-7.483	Lemon	0	0	-7.483
Walnut	0	0	-7.483	Mandarin orange	0	0	-7.483
Dill	0	0	-7.483	Mushroom	0	0	-7.483
Durum wheat	2	14	-6.147	Romaine lettuce	1	7	-6.815
Baker's yeast	2	14	-6.147	Peppermint	1	7	-6.815
Apple	0	0	-7.483	Nectarine	0	0	-7.483
Green bean	1	7	-6.815	Potato	0	0	-7.483
Gluten	3	21	-5.479	Leek	0	0	-7.483
Grape fruit	1	7	-6.815	Orange	1	7	-6.815
Coconut	2	14	-6.147	Cucumber	0	0	-7.483
Turkey meat	0	0	-7.483	Garlic	2	14	-6.147
Cow's milk	3	21	-5.479	Black tea	1	7	-6.815
Spinach	2	14	-6.147	Onion	0	0	-7.483
Fig.	1	7	-6.815	Soybean	2	14	-6.147
Beef	0	0	-7.483	Peach	1	7	-6.815
Semolina	0	0	-7.483	Sugar cane	1	7	-6.815
Coffee	0	0	-7.483	Tuna	2	14	-6.147
Melon	0	0	-7.483	Egg white	1	7	-6.815
Apricot	0	0	-7.483	Yolk	4	29	-4.811
Thyme	0	0	-7.483				

H_0 refusal, $p > 0.05$

80 per cent and this proves that the results were inconsistent ($p > 0.05$).

Blood group AB

Table V shows the number of participants found by the intolerance test to be sensitive to the foods classified as forbidden (foods in the “forbidden foods” list) by the diet for blood group AB and related percentages.

According to the results, via food intolerance test, of the number of participants sensitive to the 24 foods forbidden by the diet for blood group AB produced a low participant distribution. For instance, out of 11 participants with type AB blood, corn was found to be 55 per cent, cow's milk was 45 per cent and coke was 36 per cent. Moreover, consistency between the diet for blood

group AB and food intolerance test results was not at the 80 per cent level ($p > 0.05$).

The number of participants shown by the intolerance test to be sensitive to the foods classified as limited (foods to be consumed at limited amounts) by the diet for blood group AB and related percentages are listed in Table VI. The recommended diet for blood group AB suggests a limited consumption of 44 foods by the people in this group. However, as seen in the Table, the sensitivity of the participants with this type of blood to the foods that they should consume at limited amounts (according to the diet for blood group) was far behind the prediction. The statistical testing of the hypothesis showed that a minimum consistency between this

TABLE V
Participants Sensitive to Foods Forbidden by the Diet for Blood Group AB

Foods	N	%	z value	Foods	N	%	z value
Cow's milk	5	45	-2.864	Black pepper	0	0	-6.633
See bass	1	9	-5.879	Hazelnut	3	27	-4.372
Lobster	0	0	-6.633	Chickpea	0	0	-6.633
Shrimp	1	9	-5.879	Horsebean	1	9	-5.879
Crab	0	0	-6.633	Haricot bean	1	9	-5.879
Orange	1	9	-5.879	Artichoke	0	0	-6.633
Pomegranate	0	0	-6.633	Radish	3	27	-4.372
Buckwheat	1	9	-5.879	Black tea	0	0	-6.633
Corn	6	55	-2.211	Coffee	0	0	-6.633
Beef	0	0	-6.633	Coca cola	4	36	-3.618
Chicken	0	0	-6.633	Sunflower seed	2	18	-5.126
Chili pepper	0	0	-6.633	Mushroom	1	9	-5.879

H_0 refusal, $p > 0.05$

ratio and the diet for blood group should be at least 80 per cent and this proves that the results were inconsistent ($p>0.05$).

Blood group O

The number of participants shown by the intolerance test to be sensitive to the foods classified as forbidden (foods in the “forbidden foods” list) by the diet for blood group O and related

percentages are listed in Table VII. The recommended diet for blood group O suggests the avoidance of 28 foods (forbidden) by the people in this group. However, as seen in the table, sensitivity of the participants with this type of blood to the foods they should not consume (according to the diet for blood group) was far behind our prediction. Out of 11 participants with type O blood, wheat was found to affect the most

TABLE VI
Participants Sensitive to Foods Limited by the Diet for Blood Group AB

Foods	N	%	z value	Foods	N	%	z value
Raspberry	0	0	-6.633	Semolina	2	18	-5.126
Pistachio	0	0	-6.633	Cashew	5	45	-2.864
Pear	1	9	-5.879	Melon	1	9	-5.879
Barley	0	0	-6.633	Apricot	0	0	-6.633
Almond	0	0	-6.633	Thyme	0	0	-6.633
Pea	2	18	-5.126	Flaxseed	1	9	-5.879
Brewer's yeast	2	18	-5.126	Currant	3	27	-4.372
Blackberry	2	18	-5.126	Lamb meat	1	9	-5.879
Wheat	1	9	-5.879	Mandarin orange	0	0	-6.633
Wheat bran	1	9	-5.879	Romaine lettuce	0	0	-6.633
Dill	0	0	-6.633	Mussel	1	9	-5.879
Tomato	1	9	-5.879	Peppermint	1	9	-5.879
Durum wheat	2	18	-5.126	Nectarine	1	9	-5.879
Baker's yeast	2	18	-5.126	Potato	4	36	-3.618
Apple	0	0	-6.633	Leek	0	0	-6.633
Green bean	0	0	-6.633	Onion	0	0	-6.633
Gluten	2	18	-5.126	Paech	0	0	-6.633
Carrot	0	0	-6.633	Sugar cane	4	36	-3.618
Caviar	0	0	-6.633	Cinnamon	2	18	-5.126
Coconut	0	0	-6.633	Egg white	1	9	-5.879
Spinach	1	9	-5.879	Yolk	2	18	-5.126
Cumin	0	0	-6.633	Ginger	3	27	-4.372

H_0 refusal, $p>0.05$

people at 49 per cent, coke was 44 per cent and cow's milk was 36 per cent by the food intolerance test. This ratio did not support the hypothesis that minimum consistency with the diet for blood group should be 80 per cent, therefore the results did not show consistency ($p > 0.05$).

The number of participants shown by the intolerance test to be sensitive to the foods classified as limited (foods to be consumed at limited amounts) by the diet for blood group O and related percentages are listed in Table VIII. The recommended diet for blood group O suggests a limited consumption of 59 foods by the people in this group. The statistical testing of the hypothesis

showed that a minimum consistency between this ratio and the diet for blood group should be at least 80 per cent and this proves that the results were inconsistent ($p > 0.05$). Analyses of the number of participants pointed to an inconsistency between the diet for blood group O and food intolerance test results.

This study attempted to discover whether the foods classified into "forbidden or limited" foods group at the end of the food intolerance test were consistent with the foods classified into "forbidden or limited" foods grouped together by the diets for each blood group. The study showed that there is no such consistency. In other words, it

TABLE VII
Participants Sensitive to Foods Forbidden by the Diet for Blood Group O

Foods	N	%	z value	Foods	N	%	z value
Cow's milk	14	36	-6.886	Cashew	13	33	-7.286
Blackberry	2	5	-11.689	Pistachio	5	13	-10.488
Orange	6	15	-10.088	Peanut	7	18	-9.688
Mandarin orange	1	3	-12.090	Pinto beans	13	33	-7.286
Kiwi	0	0	-12.490	Haricot bean	4	10	-10.889
Melon	4	10	-10.889	Leek	0	0	-12.490
Barley	13	33	-7.286	Cucumber	2	5	-11.689
Corn	11	28	-8.086	Potato	8	21	-9.287
Semolina	2	5	-11.689	Lentil	7	18	-9.688
Durum wheat	5	13	-10.488	Black tea	0	0	-12.490
Wheat	19	49	-4.884	Coffee	2	5	-11.689
Wheat bran	2	5	-11.689	Chestnut	0	0	-12.490
Coconut	0	0	-12.490	Coca cola	17	44	-5.685
Black pepper	1	3	-12.090	Sunflower seed	8	21	-9.287

H_0 refusal, $p > 0.05$

TABLE VIII
Participants Sensitive to Foods Limited by the Diet for Blood Group O

Foods	N	%	z value	Foods	N	%	z value
Trout	2	5	-11.689	Celery	4	10	-10.889
Pineapple	2	5	-11.689	Cumin	1	3	-12.090
Pear	2	5	-11.689	Sheep cheese	2	5	-11.689
Almond	1	3	-12.090	Sheep milk	2	5	-11.689
Horsebean	0	0	-12.490	Currant	0	0	-12.490
Pea	3	8	-11.289	Lemon	0	0	-12.490
Brewer's yeast	6	15	-10.088	Mushroom	2	5	-11.689
Chili pepper	1	3	-12.090	Mussel	6	15	-10.088
Rye flour	4	10	-10.889	Peppermint	1	3	-12.090
Dill	1	3	-12.090	Pomegranate	0	0	-12.490
Tomato	2	5	-11.689	Nectarine	2	5	-11.689
Baker's yeast	3	8	-11.289	Chickpea	0	0	-12.490
Apple	0	0	-12.490	Beet	0	0	-12.490
Green bean	1	3	-12.090	Eggplant	1	3	-12.090
Hazelnut	2	5	-11.689	Rice	4	10	-10.889
Raspberry	0	0	-12.490	Garlic	2	5	-11.689
Gluten	2	5	-11.689	Salmon	0	0	-12.490
Grape fruit	0	0	-12.490	Soybean	5	13	-10.488
Carrot	1	3	-12.090	Peach	0	0	-12.490
Caviar	1	3	-12.090	Sugar cane	2	5	-11.689
Turkey meat	0	0	-12.490	Cinnamon	2	5	-11.689
Cow's cheese	6	15	-10.088	Chicken	1	3	-12.090
Cow's yoghurt	6	15	-10.088	Tuna	1	3	-12.090
Lobster	1	3	-12.090	Radish	3	8	-11.289
Buckwheat	1	3	-12.090	Mackerel	0	0	-12.490
Shrimp	0	0	-12.490	Grape	1	3	-12.090
Watermelon	0	0	-12.490	Crab	2	5	-11.689
Apricot	1	3	-12.090	Gruel	2	5	-11.689
Goat cheese	2	5	-11.689	Egg white	4	10	-10.889
Goat milk	2	5	-11.689	Yolk	8	21	-9.287
Thyme	0	0	-12.490				

H_0 refusal, $p > 0.05$

is concluded that a food forbidden by the diet for blood group may not be forbidden and may be permitted by the food

intolerance test. There is no other literature study on this subject in terms of comparison of the findings.

However, study participants suffering from different symptoms and applying to a clinic to take a food intolerance test were recorded to suffer less within one month after avoiding the foods forbidden or limited by the food intolerance test. As a result of many studies on food allergies and food intolerance, the blood analysis of a significant number of people suffering from different symptoms (such as irritable bowel syndrome, dyspepsia, Crohn's, migraine) showed that their blood contained increasing number of IgG antibodies against some foods¹¹⁻¹⁶.

Previous studies revealed that the exclusion of the foods found to contain IgG antibodies from the daily diet of patients with Irritable Bowel Syndrome (IBS) alleviates their symptoms^{17,18} and also the exclusion of the intolerance developing foods from the diet of migraine patients decreases the number of migraine attacks¹⁹.

However, there are findings supporting that the general health condition of the patients following the diet for blood group improved and their symptoms were alleviated¹⁰. However,

this study did not subject the participants to the diet for each blood group. For this reason, it is impossible to state such findings in the scope of this study.

Conclusion

This study predicted that persons sensitive to the foods defined by the diet for each blood group would show the same sensitivity to the foods defined at the end of food intolerance test. However, the sensitivity of the study participants that took food intolerance test for the foods defined by the diet for each blood group was low in number and the study showed no consistency between the two diet models. Since the food intolerance test is specific to each person it is more personal and more up-to-date than the diet for each blood group, the belief that the former is more valid and effective than the latter has strengthened. Moreover, the alleviation of the symptoms the study participants suffered from after a diet program was designed, according to the test results, and monitored by a dietitian is a concrete result of the positive effects of food intolerance test.

REFERENCES

1. Kavas, A. The right diet for healthy living, III Edition, İstanbul, Turkey, Mart Printing Office, 2003.
2. Lied, G.A. Gastrointestinal food hypersensitivity: Symptoms, diagnosis and provocation tests. *Turk. J. Gastroenterol.*, 2007, **18**, 5-13.
3. Ünal, H.Ü. and Fýrat, D. Nutrition in inflammatory bowel diseases. *Güncel Gastroenteroloji.*, 2012, **16**, 166-170.

4. Öztürk, M. and Besler, T. Food allergies. Beslenme Bilgi Serisi 2- B4. Ankara, Turkey. T.C. Ministry of Health, 2008.
5. Alpay, K., Ertap, M., Orhan, E.K., Üstay, D.K., Lieners, C. and Baykan, B. Diet restriction in migraine, based on IgG against foods: A clinical double-blind, randomised, cross-over trial. *Cephalalgia*, 2010, **30**, 829-837.
6. Hardman, G. and Hart, G. Dietary advice based on food-specific IgG results. *Nutr. & Fd Sci.*, 2007, **37**, 16-23.
7. Gaby, A.R. The role of hidden food allergy/intolerance in chronic disease. *Altern. Med. Rev.*, 1998, **3**, 90-100.
8. Drisko, J., Bischoff, B., Hall, M. and Mc Callum, R. Treating irritable bowel syndrome with a food elimination diet followed by food challenge and probiotics. *J. Am. Coll. Nutr.*, 2006, **25**, 514-522.
9. Hicks, K. and Hart, G. Role for food-specific IgG-based elimination diets. *Nutr. Fd. Sci.*, 2008, **38**, 404-416.
10. J. D'Adamo P. Kan. Blood type diet. translated By: Mehtap Gün Ayral. I Edition, İstanbul, Turkey.: Yakamoz Book, 2012.
11. Zuo, X.L., Li, Y.Q., Li, W.J., Guo, Y.T., Lu, X.F., Li, J.M. and Desmond, P.V. Alteration of food antigen specific serum immunoglobulins G and E antibodies in patients with irritable bowel syndrome and functional dyspepsia. *Clin. Exp. Allergy*, 2007, **37**, 823-830.
12. Whorwell, P. and Lea, R. Dietary treatment of the irritable bowel syndrome. *Curr. Treat. Options Gastroenterol.*, 2004, **7**, 307-316.
13. Pascual, J. and Oterino, A. IgG- mediated allergy: a new mechanism for migraine attacks. *Cephalalgia*, 2010, **30**, 777-779.
14. Sandberg, D.H. Gastrointestinal complaints related to diet. *Int. Pediatr.*, 1990, **5**, 23-29.
15. Arroyave Hernández, C.M., Echavarría Pinto, M. and Hernández Montiel, H.L. Food allergy mediated by IgG antibodies associated with migraine in adults. *Rev. Alerg. Mex.*, 2007, **54**, 162-168.
16. Manu, P., Matthews, D.A. and Lane, T.J. Food intolerance in patients with chronic fatigue. *Int. J. Eat Disord.*, 1993, **13**, 203-209.
17. Atkinson, W., Sheldon, T.A., Shaath, N. and Whorwell, P.J. Food elimination based on IgG antibodies in irritable bowel syndrome: a randomised controlled trial. *Gut*. 2004, **53**, 1459-1464.
18. Ligaarden, S.C., Lydersen, S. and Farup, P.G. IgG and IgG4 antibodies in subjects with irritable bowel syndrome: a case control study in the general population. *BMC Gastroenterol.*, 2012, **12**, 166.
19. Rees, T., Watson, D., Lipscombe, S., Speight, H., Cousins, P., Hardman, G. and Dowson, A. A prospective audit of food intolerance among migraine patients in primary care clinical practice. *Headache Care*, 2005, **2**, 11-14.