Consumption of light foods and drinks among adults

Konsumpcja produktów typu light wśród osób dorosłych

Elżbieta Szczepańska, Elwira Grudowska

Department of Human Nutrition, Faculty of Health Sciences in Bytom, Medical University of Silesia, Katowice, Poland

ABSTRACT

INTRODUCTION: Nutritional habits are significant not only in maintaining good health, but also in preventing many diseases. Proper nutrition also helps to maintain the right body weight. Due to growing consumer interest in these issues, a new food market sector, namely light foods, has emerged. The aim of the study was to assess the consumption frequency of light foods and drinks and to analyse the relationship between the consumption frequency and age, education and body weight of the respondents.

MATERIAL AND METHODS: The study involved 203 adults who declared the consumption of light foods and drinks. The frequency of consuming light foods and drinks was assessed on the basis of the author's own survey questionnaire.

RESULTS: The largest proportion of respondents choose light dairy products several times a week (23.2%) or occasionally (40.4% of respondents). Fat products of a light type and light sweets were consumed occasionally by 34.5% and 30% of respondents respectively. Light drinks were in most cases consumed several times a month (20.7%) and occasionally (40.4%).

CONCLUSIONS: The consumption of fast foods is rare among the respondents. There was a weak or low correlation between the frequency of light food consumption and age, education and body weight of the respondents. It seems necessary to provide nutrition education from an early age, especially among children and adolescents, and to continue it with adults.

KEY WORDS

health, nutrition, light foods and drinks

STRESZCZENIE

WSTĘP: Sposób żywienia ma znaczenie nie tylko dla utrzymania dobrego stanu zdrowia, ale również w prevencji wielu chorób. Prawidłowe odżywianie pozwala także utrzymać właściwą masę ciała. Z powodu zwiększenia zainteresowania konsumentów tymi zagadnieniami zaczął rozwijać się nowy sektor rynku żywnościowego, tj. produkty typu light. Celem pracy była ocena częstości ich spożycia oraz analiza zależności pomiędzy częstością konsumpcji a wiekiem, wykształceniem i masą ciała badanych osób.

MATERIAL I METODY: W badaniu brały udział 203 dorosłe osoby, które deklarowały spożywanie produktów typu light. Częstotliwość ich konsumpcji oceniano na podstawie autorskiego kwestionariusza ankiety.
Among a growing group of consumers, there is rising interest in taking care of one’s health and slowing down or inhibiting ageing processes [1]. Many research results indicate that nutritional habits are of great importance not only to maintain good health but also to prevent many diseases. Proper nutrition also helps to maintain the right body weight [2]. Due to growing consumer interest in these issues, a new food market sector, referred to as functional food, began to emerge. Such food may be produced by adding biologically active compounds, by removing the anti-nutrient components, by lowering the content of individual components or using substitutes for undesirable substances (e.g., low energy density foods with reduced salt, sugar or cholesterol) [3,4]. For this type of food, its definition, functions and intended use are known and described in regulations that govern the issues related to it [5]. Concurrently, another group of food products has emerged – light foods and drinks, which are often alternately described by manufacturers as light, fit, figure, slim, fitness, 0% fat, and by their name suggesting that they are low energy density foods and are often identified with them. However, the actual energy content of these products may be entirely different than expected. When selecting a food product and assessing its nutritional value, not only the energy value but also the content of individual nutrients should be taken into account. The composition of the product should also be analysed for the content of additives or substitutes for substances naturally present in it, which not only have no nutritional value, but are sometimes suspected of having adverse effects and having a negative impact on health [6]. These are the reasons that should determine the choice of food products and the frequency of their consumption.

**AIM OF THE STUDY**

The main aim of the study was to assess the consumption frequency of light foods and drinks among adults. The specific aims concerned:

1) analysing the consumption frequency taking into account age, education and body weight;
2) identifying the motive to select light foods and drinks.

**INTRODUCTION**
The study was conducted personally among 203 adults living in Gliwice, Bytom and Zabrze, declaring the consumption of light foods and drinks. The research tool was the author's own survey questionnaire containing 37 closed, single-choice questions. The first part of the questionnaire was the so-called demographics. The main part included questions relating to the consumption frequency of light foods and drinks (including those described by the producers as fit, figure, slim, fitness, 0% fat), from individual product groups (cereal, dairy, fat products, sweets, drinks) and the motive to select this type of products. To assess the frequency of consumption, there were the following answer choices: daily, several times a week, several times a month, rarely, I don't consume.

The obtained results were stored in MS Excel. The respondents were divided into two age groups: 19–30 years of age (n = 120) and over 30 years of age (n = 83); three levels of education were also identified: vocational (n = 32), secondary (n = 88), higher (n = 83), and three ranges of body weight assessed on the basis of BMI: overweight (n = 18), normal body weight (n = 115) and over weight (n = 70). Statistical analysis was performed using Statistica 10.0. Cramér's V, the gamma rank correlation coefficient and Spearman's rank correlation coefficient were used to assess the relationship. The following ranges were used to assess the strength of the correlation:
- < 0 – 0.2 > – weak correlation
- 0.2 – 0.4 > – law correlation
- 0.4 – 0.7 > – moderate correlation
- 0.7 – 0.9 > – strong correlation
- 0.9–1 > – very strong correlation

The value of p < 0.05 was considered statistically significant for all the analyses.

RESULTS

Among all the respondents, 59% represented people from the 19–30 age group, the remaining 41% were over 30 years old. The highest number of people had secondary education (43%), then higher education (41%), while the lowest number of people had vocational education (16%). 57% of all the respondents had normal body weight, 34% were overweight and 9% were underweight.

The consumption frequency of light foods and drinks from individual product groups by all the respondents, including age, education level and body weight according to BMI values are shown in Tables I–V.

The respondents most often reported rare consumption of light cereal products, including a higher percentage of people over 30 years of age than in the age group of 19–30, with vocational education rather than higher and secondary education, and overweight rather than with normal body weight. The underweight respondents

1) analyses of frequency of consumption with regard to age, BMI and sex;
2) analyses of frequency of consumption with regard to age, BMI and sex;
3) analyses of frequency of consumption with regard to age, BMI and sex;
4) analyses of frequency of consumption with regard to age, BMI and sex;
5) analyses of frequency of consumption with regard to age, BMI and sex.

MATERIAL AND METHODS

Badania przeprowadzono osobiste wśród 203 dorosłych osób zamieszkałych na terenie miast Gliwice, Bytom i Zabrze, deklarujących spożycie produktów typu light. Narzędziem badawczym był autorski kwestionariusz ankiety zawierający 37 pytań zamkniętych jednokrotnego wyboru. Pierwszą część kwestionariusza stanowiła tzw. metryczka. W części właściwej znajdowały się pytania odnoszące się do częstości spożycia produktów typu light (w tym także opisywanych przez producentów jako produkty fit, figura, slim, fitness, 0% tłuszczu), z poszczególnych grup asortymentowych (produkty zbożowe, mleczne, tłuszcze, słodycze, napoje) oraz motyw recess wyboru tego typu produktów. Do oceny częstości spożycia wyodrębniono następujące warianty odpowiedzi: codziennie, kilka razy w tygodniu, kilka razy w miesiącu, rzadko, nie spożywam.

Uzyskane wyniki zgromadzono w programie MS Excel. Badane osoby zostały podzielone na dwie grupy wiekowe: 19–30 lat (n = 120) i powyżej 30 lat (n = 83); wyróżniono również trzy poziomy wykształcenia: zawodowe (n = 32), średnie (n = 88), wyższe (n = 83) oraz trzy zakresy masy ciała ocenianej na podstawie wskaźnika BMI: niedowaga (n = 18), prawidłowa masa ciała (n = 115) oraz nadwaga (n = 70). Analizę statystyczną przeprowadzono za pomocą programu Statistica 10.0. Do oceny zależności wykorzystano: współczynnik zależności V-Cramera, współczynnik korelacji rang gamman oraz współczynnik korelacji rang Spearmana. Do oceny siły korelacji przyjęto następujące przedziały:
- < 0 – 0.2 > – słaba korelacja
- 0.2 – 0.4 > – niska korelacja
- 0.4 – 0.7 > – umiarkowana korelacja
- 0.7 – 0.9 > – silna korelacja
- 0.9–1 > – bardzo silna korelacja

Dla wszystkich analiz za istotną statystycznie przyjęto wartość p < 0.05.

WYNIKI

Spośród wszystkich badanych 59% stanowiły osoby z grupy wiekowej 19–30 lat, pozostałe 41% to osoby powyżej 30 r.ż. Najwięcej osób legitymowało się wykształceniem średnim (43%), dalej wykształceniem wyższym (41%), natomiast najmniej wykształceniem zawodowym (16%). 57% spośród wszystkich uczestniczących w badaniu charakteryzowało się prawidłową masą ciała, 34% nadwagą, a 9% niedowagą. Częstość spożycia produktów typu light z poszczególnych grup asortymentowych przez wszystkich badanych łączne oraz z uwzględnieniem wieku, poziomu wykształcenia i masy ciała według wartości wskaźnika BMI przedstawiają tabele I–V.

MATERIAŁ I METODY
The respondents most often indicated that they consume these products several times a week (Tab. I).

Statistical analysis revealed a correlation (p < 0.05) between the consumption frequency of light cereal products and:
- age (r = -0.17; weak correlation)
- educational level (r = -0.05; weak correlation)
- body weight of respondents (r = -0.3; low correlation)

The respondents most often reported rare consumption of light dairy products, including a higher percentage of people over 30 years of age than in the age group of 19–30, with higher rather than vocational or secondary education and normal body weight rather than overweight. The underweight consumers equally often indicated that they consume these products rarely and several times a week (Tab. II).

Statistical analysis revealed a correlation (p < 0.05) between the consumption frequency of light dairy products and:
- age (r = -0.04; weak correlation),
- educational level (r = -0.12; weak correlation),
- body weight of respondents (r = -0.04; weak correlation).

The respondents most often declared that they do not consume light-type fat products, including a higher percentage of people over 30 years of age than in the 19–30 age group, with higher rather than vocational or secondary education and more often overweight than with normal body weight and underweight (Tab. III).

Statistical analysis revealed a correlation (p < 0.05) between the consumption frequency of light-type fat products and:
- age (r = -0.03; weak correlation),
- educational level (r = -0.21; low correlation),
- body weight of respondents (r = 0.07; weak correlation).

The respondents most often declared that they do not consume light sweets, including more respondents over 30 years of age in the 19–30 age group, with higher rather than vocational or secondary education and with normal body weight rather than underweight and overweight (Tab. IV).

Statistical analysis revealed a correlation (p < 0.05) between the consumption frequency of light sweets and:
- age (r = -0.13; weak correlation),
- educational level (r = -0.33; low correlation),
- body weight of respondents (r = 0.04; weak correlation).

The respondents most often indicated rare consumption of light drinks, including a higher percentage of people over 30 years of age than in the 19–30 age group, with higher rather than vocational or secondary education and overweight rather than with normal body weight and underweight. In the underweight group, the highest percentage was represented by respondents who do not consume light drinks (Tab. V).

Badani najczęściej wskazywali na rzadkie spożycie produktów zbożowych typu light, w tym większy odsetek osób powyżej 30 r.ż., w porównaniu z grupą 19–30 lat, z wykształceniem zawodowym w korelacji z wyższym i średnim oraz z nadwagą w porównaniu z prawidłową masą ciała. Konsumenci z niedowagą najczęściej spożywali te produkty kilka razy w tygodniu (tab. I).

Analiza statystyczna wskazała na występowanie korelacj (p < 0,05) pomiędzy częstością spożycia produktów zbożowych typu light oraz:
- wiekiem (r = -0.17; korelacja słaba),
- poziomem wykształcenia (r = -0.05; korelacja słaba),
- masą ciała badanych konsumentów (r = -0.3; korelacja niska).

Badane osoby wskazywały na rzadkie spożycie produktów mlecznych typu light, w tym więcej osób powyżej 30 r.ż. niż w przedziale wiekowym 19–30 lat, z wykształceniem wyższym niż zawodowym lub średnim oraz z prawidłową masą ciała niż nadwagą. Konsumenti z niedowagą również często jak pozostali wskazywali na spożywanie tych produktów rzadko oraz kilka razy w tygodniu (tab. II).

Analiza statystyczna wskazała na występowanie korelacji (p < 0,05) pomiędzy częstością spożycia produktów mlecznych typu light oraz:
- wiekiem (r = -0.04; korelacja słaba),
- poziomem wykształcenia (r = -0.12; korelacja słaba),
- masą ciała badanych konsumentów (r = -0.04; korelacja słaba).

Badani konsumenci najczęściej deklarowali, że nie spożywają produktów tłuszczowych typu light, w tym większy odsetek osób powyżej 30 r.ż. niż w przedziale wiekowym 19–30 lat, z wykształceniem wyższym niż zawodowym lub średnim oraz z nadwagą niż z prawidłową masą ciała i niedowagą (tab. III).

Analiza statystyczna wskazała na występowanie korelacji (p < 0,05) pomiędzy częstością spożycia produktów tłuszczowych typu light oraz:
- wiekiem (r = -0,03; korelacja słaba),
- poziomem wykształcenia (r = -0,21; korelacja niska),
- masą ciała badanych konsumentów (r = 0,07; korelacja słaba).

Badane osoby najczęściej deklarowały, że nie spożywają słodczych typu light, w tym więcej badanych powyżej 30 r.ż. niż z grupy wiekowej 19–30 lat, z wykształceniem wyższym niż zawodowym lub średnim oraz z nadwagą niż z prawidłową masą ciała i niedowagą (tab. IV).

Analiza statystyczna wskazała na występowanie korelacji (p < 0,05) pomiędzy częstością spożycia słodczych typu light oraz:
- wiekiem (r = -0,03; korelacja słaba),
- poziomem wykształcenia (r = -0,21; korelacja niska),
- masą ciała badanych konsumentów (r = 0,07; korelacja słaba).

Badane osoby najczęściej deklarowały, że nie spożywają napojów typu light, w tym większy odsetek osób
### Table I. Consumption frequency of light cereal products by age, education and body weight of respondents

| Features/Cechy | Consumption frequency of light cereal products indicated by respondents (%) |
|---------------|--------------------------------------------------------------------------|
|               | daily/ codziennie | several times a week/ kilka razy w tygodniu | several times a month/ kilka razy w miesiącu | rarely/ rzadko | i don’t consume/ nie spożywam |
| Age/Wiek:     |                |                                              |                                               |                  |                              |
| 19–30 years/lat | 9.2            | 25                                           | 20.8                                          | 38.3             | 6.7                           |
| > 30 years/lat  | 7.2            | 16.9                                         | 19.3                                          | 50.6             | 6.0                           |
| Education/Wykształcenie: |               |                                              |                                               |                  |                              |
| vocational/zawodowe | 15.6          | 9.4                                          | 25                                            | 50               | 0                             |
| secondary/srednie | 8              | 23.9                                         | 20.5                                          | 39.8             | 8                             |
| higher/wyzsze  | 6              | 24.1                                         | 18.1                                          | 44.6             | 7.2                           |
| Body weight according to BMI/ Masa ciała wg BMI: |               |                                              |                                               |                  |                              |
| underweight/niedowaga | 22.2          | 44.4                                         | 11.1                                          | 22.2             | 0                             |
| normal/prawidłowa | 4.3            | 21.7                                         | 27                                            | 43.5             | 3.5                           |
| overweight/nadwaga | 11.4           | 15.7                                         | 11.4                                          | 46.6             | 12.9                          |
| Total/Łącznie   | 8.4            | 21.7                                         | 20.2                                          | 43.3             | 6.4                           |

### Table II. Consumption frequency of light dairy products by age, education and body weight of respondents

| Features/Cecha | Consumption frequency of light dairy products indicated by respondents (%) |
|----------------|--------------------------------------------------------------------------|
|                | daily/ codziennie | several times a week/ kilka razy w tygodniu | several times a month/ kilka razy w miesiącu | rarely/ rzadko | i don’t consume/ nie spożywam |
| Age/Wiek:      |                |                                              |                                               |                  |                              |
| 19–30 years/lat | 9.2            | 21.7                                         | 23.3                                          | 38.3             | 7.5                           |
| > 30 years/lat  | 8.4            | 25.3                                         | 14.5                                          | 43.4             | 8.4                           |
| Education/Wykształcenie: |               |                                              |                                               |                  |                              |
| vocational/zawodowe | 15.6          | 18.8                                         | 28.1                                          | 28.1             | 9.4                           |
| secondary/srednie | 8              | 29.5                                         | 14.8                                          | 38.6             | 9.1                           |
| higher/wyzsze  | 7.7            | 18.1                                         | 21.7                                          | 47.0             | 6.0                           |
| Body weight according to BMI/ Masa ciała wg BMI: |               |                                              |                                               |                  |                              |
| underweight/niedowaga | 16.7          | 33.3                                         | 11.1                                          | 33.3             | 5.6                           |
| normal/prawidłowa | 7.8            | 20.9                                         | 20.9                                          | 42.6             | 7.8                           |
| overweight/nadwaga | 8.6            | 24.3                                         | 20.0                                          | 38.6             | 8.6                           |
| Total/Łącznie   | 8.9            | 23.2                                         | 19.7                                          | 40.4             | 7.9                           |

### Table III. Consumption frequency of light-type fat products by age, education and body weight of respondents

| Cecha            | Consumption frequency of light-type fat products indicated by respondents (%) |
|------------------|--------------------------------------------------------------------------|
|                  | daily/ codziennie | several times a week/ kilka razy w tygodniu | several times a month/ kilka razy w miesiącu | rarely/ rzadko | i don’t consume/ nie spożywam |
| Age/Wiek:        |                |                                              |                                               |                  |                              |
| 19–30 years/lat  | 0.8            | 6.7                                         | 11.7                                          | 35.8             | 45.0                          |
| > 30 years/lat   | 3.6            | 7.2                                         | 8.4                                           | 32.5             | 48.2                          |
| Education/Wykształcenie: |               |                                              |                                               |                  |                              |
| vocational/zawodowe | 3.1            | 12.5                                        | 18.8                                          | 21.9             | 43.8                          |
| secondary/srednie | 3.4            | 9.1                                         | 8.0                                           | 38.6             | 40.9                          |
| higher/wyzsze    | 2.4            | 0                                           | 9.7                                           | 34.9             | 53.0                          |
| Body weight according to BMI / Masa ciała wg BMI: |               |                                              |                                               |                  |                              |
| underweight/niedowaga | 0              | 22.2                                        | 16.7                                          | 16.7             | 44.4                          |
| normal/prawidłowa | 1.7            | 3.5                                         | 11.3                                          | 36.3             | 45.2                          |
| overweight/nadwaga | 2.9            | 8.6                                         | 7.1                                           | 32.9             | 48.6                          |
| Total/Łącznie    | 2.0            | 6.9                                         | 10.3                                          | 34.5             | 46.3                          |
### Table IV. Consumption frequency of light sweets by age, education and body weight of respondents

| Features/Cecha                  | Consumption frequency of light sweets indicated by respondents (%) |
|--------------------------------|---------------------------------------------------------------|
|                                | daily/ codziennie | several times a week/kilka razy w tygodniu | several times a month/kilka razy w miesiącu | rarely/ rzadko | i don't consume/ nie spożywam |
| Age/Wiek:                      |                  |                                             |                                             |                |                                |
| 19–30 years/lat                | 0.8              | 5.0                                          | 10.0                                         | 33.3           | 50.8                           |
| > 30 years/lat                 | 1.2              | 9.6                                          | 3.6                                          | 25.3           | 60.2                           |
| Education/Wykształcenie:       |                  |                                             |                                             |                |                                |
| vocational/zawodowe            | 3.1              | 6.3                                          | 21.9                                         | 34.4           | 34.4                           |
| secondary/średnie              | 1.1              | 10.2                                         | 4.5                                          | 31.8           | 52.3                           |
| higher/wyższe                  | 3.6              | 4.8                                          | 4.8                                          | 26.5           | 65.1                           |
| Body weight according to BMI/Masa ciała wg BMI: |                  |                                             |                                             |                |                                |
| underweight/niedowaga          | 0                | 5.6                                          | 11.1                                         | 33.3           | 50.0                           |
| normal/prawidłowa              | 0.9              | 5.2                                          | 7.8                                          | 29.6           | 56.5                           |
| overweight/nadwaga             | 1.4              | 10.0                                         | 5.7                                          | 30.0           | 52.9                           |
| Total/Łącznie                  | 1.0              | 6.9                                          | 7.4                                          | 30.0           | 54.7                           |

### Table V. Consumption frequency of light drinks by age, education and body weight of respondents

| Cecha                         | Consumption frequency of light drinks indicated by respondents (%) |
|-------------------------------|---------------------------------------------------------------|
|                               | daily/ codziennie | several times a week/kilka razy w tygodniu | several times a month/kilka razy w miesiącu | rarely/ rzadko | i don't consume/ nie spożywam |
| Age/Wiek:                     |                  |                                             |                                             |                |                                |
| 19–30 years/lat               | 3.3              | 10.8                                         | 26.7                                         | 33.3           | 25.8                           |
| > 30 years/lat                | 2.4              | 8.4                                          | 12.0                                         | 50.6           | 26.5                           |
| Education/Wykształcenie:      |                  |                                             |                                             |                |                                |
| vocational/zawodowe           | 12.5             | 12.5                                         | 28.1                                         | 25.0           | 21.9                           |
| secondary/średnie             | 2.3              | 11.4                                         | 19.3                                         | 40.9           | 26.1                           |
| higher/wyższe                 | 0                | 7.2                                          | 19.3                                         | 45.8           | 27.7                           |
| Body weight according to BMI/Masa ciała wg BMI: |                  |                                             |                                             |                |                                |
| underweight/niedowaga         | 0                | 11.1                                         | 22.2                                         | 27.8           | 38.9                           |
| normal/prawidłowa             | 2.6              | 10.4                                         | 20.0                                         | 40.0           | 26.1                           |
| overweight/nadwaga            | 4.3              | 8.6                                          | 20.0                                         | 44.3           | 22.9                           |
| Total/Łącznie                 | 3.0              | 9.9                                          | 20.7                                         | 40.4           | 26.1                           |

Statistical analysis revealed a correlation (p < 0.05) between the consumption frequency of light drinks and:
- age (r = -0.17; weak correlation),
- educational level (r = -0.19; weak correlation),
- body weight of respondents (r = -0.06; weak correlation).

The motives for reaching for light foods and drinks, which were most often mentioned by respondents, were the encouraging effect of advertising (40.4% of respondents) and willingness to take care of a healthy/slim body (33.5% of respondents). Other motives include encouragement to consume light foods and drinks by family/friends (12.8% of respondents) or doctor/dietitian (3.9% of respondents) and others, among which curiosity and lower energy content were most often mentioned (9.4% of respondents) (Fig. 1).
In spite of the increasing production and assortment of light foods and drinks, often identified with low energy density foods, both the results of the author’s own research and those of other authors [6,7] indicate a low interest in products from this group. The analysis of the results of the author’s own research has revealed that dairy products are the most frequently consumed light foods. Similar results were obtained by Wierzbicka et al., who evaluated the consumption of low-energy foods by 130 women with a BMI above 25. As their results demonstrated, milk, yoghurt and cheese were the most frequently consumed light foods, eaten by 42%, 35% and 28% of the surveyed women respectively [8]. Similar conclusions were also drawn by Flaczyk et al., who found that yoghurts were the most frequently consumed light foods [9], and Całyniuk et al., who stated that the most often consumed light foods by Silesian voivodeship residents were dairy products [6]. Also the results of the study conducted by Babicz-Zielińska, who assessed consumer attitudes towards novel foods, indicate the high consumption of low-fat dairy products [10]. Similar results were also obtained by Zandstra et al., who measured the impact of health and taste preferences on the consumption of foods with reduced and increased fat content among 132 adults in the Netherlands. The authors of the study indicated a great interest in light dairy products and related higher consumption than products with a regular fat content [11]. Summing up the performed analyses, it may be assumed that the reason for the frequent choice of light foods and drinks, often identified with low energy density foods, both the results of the author’s own research and those of other authors [6,7] indicate a low interest in products from this group. The analysis of the results of the author’s own research has revealed that dairy products are the most frequently consumed light foods. Similar results were obtained by Wierzbicka et al., who evaluated the consumption of low-energy foods by 130 women with a BMI above 25. As their results demonstrated, milk, yoghurt and cheese were the most frequently consumed light foods, eaten by 42%, 35% and 28% of the surveyed women respectively [8]. Similar conclusions were also drawn by Flaczyk et al., who found that yoghurts were the most frequently consumed light foods [9], and Całyniuk et al., who stated that the most often consumed light foods by Silesian voivodeship residents were dairy products [6]. Also the results of the study conducted by Babicz-Zielińska, who assessed consumer attitudes towards novel foods, indicate the high consumption of low-fat dairy products [10]. Similar results were also obtained by Zandstra et al., who measured the impact of health and taste preferences on the consumption of foods with reduced and increased fat content among 132 adults in the Netherlands. 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dairy products may be their high availability. The more frequent preference for low-fat dairy products may also be associated with the fact that many scientific studies indicate a reduced risk of cardiovascular diseases when consuming dairy products with a lower fat content [12,13].

According to the study by Calygniak et al., light sweets and snacks are consumed by 17.3% of respondents [6], in the author's own research the total percentage is 45.3%, with these products more often used by respondents between 19 and 30 years of age, with vocational education, and rarely by people over 30, with higher education. Different results were obtained by Jeżewska-Zychowicz et al., whose study was aimed, among others, at assessing the interest of respondents in sweets with special health properties. In the authors' opinion, light sweets were more frequently consumed by respondents up to the age of 44, and rarely by people with vocational and primary education [14].

The data obtained as a result of analysis of the author's own research indicate that the main motive for choosing light foods and drinks was advertising (40.4% of responses) and willingness to take care of a healthy/slim body (33.5% of responses). Similar results were obtained by Kubiak et al., according to which 48% of respondents indicated that food products are the goods most often chosen under the influence of advertising [15]. Slightly different results were obtained by Fortuna et al. because the first group (diabetics), when choosing light waffles, was guided mainly by health reasons (about 55%), whereas the second group (healthy, young people) consumed light waffles under the influence of friends or out of curiosity, 35% and 40% of respondents respectively [16]. In the study by Szczepańska et al., who evaluated the factors determining the choice of instant products by 395 university students, it was found that in the case of this group of products, advertising was the factor most often identified by the respondents as irrelevant [17]. Similarly, a study by Dąbrowska et al., whose aim was to determine the level of knowledge of new generation foods as well as behaviours in relation to these products among 210 randomly selected people of both sexes, revealed that 31% of respondents indicated health related aspects, while 18.1% pointed to sensory qualities. Among those who indicated health related aspects, 38.7% had higher education [18].

In addition to the obvious advantages of consuming functional food, and thus also low energy density foods, another aspect should be considered. Functional foods are often confused or identified with light foods and drinks and products described by manufacturers using the substitute of the term "light". Although the consumption of light foods and drinks is not high, as indicated by our own research and the research of the aforementioned authors, taking into account the fact that potential consumers may not be only healthy people, but also obese or diabetic persons, it should be stated that it is necessary to conduct broadly understood individual and group nutrition education related to the presence of this type of food on the market.

smakowych na konsumpcję żywności z obniżoną i podwyższoną zawartością tłuszczu wśród 132 dorosłych osób w Holandii. Autorzy badania wykazali duże zaинтересowanie produktami mlecznymi typu light i ich większe spożycie, niż produktów z tradycyjną ilością tłuszczu [11]. Podsumowując dokonane analizy, można domniemywać, iż przyczyną częstszego wybierania produktów mlecznych typu light może być ich duża dostępność, a także fakt, iż wiele badań naukowych wskazuje na zmniejszenie ryzyka zachorowalności na choroby sercowo-naczyniowe dzięki ich spożyciu [12,13]. Według badania Calygniak i wsp. słodycze oraz przekąski typu light spożywa 17.3% badanych osób [6]; w badaniach własnych odsetek ten wynosił łącznie 45.3%, przez czyn po produkty te częściej sięgali badani między 19 a 30 rokiem życia z wykształceniem zawodowym, a najrzadziej osoby po 30 r.ż. z wykształceniem wyższym. Odmienne wyniki otrzymali Jeżewska-Zychowicz i wsp., którzy za cel badań przyjęli m.in. ocenę zainteresowania badanymi słodyczami ze specjalnymi właściwościami zdrowotnymi. W opinii autorów po słodycze typu light częściej sięgali badani do 44 r., a najrzadziej osoby z wykształceniem zawodowym i podstawowym [14].

Dane uzyskane w wyniku analizy badań własnych wskazują, że głównym motywem siegania po produkty typu light były reklama (40.4% odpowiedzi) oraz chęć dbania o zdrowie/sylwetkę (33.5% odpowiedzi). Podobne wyniki otrzymali Kubiak i wsp. Spośród badanych przez nich osób – 48% wskazało, że produktami najczęściej wybieranymi pod wpływem reklamy są artykuły spożywcze [15]. Nieco odmienne wyniki otrzymali Fortuna i wsp., gdy w pierwszej z badanych przez nich grup (osoby chore na cukrzycę), wybierając wafle typu light, kierowały się głównie względami zdrowotnymi (ok. 55%), natomiast w drugiej grupie (zdrowe, młode osoby) spożywano wafle typu light pod wpływem chęci znajomości lub z ciekawości, odpowiednio 35% i 40% badanych [16]. W badaniach Szczepańskiej i wsp., oceniając czynniki determinujące wybór produktów typu instant przez 395 studentów uczelni wyższych, wykazano, iż w przypadku tej grupy produktów czynnikiem najczęściej uznawanym za bez znaczenia była reklama [17]. Podobnie w badaniu Dąbrowskiej i wsp., którego celem było określone stopnia znajomości żywności nowej generacji oraz zachowań w odniesieniu do tych produktów wśród 210 losowo wybranych osób obywateli płci, wykazano, iż 31% badanych wskazało na względę zdrowotne, natomiast 18.1% na walory sensoryczne. Spośród osób, które wskazały aspekty zdrowotne, 38,7% legitymowało się wykształceniem wyższym [18].

Oprócz niewątpliwych zalet wynikających ze spożywania żywności funkcjonalnej, a co za tym idzie również produktów o obniżonej wartości energetycznej, należy zwrócić uwagę na inny aspekt. Żywność funkcjonalna często jest mylona bądź też utożsamiana z żywnością typu light i produktami opiswanymi przez producentów przy użyciu synonimu określenia light. Choć spożycie produktów typu light nie jest wysokie, na co
CONCLUSIONS

1. Among adult respondents, the consumption of fast food is rare, and the most frequently indicated motive for its consumption is encouragement by advertising and care for a healthy/slim body.

2. There was a weak or low correlation between the consumption frequency of light foods and age, education and body weight of the respondents.

3. It seems necessary to provide nutrition education from an early age, especially among children and adolescents, and to continue it with adults.

REFERENCES

1. Świderski F., Kolanowski W. Żywność funkcjonalna i dietetyczna. W: Žywność wygodna i żywność funkcjonalna. Red. F. Świderski. Warszawa 2003: 27–31.

2. Diet, nutrition and the prevention of chronic diseases: report of a joint WHO/FAO expert consultation. WHO Technical Report Series 916, Geneva 2003.

3. Grajota H. Żywność funkcjonalna w profilaktyce chorób układu krążenia. Adv. Clin. Exp. Med. 2004; 13(3): 503–510.

4. Flaczyk E., Kobus J., Korczak J. Assessment of consumption of “light” food enterprises, Inc. USA 2015: 59–66.

5. Rozporządzenie Parlamentu Europejskiego i Rady nr 1333/2008 z dnia 16 grudnia 2008 roku w sprawie dodatków do żywności, https://eur-lex.europa.eu/legal-content/pl/TXT/?uri=CELEX:32008R1333 [dostęp: 11.05.2016].

6. Łukaszczyk G., Szmulowicz J., Wilczek J., Wójcik-Kurowska E., Wierzbicka E., Kochańska A. Spożycie produktów o obniżonej wartości energetycznej w wybranej grupie kobiet. Żyw. Człow. Met. 2007; 34(1–2): 204–208.

7. Świszcz L., Daniełowicz D., Orlik A., Rzewuski J., Wiśniewski R. Postawy konsumentów wobec nowej żywności. Zeszyty Naukowe Akademii Morskiej w Gdyni 2010; 65: 16–22.

8. Rozwijać ma się spożywanie żywności nowej generacji. Hygeia Public Health 2011; 46(1): 39–46.

9. Flaczyk E., Kobus J., Korczak J. Assessment of consumption of “light” food enterprises, Inc. USA 2015: 59–66.

10. Babicz-Zielinska E. Postawy konsumentów wobec nowej żywności. Żywność, wygodna i żywność funkcjonalna. Red. F. Świderski. Wydawnictwo Naukowo-Techniczne. Warszawa 2003: 27–31.

11. Zandstra E., de Graaf C., Van Staveren W. Influence of health and taste attitudes on consumption of low – and high – fat foods. Food Quality and Preference 2001; 12(1): 75–82, doi: 10.1016/S0950-3293(00)00032-X.

12. Gopinath B., Flood V.M., Wang J.J., Barbatsis G., Mitchell P. Lower dairy products and calcium intake is associated with adverse retinal vascular changes in older adults. Nutr. Metab. Cardiovasc. Dis. 2014; 24(2): 155–161, doi: 10.1016/j.numecd.2013.06.009.

13. Toledo E., Delgado-Rodriguez M., Estruch R., Salas-Salvado J., Corella D., Gomez-Gracia E., Fiol M., Ros E., Ruiz-Gutierrez V., Lapetra J., Conde-Herrera M., Saez G., Vinyoles E., Martinez-Gonzalez M.A. Low-fat dairy products and blood pressure: follow-up of 2290 older persons at high cardiovascular risk participating in the PREDIMED study. Br. J. Nutr. 2009; 101(1): 59–67, doi: 10.1017/S0007114508981496.

14. Jezewska-Zychowiec M., Jezewski M., Kosicka-Gębska M. Funkcjonalność słodyczy w opinii konsumentów. Bromat. Chem. Toksykol. 2011; 44(3): 995–998.

15. WNIOSKI

1. Wśród ankietowanych osób dorosłych spożycie żywności typu light jest rzadkie, przy czym najczęściej wskazywanym motywem jej spożywania jest zachęcenie przez reklamę oraz dbałość o zdrowie/sylwetkę.

2. Stwierdzono występowanie słabej lub niskiej korelacji pomiędzy częstością spożycia żywności typu light oraz wiekiem, wykształceniem i masą ciała badanych osób.

3. Konieczne wydaje się prowadzenie edukacji żywniowej od najmłodszych lat, szczególnie wśród dzieci i młodzieży, oraz kontynuowanie jej wśród osób dorosłych.