

закордонним аналогам. Крейди волчеяровського і новгород-сіверського родовищ переважають їх, оскільки мають вищу і більш однорідну дисперсність. Частинки осадової крейди переважно мають кубічну форму або форму паралелепіпеда зі співвідношенням довжини до ширини від 1:1 до 1:2÷5.

Встановлено, що в складі вітчизняних крейд присутні кальцити, доломітизовані кальцити та арагоніти. Аналогічні мінерали фіксуються і в складі турецьких кальцитів.

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**Аршинніков Дмитро Ігорович**, здобувач, кафедра хімічної технології композиційних матеріалів, Національний технічний університет України "Київський політехнічний інститут", пр. Перемоги, 37, м. Київ, Україна, 03056  
E-mail: igorkm@ukr.net

**Свідерський Валентин Анатолійович**, доктор технічних наук, завідувач кафедри, професор, кафедра хімічної технології композиційних матеріалів, Національний технічний університет України "Київський політехнічний інститут", пр. Перемоги, 37, м. Київ, Україна, 03056  
E-mail: xtum@Dkpi.ua

УДК 613.3:633.6

DOI: 10.15587/2313-8416.2015.48285

## GUIDELINES FOR DEVELOPING HEALTHY NUTRITION IN BUSINESS HOTEL

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*Developing healthy food in the business hotel is an integral part of the overall concept. Using natural ingredients with predicted physiological effect allows creating technology of products with higher biological value. The using of alternative products allows making dishes with preventive properties*

**Keywords:** health nutrition, lipotropic, antiatherosclerotic, people with mental activity, artichoke, avocado, quail eggs, diets

*Розробка здорового харчування в готелі бізнес класу є невід'ємною частиною загальної концепції. Використання натуральних інгредієнтів з прогнозуванням фізіологічного ефекту дозволяє створювати технології продуктів з високою біологічною цінністю. Використання альтернативних продуктів дозволяє зробити страви з профілактичними властивостями*

**Ключові слова:** здорове харчування, ліпотронні, антиатеросклеротичні, люди з ментальною діяльністю, артишок, авокадо, перепелині яйця, дієти

### 1. Introduction

Investigation of the target audience such as businessmen connected with high mental activity, improper nutrition, and way of living, shortage of time. It turns to several problems with linked chain of diseases.

The nutrition of people with mental activity is required components that have lipotropic and antiathero-

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Дата надходження рукопису 23.07.2015

sclerotic properties. The amino acid methionines including lipotropics prevent fatty liver disease.

### 2. Problem formulation

People with mental activity, connected with job like administrators, businessmen, bankers' characterized by low physical activity and often high mental stress. In

general, mental work and poor muscle load during off-duty time cause energy consumption in 2300–2400 kcal per day. Insufficient muscular load in a refined high-calorie food, even when it exceeds 100–200 kcal energy expenditure, inevitably leads to a progressive weight increase and development of atherosclerotic lesions in body. The sedentary lifestyle significantly reduces the perfection of regulation energy balance: the appetite poorly responds to changes in energy expenditure. This explains the accumulation of "extra" kilos with a decrease in motor activity in middle age [1, 2].

All businessmen are engaged brainwork, that's why the body needs vitamins, which stimulate redox reaction. This property is possessed almost all vitamins, especially B<sub>2</sub>, B<sub>6</sub>, C, P, PP. No less importance is vitamins which have hypolipidemic and antiatherosclerotic effect of choline, inositol and vitamins E, F, B<sub>12</sub> and folic acid.

#### Nutrition tips for target group of businessman.

There are some food habits which contribute to body shape and health consequences such as high blood cholesterol, high blood pressure and elevated insulin levels. Among them breakfast skipped in place of coffee, no food until early afternoon, where high-fat, fast-food options are chosen, followed by a large meal consumed late in the evening. Fruit and other nutritious snacks are uncommon (Table 1).

For example, monounsaturated fats from plant oils like canola oil, peanut oil, and olive oil, as well as avocados, nuts (like almonds, hazelnuts, and pecans), and seeds (such as pumpkin, sesame). Polyunsaturated fats, including Omega-3 and Omega-6 fatty acids, found in fatty fish such as salmon, herring, mackerel, anchovies,

sardines, and some cold water fish oil supplements. Other sources of polyunsaturated fats are unheated sunflower, corn, soybean, flaxseed oils, and walnuts [3, 4].

Table 1

#### Top food choices for businessmen

Common choice	Better choice
Large regular flat white	Large skim latte
Bacon and egg roll	Thick fruit yogurt
Banana bread	Lamb salad
Caesar salad	Chicken and salad wrap
Chicken schnitzel	Steak sandwich
Fish and chips	Salmon and salad
Pad Thai	Sushi
Packet of chips	Nut muesli bar
Four sweet biscuits	Protein bar

Thus, in intellectual work and sedentary lifestyle nutrition should be moderately restricted, vegetable-dairy, rich in fiber and vitamins. According "About the statement of Norm's physiological needs of the population of Ukraine for the main feedstuffs and energy", it should noting that index of physical activity for businessmen is 1,4 (Table 2).

The average age of businessmen in Ukraine is 30 years. That's why use indexes for 30–39 years old men (Table 3).

As we know, each foodstuff consists of fat, protein, carbohydrates, vitamins and minerals. Table 4 shows specific foods that should include in ration of the investigated segment.

Table 2

#### Index of recalculation of daily energy consumption

Groups of work intensity	The index of physical activity	Age (years)	Energy (kilocalories)	Proteins (grams)		Fats (grams)	Carbohydrates (grams)
				in total	animal fats		
Businessmen	1.4	18–29	2450	67	37	68	392
		30–39	2300	63	35	64	368
		40–59	2100	58	32	58	336

Table 3

#### Daily requirements for 30–39 years old businessmen

Nutrients	Daily requirement	Control sample		Research sample	
		In fact	%	In fact	%
Proteins (g)	63	14,92	23,6	16,33	25,92
Fats (g)	64	59,494	92,9	30,989	48,42
Carbohydrates (g)	368	20,45	5,55	18,965	5,1
Vitamin A (mcg)	1000	0,64	0,064	3,632	0,36
Vitamin PP (mg)	22	1,149	5,2	2,48	11,27
Vitamin E (mg)	15	1,126	7,5	1,896	7,5
Vitamin B1(mg)	1,6	0,2	12,5	0,53	33,1

Table 4

Daily need for adult population in essential nutrients (for men)		
Organ systems	Nutrients	Source (products)
Circulatory system	Vit. C, Vit. E, Vit. A, Vit. B <sub>1</sub> , Vit. B <sub>2</sub> , Vit. B <sub>6</sub> , Selenium, Zinc, Magnesium, Potassium, Niacin	Liver, heart, egg yolk, milk, yeast extract, wheat germ, wheat bran, soy beans, broccoli, spinach, fresh fruits, vegetables, herbs, rose hips, buckthorn, black currant, red pepper
Digestive system	Vit. PP, Vit. B <sub>1</sub>	Dry yeast, bread, peas, cereals, walnuts, peanuts, bran
Endocrine system	Vit. A, Vit. B, Vit. C, Vit. E, Iodine	Butter, cheese, eggs, liver, fish fat
Exocrine system	Vit. B, Vit. C, Vit. E	Vegetable oils, cereal, beans, Brussels sprouts, broccoli, berries, rose hips, sea buckthorn, green leaf vegetables, cherry, mountain ash, apple and pear seeds, sunflower seeds, peanuts, almonds
Genitourinary system	Vit. C, Vit. E, Vit. A, Potassium, Selenium, Magnesium and Chromium	Spinach, fresh fruits, vegetables, herbs, rose hips, buckthorn, black currant, red pepper
Immune system	Vit. C, Vit. E, Vit. A, Vit. P, Vit. B <sub>9</sub>	Nuts, green leafy vegetables, beans, wheat germ, bananas, oranges, melons, onions, apricots, avocados
Integumentary system	Vit. E, Vit. A, Vit. B, Vit. P, Vit. D, Vit. H, Vit. PP.	Cherry, mountain ash, apple and pear seeds, sunflower seeds, peanuts, almonds, broccoli
Musculoskeletal system	Vit. A, Vit. C, Vit. D	Mountain ash, apple and pear seeds, sunflower seeds, peanuts, almonds
Nervous system	Vit. A, Vit. B <sub>1</sub> , Vit. B <sub>3</sub> , Vit. B <sub>6</sub> , Vit. B <sub>12</sub> , Vit. D	Spinach, fresh fruits, vegetables, herbs, rose hips, buckthorn, black currant, red pepper
Respiratory system	Vit. A, Vit. B <sub>1</sub> , Vit. B <sub>2</sub> , Vit. B <sub>9</sub> , Vit. B <sub>12</sub> .	Nuts, green leafy vegetables, beans, wheat germ
Circulatory system	Vit. C, Vit. E, Vit. A, Vit. B <sub>1</sub> , Vit. B <sub>2</sub> , Vit. B <sub>6</sub> , selenium, zinc, magnesium, potassium, niacin.	Liver, heart, egg yolk, milk, yeast extract, wheat germ, wheat bran, soy beans, broccoli, spinach, fresh fruits, vegetables, herbs, rose hips, buckthorn, black currant, red pepper
Digestive system	Vit. PP, Vit. B <sub>1</sub>	Dry yeast, bread, peas, cereals, walnuts, peanuts, bran
Endocrine system	Vit. A, Vit. B, Vit. C, Vit. E, Iodine.	Butter, cheese, eggs, liver, fish fat
Exocrine system	Vit. B, Vit. C, Vit. E.	Vegetable oils, cereal, beans, Brussels sprouts, broccoli, berries, rose hips, sea buckthorn, green leaf vegetables, cherry, mountain ash, apple and pear seeds, sunflower seeds, peanuts, almonds
Genitourinary system	Vit. C, Vit. E, Vit. A, Potassium, Selenium, Magnesium and Chromium.	Spinach, fresh fruits, vegetables, herbs, rose hips, buckthorn, black currant, red pepper
Immune system	Vit. C, Vit. E, Vit. A, Vit. P, Vit. B <sub>9</sub>	Nuts, green leafy vegetables, beans, wheat germ, bananas, oranges, melons, onions, apricots, avocados
Integumentary system	Vit. E, Vit. A, Vit. B, Vit. P, Vit. D, Vit. H, Vit. PP.	Cherry, mountain ash, apple and pear seeds, sunflower seeds, peanuts, almonds, broccoli
Musculoskeletal system	Vit. A, Vit. C, Vit. D.	Mountain ash, apple and pear seeds, sunflower seeds, peanuts, almonds
Nervous system	Vit. A, Vit. B <sub>1</sub> , Vit. B <sub>3</sub> , Vit. B <sub>6</sub> , Vit. B <sub>12</sub> , Vit. D.	Spinach, fresh fruits, vegetables, herbs, rose hips, buckthorn, black currant, red pepper
Respiratory system	Vit. A, Vit. B <sub>1</sub> , Vit. B <sub>2</sub> , Vit. B <sub>9</sub> , Vit. B <sub>12</sub>	Nuts, green leafy vegetables, beans, wheat germ

### 3. Literature review

An important contribution to the development of the theory nutrition of people with mental activity carried out by scientists I. Berytashvili, P. Karpenko, V. Korzun, M. Kravchenko, M. Peresichnyia, J. Trachtenberg, G. Rudavska, V. Tsypryan, D. Carroll, H. Hesecker, E. Huskisson, F. Larson et al. [5–7].

According to research V. Moskalenko recent decades significantly disrupted the structure of Ukrainian food. There are significant deviations from the formula of a balanced diet in terms of consumption of vitamins,

macro- and micronutrients, biologically active substances, which play an important role in maintaining normal metabolism.

V. Smolar said that the present socio-economic conditions cause most people's diet to be characterized by lack of animal protein, deficiency of vitamins, macro- and micronutrients, and is mostly fat-carbohydrate.

Noted food writer Gaylord Hauser once said of it: "In this single delectable fruit are combined the protein of meat, the fat of butter [but much more wholesome!], the vitamins and minerals of green vegetables, the flavor

of nuts, a six course dinner". America's greatest plant explorer, David Fairchild is attributed "...the avocado is a food without rival among the fruits, the veritable fruit of paradise." And in 1959, cereal pioneer John H. Kellogg maintained that "of all edible fruits, it stands pre-eminent as a source of concentrated nutriment adapted to human use. For purity, wholesomeness, ease of digestibility, and adaptation to human needs, it has few rivals and none that can fill its place [8, 9].

Avocado oil has several culinary and health benefits. The greater use of whole fruit has important advantages: usefulness in human weight control, high nutritional density, source of major antioxidants, stroke prevention, fruit protein source, fiber source; as baby food, and other dietary benefits. Like olive oil, avocado oil is predominantly monounsaturated, a property which is thought to confer distinct health benefits. The avocado as a refined cooking oil has additional advantages (Swisher, 1988).

Avocado oil withstands a high cooking temperature before breaking down, i. e. its "smoke point" is about 255C (490F), which is much higher than that of olive oil. Fried foods presently have an undesirable health reputation, but use of olive and avocado oil could change that. Contrary to popular assumptions, the avocado can be a helpful part of a successful weight-management program for businessman.

**Jerusalem Artichokes: Health Benefits & Nutritional Properties.** Jerusalem artichokes contain plenty of insulin, a type of prebiotic fiber that has been credited with a number of health benefits due to its medicinal properties. Many of these health effects can be attributed to the ability of insulin to stimulate the growth of bifid bacteria. Naturally present in the large intestine, bifid bacteria fight harmful bacteria in the intestines, prevent constipation, and give the immune system a boost. Furthermore, evidence indicates that bifid bacteria help reduce intestinal concentrations of certain carcinogenic enzymes [10].

*Health benefits of Jerusalem artichoke.* Jerusalem artichoke is moderately high in calories; provides about 73 calories per 100 g, roughly equivalent to potatoes. The root has negligible amounts of fat and contains zero cholesterol. Nevertheless, its high-quality phyto-nutrition profile comprises of dietary fiber (non-starch carbohy-

drates), and antioxidants, in addition to small proportions of minerals, and vitamins [11].

It is one of the finest source of dietary fibers, especially high in oligo-fructose insulin, which is a soluble non-starch polysaccharide. The tuber contains small amounts of anti-oxidant vitamins such as vitamin C, vitamin A, vitamin E. These vitamins, together with flavonoids compound like carotenes, helps scavenge harmful free radicals, and thereby offers protection from cancers, inflammation and viral cough and cold [5, 6].

In conclusion it is worth, that symptoms of fatigue, memory loss, lack of concentration and feeling "brain dead" are increasingly common in a busy, overscheduled society, yet good nutrition is often overlooked as possibly the easiest way to help prevent and manage such symptoms. Too frequently, stimulants such as caffeine and sugar are relied upon to get through times of low energy, which is probably the worst thing businessmen can do.

Finally, eat plenty of fruit and brightly colored vegetables every day. The antioxidants, vitamins and minerals play a crucial role in protecting brain cells from the day-to-day damage that accompany busy lifestyles. In practical terms, such recommendations mean making smarter food choices on a daily basis. Instead of snacking on high-sugar biscuits, snack bars and juices, make an effort to keep nuts and fresh fruit on hand at all times. For businessmen, this may mean carrying extra food with you while travelling, as such provisions can be challenging to find at hotels and airports [8].

For office workers, steering away from heavy noodles and fried foods in favour of salads teamed with lean red meat or oily fish, such as tuna or salmon, is likely to prevent the 4pm brain freeze. If this sounds even remotely familiar, perhaps it is time you started putting your own nutritional needs first and sat down to a nutrient-rich lunch to help your brain.

#### 4. Developing food technology for businessmen nutrition

For providing daily requirement for scarce nutrients it was provided technology of dish «Eggs Baked in a Crunchy Potato Crust with Parmesan-Onion» (Table 5) [9]. Developing of recipe was adopted to the target group of businessmen.

Table 5

Ingredients for developed dish

№	The name of raw materials	Weight of raw products, g		Standard documentation regulating requirements to quality of raw materials
		Gross	Net	
1	Artichoke	95	80	GOST 32790-2014. Fresh artichoke.
2	Butter	10	10	GOST R 52969-2008. Butter.
3	Avocado	65	50	GOST P 54689-2011. Avocado fresh fruits.
4	Onion	35	30	GOST 3234-95. Fresh onion.
5	Heavy cream	30	30	GOST P 52091-2003 drinking, heavy cream.
6	Salt	5	5	DSTU 3583: 97 Salt.
7	Pepper	5	5	GOST 29050-91 Spices. Black pepper and white. technical conditions
8	Parmesan cheese	30	30	TU 300061219.021-2009 Cheese" CLASSIC PARMESAN "
9	Quail eggs	3	3	GOST P 53404-2009 of food Eggs.
Weight of a semi-finished product, g			250	
Weight of finished dish, g			250	

According this for new innovative recipe «Baked Eggs in a Crunchy Jerusalem Artichokes Crust» the new technology of cooking:

1. Preheating the oven to 230 °C and spraying 4–8-ounce ramekins with cooking spray.

2. For the crusts: placing the 27 % of shredded artichoke in a clean dishtowel and squeeze out as much moisture as possible (this can be done in a few batches, if necessary). Toss with the melted butter (4 %).

3. Divide the artichoke mixture evenly among the four prepared ramekins and press the mixture into the bottom and up the sides to form a crust with an even thickness. Bake in the preheated oven for 30 to 35 minutes, until beginning to brown and crisp. Remove from the oven and reduce the heat to 200 °C.

4. For the filling: heating a large skillet over medium-high heat. Adding the avocado (20 %). When the butter is melted, adding the onions (12 %) and cook, stirring occasionally, until the onions are soft and just beginning to brown, about 6 minutes. Adding the siftings 5 %. Reducing the heat to medium-low and adding 12 % of the cream. Cooking and stirring, for about 3 minutes more, until the cream begins to thicken. Removing from the heat and stir in the 12 % of parmesan, 5 % of salt, and 5 % of pepper. Taste and adjust seasonings as needed. Spoon the sauce into the prepared crusts, dividing equally.

5. Breaking 3 quail eggs (4 %) into each ramekin, on top of the onion-cream mixture. Season each with more salt and pepper, as desired, and then drizzle with the remaining tablespoon of cream, dividing equally. Baking in the preheated oven for about 20 minutes or until the white has set but the yoke is still runny.

6. Carefully removing the crusts from the ramekins and serving immediately.

In products that were used for the preparation of this dish contains huge amount of vitamins and minerals that are needed for this target group. More detailed description of the vitamins has been identified by Gaylord Hauser, John H. Kellogg and David Fairchild.

## 5. Conclusion

The developing products which satisfy the needs of the present population in essential nutrients, taking into account the need for a reduced carbohydrate, are very actual for modern business hotels. The new innovative recipe «Baked Eggs in a Crunchy Jerusalem Artichokes Crust» consists of artichoke, avocado, quail eggs. This technology refers to satisfy daily requirements for people with mental activity and antistress, lipotropic and antiatherosclerotic effect.

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*Рекомендовано до публікації д-р техн. наук Пересічний М. І.  
Дата надходження рукопису 21.07.2015*

**Magaletska Iryna**, PhD, senior lecturer, Department of Molecular and Avant-garde Gastronomy, National University of Food Technologies, Volodymyrska str., 68, Kyiv, Ukraine, 01601  
E-mail: [iryanka\\_muliar@yahoo.com](mailto:iryanka_muliar@yahoo.com)

**Vinogradova Diana**, master, Department of Molecular and Avant-garde Gastronomy, National University of Food Technologies, Volodymyrska str., 68, Kyiv, Ukraine, 01601  
E-mail: [kiss\\_me\\_92\\_time@mail.ru](mailto:kiss_me_92_time@mail.ru)

**Popenko Viola**, master, Department of Molecular and Avant-garde Gastronomy, National University of Food Technologies, Volodymyrska str., 68, Kyiv, Ukraine, 01601  
E-mail: [violapopenko@gmail.com](mailto:violapopenko@gmail.com)