
THE COMPARATIVE FEATURE OF THE QUALITATIVE COMPOSITION OF THE BREAST MILK OF WOMANS OF DIFFERENT ETHNIC GROUPS OF THE RUSSIAN NORTH

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Summary. Results of research foremilk of 236 women belonging to different ethnic groups of the Russian north are put in a work basis. Foremilk of native women contains more fat and less protein than the foremilk of Russian and Yakut women living in the same regions; the amount of carbohydrates is the same as in the milk of Yakut women which is less than in Russians.

Keywords: breast milk, body length, body weight, proteins, fat, carbohydrates, native women.

Introduction. The ideal product of the feeding for children of the early age is a breast milk [1,2,3,5,6,9,10]. It contains the balanced complex of the nutrients, vitamin, microelements, big amount of biologically active substances and defensive factors, influencing on growing, development, shaping of immunal system, behavioural and psychic reactions of children and ability to education. Aside from this, breast milk possesses the ability to change its composition depending on functional maturity of child and his age, satisfying, thereby, all specific nutritive needs of the increasing organism. Provision of this optimum model of the feeding implies changes of the feminine organism already with beginning of pregnancy [4]. Preparing the mammary gland to production of milk is identified the lactogenes, but process of the maintenance to lactation by feeding woman – the lactopoez. Hormone regulation of lactogenes and lactopoez is complex and depends on activities of many hormones [8].

The protein composition of breast milk corresponds to needs of the organism of child. The main protein – lactalbumin, which contains irreplaceable amino acids (tryptophan, lizin, cistein), promotes quick suction of calcium and zinc, stimulates strait of mucous hutches of the bowels and growing of double-wound bacterial. [1,4]. The fatty component is presented by essential easy adopted long chained polyunsaturated fat acids of the row omega-3 and omega-6 (arahidon and eikozopentaen acids), adjusting immunal processes in organism. Fat acids enter to

breast milk from blood or are synthesized by gland (basically average chained). The content of the fat acids in the blood plasma of woman depends on her ration, fatty centers and liver metabolism. The content of fat in breast milk depends on period of the lactation and phase of the milk removing.

It is revealed that consumption of fish fat and fish by the feeding woman enlarges the content of long chained polyunsaturated fat acids (DPNZHK) in breast milk. The carbohydrates of feminine milk is presented by lactose, galactose, ksilose, fructose, arabinose and others. On share of the lactose happens to beside 90% gross amount of carbohydrates. The lactose hydrolyzes in fine bowels at participation of the lactase ferment in glucose and galactose. At the last years in breast milk oligosaharidies which present itself second carbohydrate faction of milk after lactose and are "double-wound gene factor" are discovered. Oligosaharidies practically in unchangeable type pass the fine bowels, and only in thick bowels fermentise double-wound- and lacto bacterias, providing their growing and development [7].

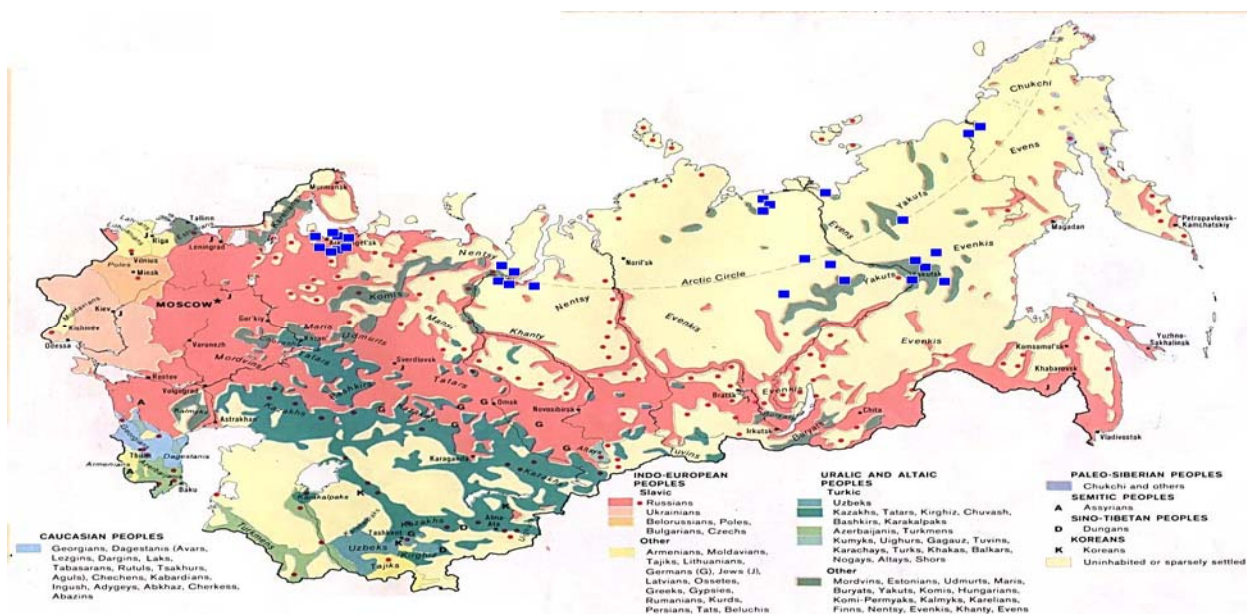
Aside from the main nourishing components there is the big amount of biologically active substances in feminine milk. The content of micro elements in breast milk vastly depends on geographical zone of the residence of the woman and ecological situation in region [1].

Thereby natural nursing is a natural model which brightly and directly illustrates the main positions of the concept of the optimum feeding of children of the early age.

The purpose of the research: To value the particularities of the feeding and qualitative composition of breast milk of women of the miscellaneous ethnic groups of the russian North. To reveal the differences of length of the body and weight of newborns and children of the first year among representatives of indigenous small in number peoples of the north, yakuts and russians.

The materials and methods.

The drawing 1. Places, Where Milk Samples Were Obtained



On this drawing is presented card of the areas where studies are conducted at present. Archangelsk area, Yamalo-Nenets autonomous county and Republic Sakha (Yakutia) are noted by the blue marks. With the exclusion of Archangelsk all areas are rural terrains with very low density of the population which is equal 7 persons on square kilometer. Some of explored mothers and children lived in the cities, but some in very small settlements. This fact is very important for determination of quantity and quality of the feeding.

The whole we explored 236 samples of breast milk collected among different representatives of ethnic groups (table1).

Table 1. Number of Studied Milk Samples (foremilk)

nationalities	amount		whole	day to lactation (diapason)
	village	city		
Evens	22	11	33	18 – 730
Evenks	3	0	3	18 – 300
Chukchis	5	0	5	14 – 480
Yakuts	55	52	107	3 – 605
Nenetses	6	1	7	25 – 376
Hanty	17	0	17	20 – 365
Russians	15	49	64	3 – 360
Total	123	113	236	3 – 605

For determination of the ration of the feeding we have asked the mothers to fill the three-day diary book of the feeding. Then, the test of breast milk was made. The milk was transported in frozen type under $t - (-20^{\circ}\text{C})$. The analysis of the qualitative composition of the taken material was produced on infrared analyzer SCANNER model 4250.

Data management and statistical analysis are made using printed forms, which were collected in database during the research. We used the traditional methods of the descriptive statistics and "tree" method in categorization.

The Results.

Table 2. Prior Probability to Classify 236 Women

Classes	Probability	Amount of the women
Russian	0.27	64
Indigenous	0.28	65
Yakuts	0.45	107

This table shows the amount of explored mothers, classified by ethnic groups. So the whole 64 russian women, 65 women of indigenous small in number peoples of the North and 107 yakuts were explored.

Classification criterions of ethnic groups are chosen the most important factors as life in city and rural terrain, levels of protein, fat and carbohydrate in milk.

Table 3. Ethnicity and Quality of Breast Milk in Different Ethnic Groups

	Indigenous – Russians	Indigenous – Yakuts	Yakuts – Russians
Protein (g/100ml)	Indigenous < Russians (P=0.00)	Indigenous < Yakuts (P=0.00)	Yakuts = Russians (P=0.09)
Fats (g/100ml)	Indigenous > Russians (P=0.00)	Indigenous > Yakuts (P=0.00)	Yakuts = Russians (P=0.64)
Carbohydrates (g/100ml)	Indigenous < Russians (P=0.01)	Indigenous = Yakuts (P=0.21)	Yakuts = Russians (P=0.11)

On this table is seen that the comparative analysis of the qualitative composition of breast milk of the women of indigenous small in number peoples contains realistically smaller amount of protein and carbohydrate in contrast with the russian women, and in contrast with yakut women the more fat and contains protein less. Also it is noticed that analysis of milk of yakut women and russian women has not revealed the reliable differences.

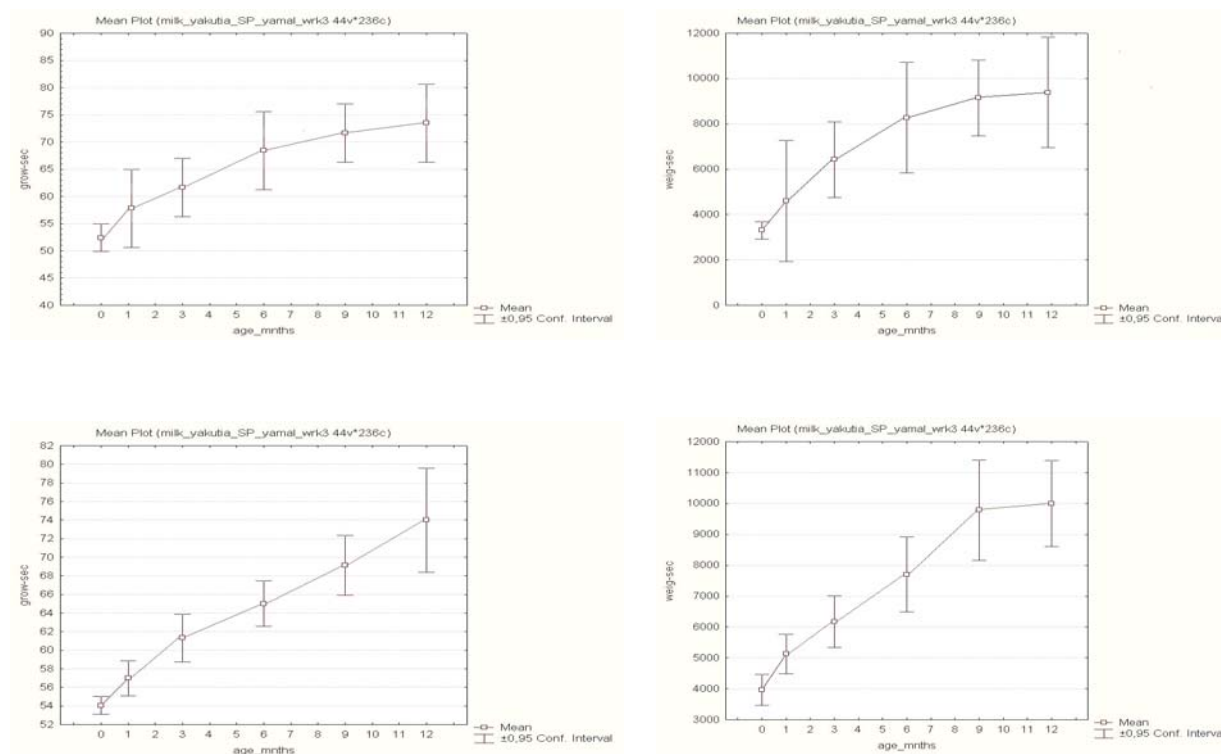
As it is shown in the table 4 the results witness that fact of the residence in city or rural terrain is not essential for ethnic groups.

Table 4. Weight and Length at Birth in Different Ethnic Groups: Town and Region Do not Influence

Ethnic groups	Yakuts		Russians	
	Weight (g)	Height (cm)	Weight (g)	Height (cm)
Town	3454	52,4	3457	51,9
Rural	3595	53,5	3286	51,6
Validity	P=0,28	P=0,08	P=0,23	P=0,66

The revealed difference of the qualitative composition of breast milk of women of the miscellaneous ethnic groups does not bring about difference of height of the body and weight of children of first year. It confirms the table 5. Here it is seen that diagrams are nearly identical with broad range of the dispersion.

The drawing 2. Length (cm) and Weight (gr) of Russian and Yakut Babies During Their First Year of life



The study of dietetic habits and food ration has shown that amount of consumed calories among women of the miscellaneous ethnic groups was equally, but there is essential difference in consumption of fish and animals. So according to our data women of indigenous small in number peoples of the North consumes fish and animals in 10 times more than russian women.

The conclusions: Milk of the women of indigenous small in number peoples of the North contains more fat and protein less in contrast with milk of the russian women and yakut women lived in the same region. During the research it is determined that defining factor influencing upon quality of breast milk, is a diet, but not ethnic attribute. The diagrams of the growing of children of the first year have not reliable differences in accordance with ethnic attribute though in the older age these differences are significant. We expect that differences in quality of breast milk can be a reason for delay of the growing of children of indigenous small in number peoples of the North in the following years. The fact requires the further more detailed research.

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