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SOMATOMETRIC DATA OF CONSTITUTIONAL FEATURES OF THE BODY SHAPE OF PREGNANT WOMEN

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✓ *Resume*

The article is devoted to the study of the features of anthropometric indicators in women of different constitutional types. One of the important indicators that determine the course of labor is growth. This shows that the number of complications during pregnancy and childbirth is directly related to the woman's constitution.

Key words: anthropometry, somatotype, constitutional type, pregnancy, childbirth, dolichomorph, brachymorph va mesomorph.

СОМАТОМЕТРИЧЕСКИЕ ДАННЫЕ КОНСТИТУЦИОНАЛЬНЫХ ОСОБЕННОСТЕЙ ФОРМЫ ТЕЛА БЕРЕМЕННЫХ ЖЕНЩИН

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✓ *Резюме*

Статья посвящена изучению особенностей антропометрических показателей у беременных женщин разных конституциональных типов. Одним из важных показателей, определяющих течение родов, является рост. Это показывает, что количество осложнений во время беременности и родов напрямую связано с конституцией женщины.

Ключевые слова: антропометрия, соматотип, конституциональный тип, беременность, роды, долихоморф, брахиморф ва мезоморф.

HOMILADOR AYOLLAR TANA SHAKLI KONSTITUTSIYAVIY XUSUSIYATLARINING SOMATOMETRIK MA'LUMOTI

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Maqola turli xil konstitutsiyaviy turdagi homilador ayollarda antropometrik ko'rsatkichlarning xususiyatlarini o'rganishga bag'ishlangan. Tug'ilish jarayonini belgilovchi muhim ko'rsatkichlardan biri o'sishdir. Bu shuni ko'rsatadiki, homiladorlik va tug'ish davridagi asoratlar soni bevosita ayolning konstitutsiyasiga bog'liq.

Kalit so'zlar: antropometriya, somatotip, konstitutsiyaviy tip, homiladorlik, tug'ish, dolixomorf, braximorf va mezomorf.

Relevance

Studies have been conducted that have shown that women born with a low body mass index have an increased risk of severe preeclampsia during pregnancy and subsequently have arterial hypertension. These patients during pregnancy had a high risk of placental insufficiency and premature detachment of a normally located placenta [1,3]. In addition, studies have been conducted in which women with short stature had a decrease in the size of the pelvis, which affected the method of delivery and the health of the newborn [2,4].

Of great interest is the work aimed at studying the characteristics of the course of pregnancy and its outcome in women with low body mass index [5,7]. As the study showed, the course of pregnancy and childbirth in underweight women, compared with normal weight, is characterized by a high percentage of obstetric complications. Among the complications during pregnancy, anemia, early toxicosis, preeclampsia, and threatening premature birth are most often noted.

One of the important indicators for the course of labor is the amount of growth. Acceleration processes led to an increase in all anthropometric indicators in women, including height. According to the literature [6,8], in the population group of pregnant women, at present, the average body length, equal to 161.3 cm, is a dividing value between short and tall. The average height of women with an anatomically normal pelvis, according to G.E. Chernukha [2], was 167.24 cm. It was especially noted that the lower the growth of a pregnant woman, the more pronounced changes in the bone pelvis.

Thus, according to foreign authors [5,7,8,11,12], a woman's height less than 150-152 cm gives grounds to suspect the presence of an anatomically narrow pelvis, which is often the cause of the development of a clinically narrow pelvis and the need for a caesarean section. The presence of a narrow pelvis, according to G.E. Chernukh [2], is indicated by the woman's low height and shoe size less than 5.5-6. L.I. Kalganov (1978) indicates that growth up to 150 cm was noted in 44.8% of women with a narrow pelvis.

High growth, 170 and above, was in 34% of women with normal pelvic sizes and only in 11% with narrow pelvises [2]. O.V. Shatrova (2018) notes that the frequency of operative delivery is higher in women with a pycnotic somatotype. The presence of constitutional features of the rate of intrauterine development of the fetus was first pointed out by A.M. Geselevich (1935).

According to J.C. Das (1997) noted the relationship between the anthropometric measurements of the mother and their newborns [7]. O.V. Shatrova (2014), notes that in women of the pycnotic type, chronic fetoplacental insufficiency is diagnosed significantly more often than in women of the asthenic and normosthenic somatotype.

According to foreign authors (5,6,7,8), the indicators of resistance and systolic-diastolic ratio in the umbilical cord arteries and in the uterine arteries were higher in women of the macrosomic body type. At the same time, in the same work, it was noted that the lowest studied parameters were noted in patients of the mesosomatic body type.

However, in the available literature there are no systematic studies to identify the relationship between the anthropometric parameters of pregnant women and the fetometric parameters of the developing fetus.

The purpose of the study is to establish the features of fetometric parameters in pregnant fetuses of different height and body type at the stages of ultrasound screening examinations.

Material and methods

This study was performed based on the analysis of pregnancy histories of 205 pregnant women for the period 2019-2020. The study was conducted on the basis of the Bukhara Regional Perinatal Center. All pregnant women had a singleton pregnancy and were in the age group from 22 to 35 years, body weight from 55 kg to 85 kg and height from 151 to 172 cm. In addition to gradation by somatotype, all women were also divided into height groups: short - from 151 to 160 cm, medium - 161-170 cm and tall - 171 cm and above. The allocation of growth groups is due to the fact that anthropometric indices are calculated without taking into account the length of the body of the examined and in different growth groups they will be different.

Results and discussion

To determine the relationship between the body size of the fetus and the type of physique of the mother during pregnancy, the abdominal circumference was examined at the stage of the second screening examination (at 21-22 weeks) and the third screening examination (at 31-32 weeks). Immediately after birth, the weight and height of the newborn was determined for comparison with these characteristics of the mother. At 21-22 weeks, the range of fluctuations in abdominal circumference was insignificant (from 169.1 ± 0.8 mm to 171.0 ± 0.8 mm) and it was not possible to establish any statistically significant differences in the studied groups, with the exception of fetuses in dolichomorphic mothers 151-160 cm and above 171 cm, and fetuses in brachymorphic mothers with a height of 151-160 cm and 161-171 cm (table №1).

Table 1

Mean values of fetal abdominal circumference ($X \pm Sx$, mm) at the stages of the second screening (21-22 weeks), in pregnant women with different body types and growth

Mother's height cm	Bodi type of the mother		
	mesomorph	dolichomorph	brachymorph
151-160	169,3 $\pm$ 1,0(n=27)	170,9 $\pm$ 0,7(n=34)*	170,2 $\pm$ 0,5(n=35)**
161-170	169,3 $\pm$ 0,9(n=33)	171,0 $\pm$ 0,8(n=21)	169,1 $\pm$ 0,6(n=24)**
171 and up	170,1 $\pm$ 0,4(n=9)	169,1 $\pm$ 0,8(n=11)*	169,4 $\pm$ 0,4(n=11)

*, ** - in the compared groups, the differences are statistically significant ($p < 0,05$)

Also, there were no significant differences from the indicators of the regional norm (165.9 $\pm$ 4.5 mm). A more regular dependence was revealed during the examination of the abdominal circumference in the period of 31-32 weeks. The largest ($p < 0.05$) abdominal circumference was in fetuses of pregnant women with a brachymorphic body type in all growth groups.

The average position for this parameter was occupied by the fetuses of pregnant women with a mesomorphic physique, and it was the least in the fetuses of pregnant women with a dolichomorphic body type. The abdominal circumference of the fetuses in brachymorphic pregnant women significantly ($p < 0.05$) differed from the regional norm for these terms (274.5 $\pm$ 8.9 mm). In undersized dolichomorphic pregnant women, the abdominal circumference of the fetus during this period was less than the average value of the regional norm, but the differences were not statistically significant (table n 2). The largest abdominal circumference was in fetuses of undersized brachymorphic pregnant women, the smallest was in fetuses of undersized dolichomorphic pregnant women (285.1 $\pm$ 0.7 and 273.2 $\pm$ 0.9 mm).

Table 2

Mean values of the circumference of the abdomen of the fetus ($X \pm Sx$, mm) at the stages of the third screening (31-32 weeks), in pregnant women with different types of physique and growth

Mother's height, cm	Body type of the mother		
	mesomorph	dolichomorph	brachymorph
151-160	285,1 $\pm$ 0,7(n=27)*	280,1 $\pm$ 1,0(n=34)	273,2 $\pm$ 0,9(n=35) *
161-170	283,4 $\pm$ 0,9(n=33)*	280,2 $\pm$ 0,6(n=21)	272,2 $\pm$ 0,9(n=24)*
171 and up	284,4 $\pm$ 0,5(n=9)*	279,9 $\pm$ 0,9(n=11)	276,3 $\pm$ 0,8(n=11)*

* - in the compared groups, the differences are statistically significant ($p < 0,05$)

Another somatometric parameter that makes it possible to judge the growth of the limbs of the fetus is the length of the femur. When studying this indicator in the period of 20-21 weeks, no significant differences were found in the groups, both in the fetuses of pregnant women of different physique and height (table No. 3). There are no significant differences in the studied groups and with regional norms for this period (36.5 $\pm$ 1.4 mm). However, it should be noted that the smallest values of the length of the femur were in the fetuses of undersized brachymorphic (37.2 $\pm$ 0.4 mm) and mesomorphic (37.2 $\pm$ 0.6 mm) mothers, and the largest in tall dolichomorphic (38.0 $\pm$ 0.8 mm) and mesomorphic (38.5 $\pm$ 0.3 mm) pregnant women, but the statistical significance of the revealed differences has not been proven either.

Table 3

Mean values of the length of the femur of the fetus ($X \pm Sx$, mm) at the stages of the second screening (21-22 weeks), in pregnant women with different types of physique and growth

Mother's height, cm	Body type of the mother		
	mesomorph	dolichomorph	brachymorph
151-160	37,2 $\pm$ 0,4 (n=27)	37,2 $\pm$ 0,6(n=34)	37,5 $\pm$ 0,4(n=35)
161-170	38,2 $\pm$ 0,4 (n=33)	37,4 $\pm$ 0,4(n=21)	37,7 $\pm$ 0,5(n=24)
171 and up	37,9 $\pm$ 0,3 (n=9)	38,5 $\pm$ 0,3(n=11)	38,0 $\pm$ 0,8(n=11)

A more natural picture was formed when studying the length of the femur in pregnant fetuses of various body types and heights at 31-32 weeks of gestation. The fetuses of pregnant women of each

body type had a direct correlation between the length of the femur of the fetus and the height of the mother.

Moreover, there were significant differences ($p < 0.05$) in the length of the femur of fetuses in short and tall mothers within the same body type. When comparing the length of the femur of fetuses in mothers of different builds, the length of the femur in all growth groups was the smallest in the fetuses of brachymorphic pregnant women (58.5 ± 0.3 mm, 60.8 ± 0.6 mm 61.3 ± 0.4 mm), and the largest - in the fetuses of dolichomorphic pregnant women (61.0 ± 0.4 mm 62.6 ± 0.4 mm 63.0 ± 0.7 mm), and these differences are statistically significant ($p < 0.05$), (table № 4). It should be noted that, in contrast to the circumference of the abdomen, the length of the femur in fetuses of pregnant women of various body types and heights did not have significant differences from the regional norm at 31-32 weeks (60.4 ± 2.1 mm) in any of the selected groups.

Table 4

Mean values of the length of the femur of the fetus ($X \pm S_x$, mm) at the stages of the third screening (31-32 weeks), in pregnant women with different types of physique and growth

Mother's height, cm	Body type of the mother		
	mesomorph	dolichomorph	brachymorph
151-160	$58,5 \pm 0,3 (n=48)^*$	$60,2 \pm 0,5 (n=42)^*$	$61,0 \pm 0,4 (n=38)^*$
161-170	$60,8 \pm 0,6 (n=46)$	$61,7 \pm 0,3 (n=59)$	$62,6 \pm 0,4 (n=46)$
171 and up	$61,3 \pm 0,4 (n=42)^*$	$62,9 \pm 0,3 (n=47)^*$	$63,0 \pm 0,7 (n=32)^*$

* - in the compared groups, the differences are statistically significant ($p < 0,05$)

The size of the fetal head is directly related to the size of the brain skull and the development of the brain. The study of the biparietal size of the fetal head revealed the following. At 21-22 weeks, all the results of measurements of this indicator did not have statistical differences ($p > 0.05$) from the regional value of the norm - 51.6 ± 2.2 mm. However, within the studied groups, the following features can be pointed out.

In one growth group, there are no statistical differences ($p > 0.05$) between the biparietal size in the fetuses of mothers of different body types. Within each group, distinguished by physique, the biparietal size increased in parallel with the increase in the mother's height. At the same time, the biparietal size of the fetal head in short and tall mothers significantly ($p < 0.05$) differed (50.0 ± 0.3 mm in fetuses of short brachymorph mothers and 52.2 ± 0.3 mm in tall brachymorph mothers; 50.0 ± 0.3 mm in fetuses of undersized mesomorphic mothers and 51.2 ± 0.6 mm in tall mesomorphic mothers; 51.3 ± 0.3 mm in fetuses of undersized dolichomorphic mothers and 53.1 ± 0.8 mm in tall dolichomorphic mothers), (table № 5).

Table 5

Mean values of the biparietal size of the fetal head ($X \pm S_x$, mm) at the stages of the second screening (21-22 weeks), in pregnant women with different types of physique and growth

Mother's height, cm	Body type of the mother		
	mesomorph	dolichomorph	brachymorph
151-160	$50,0 \pm 0,3 (n=48)^*$	$51,2 \pm 0,6 (n=42)^*$	$51,3 \pm 0,3 (n=38)^*$
161-170	$53,1 \pm 0,3 (n=46)$	$52,0 \pm 0,4 (n=59)$	$53,2 \pm 0,3 (n=46)$
171 and up	$52,2 \pm 0,3 (n=42)^*$	$53,0 \pm 0,4 (n=47)^*$	$53,1 \pm 0,8 (n=32)^*$

*- in the compared groups, the differences are statistically significant ($p < 0,05$)

In addition, significant ($p < 0.05$) differences were found between the biparietal size of the fetal head in short brachymorphic and tall dolichomorphic mothers (50.0 ± 0.3 mm and 53.1 ± 0.8 mm, respectively). Also noteworthy are slightly larger values of the biparietal size of the fetal head in dolichomorphic pregnant women compared to brachymorphic ones, but the reliability of this event has not been statistically proven (table № 5).

At 31-32 weeks, all the results of measurements of this indicator did not have statistical differences ($p > 0.05$) from the regional value of the norm - 81.1 ± 2.3 mm. Also, as in the previous period, in each

growth group (low-, high- and medium-sized) there are no statistical differences ($p > 0.05$) between the biparietal size in the fetuses of mothers of various body shapes (brachy-, meso- and dolichomorph). Within each group, distinguished by maternal physique, the biparietal size increased in parallel with the increase in maternal height. At the same time, the biparietal size of the fetal head in short and tall mothers differed significantly ($p < 0.05$), (79.1 ± 0.4 mm in fetuses of short brachymorph mothers and 82.4 ± 0.3 mm in tall brachymorph mothers; 79.5 ± 0.7 mm in fetuses of undersized mesomorphic mothers and 81.2 ± 0.4 mm in tall mesomorphic mothers; 78.3 ± 0.3 mm in fetuses of undersized dolichomorph mothers and 82.5 ± 0.9 mm in tall dolichomorph mothers), (table № 6).

Table 6

Mean values of the biparietal size of the fetal head ($X \pm Sx$, mm) at the stages of the third screening (31-32 weeks), in pregnant women of various body types and growth

Mother's height, cm	Body type of the mother		
	mesomorph	dolichomorph	brachymorph
151-160	$79,1 \pm 0,4 (n=48)^*$	$79,5 \pm 0,7 (n=42)^*$	$78,3 \pm 0,3 (n=38)^*$
161-170	$79,1 \pm 0,4 (n=46)$	$80,1 \pm 0,6 (n=59)$	$80,4 \pm 0,4 (n=46)$
171 and up	$82,4 \pm 0,3 (n=42)^*$	$81,2 \pm 0,4 (n=47)^*$	$82,5 \pm 0,9 (n=32)^*$

* - in the compared groups, the differences are statistically significant ($p < 0,05$)

Significant ($p < 0.05$) differences between the biparietal size of the fetal head in pregnant women with extreme body shapes - undersized brachymorphic and tall dolichomorph mothers (79.1 ± 0.4 mm and 82.5 ± 0.9 mm, respectively). At the period of 31-32 weeks, the biparietal size of the fetal head was larger in brachymorphic pregnant women than in dolichomorph ones in short and tall growth groups, but without statistically significant differences ($p > 0.05$).

The longitudinal size of the fetal head characterizes the frontal-occipital size determined by ultrasound screening studies. In the period of 21-22 weeks, this indicator did not have significant differences in the fetuses of undersized and medium-sized pregnant women, regardless of body type. In the group of tall pregnant women (171 cm and above), this size was significantly smaller ($p > 0.05$) in pregnant fetuses of dolichomorph constitution (68.3 ± 0.8 mm) than in brachymorph fetuses (69.4 ± 0.4 mm) and mesomorphic (70.1 ± 0.5 mm) physique (Table № 7).

Table 7

Average values of the frontal-occipital size of the fetal head ($X \pm Sx$, mm) at the stages of the second screening (21-22 weeks), in pregnant women with different types of physique and growth

Mother's height, cm	Body type of the mother		
	mesomorph	dolichomorph	brachymorph
151-160	$67,9 \pm 0,2 (n=48)$	$67,8 \pm 0,5 (n=42)$	$68,2 \pm 0,4 (n=38)$
161-170	$67,3 \pm 0,3 (n=46)$	$68,2 \pm 0,4 (n=59)$	$68,2 \pm 0,4 (n=46)$
171 and up	$69,4 \pm 0,4 (n=42)$	$70,1 \pm 0,5 (n=47)^*$	$68,3 \pm 0,8 (n=32)^*$

* - in the compared groups, the differences are statistically significant ($p < 0,05$)

We have not established differences in the obtained values of the fronto-occipital size of the head of fetuses in pregnant women of different physique and height from the average values of the regional norm (68.8 ± 1.7 mm). Assessing the entire range of the revealed differences, it should be noted that the smallest value of the fronto-occipital head size was in the fetuses of medium-sized brachymorph pregnant women (67.3 ± 0.3 mm), and the largest was in the fetuses of tall mesomorphic pregnant women (70.1 ± 0.5 mm). At a period of 20-21 weeks, the fronto-occipital size increased with an increase in the growth of the mother in brachymorph fetuses (mother's height: 161-170 cm, fronto-occipital size of the fetus - 67.3 ± 0.3 mm; mother's height: 171-180 cm, fronto-occipital size of the fetus - 69.4 ± 0.4 mm) and mesomorphic body types (67.8 ± 0.5 mm; 68.2 ± 0.4 mm; 70.1 ± 0.5 mm, respectively, in low-, medium and tall mothers), and in the fetuses of mothers of dolichomorph physique, it was almost the same in all growth groups (68.2 ± 0.4 mm; 68.2 ± 0.4 mm; 68.3 ± 0.8 mm respectively). In the period of 30-31 weeks, significant differences in the fronto-occipital size were revealed in the fetuses of

undersized mothers of various physiques. It was maximum in the fetuses of undersized dolichomorphic women (103.5 ± 0.4 mm). This size was the largest in the entire sample. The smallest values of the fronto-occipital size were noted in the fetuses of undersized mesomorphic women (100.3 ± 0.8 mm) and medium-sized dolichomorphic women (100.3 ± 0.3 mm). If in the group of brachymorphic and mesomorphic pregnant women, the frontal-occipital size of the fetus increased with the growth of the mother (101.6 ± 0.3 mm; 101.7 ± 0.3 mm; 103.0 ± 0.3 mm - in fetuses of low, medium and tall brachymorphic pregnant women and 100.3 ± 0.8 mm; 102.0 ± 0.4 mm; and 103.2 ± 0.3 mm, respectively, in the fetuses of mesomorphic pregnant women), then an inverse relationship was observed in dolichomorphic pregnant women (103.5 ± 0.4 mm; 100.3 ± 0.3 mm and 102.1 ± 0.4 mm, respectively) (Table No. 8). No significant differences were found in any group compared to the regional norm (101.6 ± 2.8 mm).

Table 8

Average values of the fronto-occipital size of the fetal head ($X \pm S_x$, mm) at the stages of the third screening (31-32 weeks), in pregnant women with different types of physique and growth

Mother's height, cm	Body type of the mother		
	mesomorph	dolichomorph	brachymorph
151-160	$101,6 \pm 0,3 (n=48)$	$100,3 \pm 0,8 (n=42)$	$103,5 \pm 0,4 (n=38)$
161-170	$101,7 \pm 0,3 (n=46)$	$102,0 \pm 0,4 (n=59)$	$100,3 \pm 0,3 (n=46)$
171 and up	$103,0 \pm 0,3 (n=42)$	$103,2 \pm 0,3 (n=47)$	$102,1 \pm 0,4 (n=32)$

When determining the cranial index of the fetal head, it was found that in the period of 21-22 weeks the lowest values of the cranial index were in pregnant fetuses of brachymorphic constitution (73.6 ± 0.2 ; 74.7 ± 0.3 ; 75.0 ± 0.2) and the highest values - in the fetuses of dolichomorphic pregnant women (75.2 ± 0.3 ; 78.0 ± 0.3 ; 77.7 ± 0.4). At the same time, there is a dependence on the growth of the mother. At the same time, there were no fetuses with brachycephaly in all groups at this time (Table № 9).

Table 9

Mean values of the fetal cranial index ($X \pm S_x$, mm) at the stages of the second (21-22 weeks) and third screening (31-32 weeks), in pregnant women with different types of physique and growth

Mother's height, cm	Body type of the mother		
	mesomorph	dolichomorph	brachymorph
Second screening			
151-160	$73,6 \pm 0,2^* (n=48)$	$75,5 \pm 0,5 (n=42)$	$75,2 \pm 0,3 (n=38)$
161-170	$74,7 \pm 0,3 (n=46)$	$76,2 \pm 0,4 (n=59)$	$78,0 \pm 0,3^* (n=46)$
171 and up	$75,0 \pm 0,2 (n=42)$	$77,7 \pm 0,4 (n=47)$	$77,7 \pm 0,4^* (n=32)$
Third screening			
151-160	$77,8 \pm 0,3 (n=48)$	$79,3 \pm 0,7 (n=42)$	$75,6 \pm 0,3 (n=38)^*$
161-170	$78,7 \pm 0,3 (n=46)$	$78,5 \pm 0,5 (n=59)$	$80,0 \pm 0,3 (n=46)$
171 and up	$80,0 \pm 0,3 (n=42)^*$	$78,7 \pm 0,3 (n=47)$	$80,0 \pm 0,6 (n=32)$

* - in the compared groups, the differences are statistically significant ($p < 0,05$)

In the period of 31-32 weeks in the group of brachymorphic pregnant women, the values of the cranial index increased compared to the previous period (73.6 ± 0.2 at 21-22 weeks and 77.8 ± 0.3 at 31-32 weeks; 74.7 ± 0.3 and 78.7 ± 0.3 ; 75.0 ± 0.2 and 80.0 ± 0.3 in short, medium and tall pregnant women, respectively). In this group, the fetuses retained the dependence of the increase in the cranial index depending on the growth of the mother. The lowest values of the cranial index during this period were in the fetuses of undersized dolichomorphic pregnant women (75.6 ± 0.3), however, in fetuses of medium and tall pregnant women, these values were maximum (80.0 ± 0.3 and 80.0 ± 0.3 respectively).

Thus, it is possible to note the appearance in the studied groups of fetuses with a brachycephalic skull shape. Regional values of normative parameters of the cranial index at 21-22 weeks were 75.0 ± 1.5 and at 31-32 weeks - 80.2 ± 2.1 , respectively. When determining the head circumference (derived value), it

was found that the circumference of the fetal head within one growth group did not differ significantly in pregnant fetuses of different physique. However, this indicator was significantly ($p<0.05$) higher in fetuses of medium height pregnant women of all somatotypes than in short ones, and in tall brachymorphic and mesomorphic pregnant women compared to short ones. In tall dolichomorphic pregnant women, there were no significant differences in the circumference of the fetal head compared with the fetuses of short mesomorphic pregnant women (table №10).

Table 10

Mean values of the fetal head circumference ($X\pm S_x$, mm) at the stages of the second screening (21-22 weeks), in pregnant women with different types of physique and growth

Mother's height, cm	Body type of the mother		
	mesomorph	dolichomorph	brachymorph
151-160	188,2 $\pm$ 0,5*(n-48)	189,1 $\pm$ 0,8*(n-42)	187,1 $\pm$ 0,4*(n-38)
161-170	192,3 $\pm$ 0,3*(n-46)	191,7 $\pm$ 0,5(n-59)	192,2 $\pm$ 0,5*(n-46)
171 and up	192,1 $\pm$ 0,3(n-42)	192,0 $\pm$ 0,3*(n-47)	191,2 $\pm$ 0,8(n-32)

* - in the compared groups, the differences are statistically significant ($p<0,05$)

For this period (21-22 weeks) there were no significant differences in the head circumference in pregnant fetuses of different physique and height compared with the regional norm (188.1 $\pm$ 6.0 mm). In the period of 31-32 weeks, the dependence of the size of the circumference of the fetal head on the growth of the mother acquired a more regular character with a significant ($p<0.05$) difference between short and tall groups, but there was no statistically significant difference in values within individual growth groups between fetuses of pregnant women of different somatotypes. The maximum head circumference was in the fetuses of tall mesomorphic and brachymorphic pregnant women, the minimum was in the fetuses of undersized dolichomorphic pregnant women (table № 11).

Table 11

Mean values of the fetal head circumference ($X\pm S_x$, mm) at the stages of the third screening (31-32 weeks), in pregnant women with different types of physique and growth

Mother's height, cm	Body type of the mother		
	mesomorph	dolichomorph	brachymorph
151-160	288,6 $\pm$ 0,5(n-48)*	289,7 $\pm$ 0,5(n-42)*	288,5 $\pm$ 0,6(n-38)*
161-170	290,1 $\pm$ 0,6(n-46)	290,7 $\pm$ 0,7(n-59)	289,4 $\pm$ 0,3(n-46)
171 and up	293,4 $\pm$ 0,3(n-42)*	294,1 $\pm$ 0,6(n-47)*	292,4 $\pm$ 0,8(n-32)*

* - in the compared groups, the differences are statistically significant ($p<0,05$)

No significant differences were found in the head circumference of pregnant fetuses of different body build and height compared with the regional norm (289.2 $\pm$ 8.3 mm) for a period of 31-32 weeks of pregnancy.

Conclusions

1. It has been established that with a significant increase in the average value of pelvic distances as growth in groups increases (151-160 cm; 161-170 cm; 171-180 cm), there is also a tendency for a significant increase in these pelvic sizes from dolifomorphic to mesomorphic and further to brachymorphic body types.
2. Weight in pregnant women of all body types was in a direct positive relationship with height and significantly differed in the respective growth groups, and the body mass index in the growth groups of 151-160 cm and 161-170 cm also increased from dolifomorphic to mesomorphic and further to brachymorphic types physique, and in the growth group 171-180 cm, this pattern was violated. The highest body mass index was in women of brachymorphic body type.
3. For an accurate assessment of the process of fetal development, differentiation of intrauterine growth retardation in the work of an obstetrician, when interpreting the results of fetometry, the somatotype and height of the mother should be taken into account. The most pronounced fluctuations in the fetometric dimensions of the fetus are manifested in undersized dolichomorphic and tall brachymorphic pregnant women.

LIST OF REFERENCES:

1. Ahman A. Two sides of the same coin-an interview study of Swedish obstetricians' experiences usingultrasound in pregnancy management / A. Ahman, M. Persson, K. Edvardsson, A. Lalos, S. Graner, R. Small, I. Mogren // BMC Pregnancy Childbirth. - 2015.- Vol. 20. - P.304-315.
2. Arya Sushila and Sanya Kupesic Plavsic. 2017. "Preimplantation 3D ultrasound: current use and problems.- Journal of perinatal medicine. // Journal of Perinatal Medicine, Volume 45, Issue 6, Pages 745–758 <https://doi.org/10.1515/jpm-2016-0361>.
3. Auerbach Benjamin M., Catherine A. king, Ryan M. Campbell, meadow L. Campbell, and Adam D. Sylvester. 2018. "Changes in the obstetric size of the human pelvis depending on the age of death and latitude. // American journal of physical anthropology. P.236-90 <https://doi.org/10.1002/ajpa.23690>.
4. Engels A.C. et al. Sonographic detection of central nervous system defects in the first trimester of pregnancy /A.C. Engels, L. Joyeux, C. Brantner, B. De Keersmaecker, L. De Catte, D. Baud, J. Deprest, T. Van Mieghem // Prenat Diagn. - 2016.- Vol. 36, N3.- P. 266-273.
5. Öcal D.F. The place of four-dimensional ultrasound in evaluating fetal anomalies /D.F. Öcal, T. Nas, I. Güler // Ir. J. Med. Sci.- 2015.- Vol.184,N 3.-P.607-612.
6. Fetal imaging: executive summary of a joint Eunice Kennedy Shriver National Institute of Child Health and Human Development, Society for Maternal-Fetal Medicine, American Institute of Ultrasound in Medicine, American College of Obstetricians and Gynecologists, American College of Radiology, Society for Pediatric Radiology, and Society of Radiologists in Ultrasound Fetal Imaging workshop / U.M. Reddy, A.Z. Abuhamad, D. Levine, G.R. Saade // Obstet. Gynecol. - 2014.- Vol.123, N5.- P.1070-1082.
7. Sato M. Et al. 4D ultrasound study of fetal facial expressions at 20-24 weeks of gestation / M. Sato, K. Kanenishi, U. Hanaoka, J. Noguchi, G. Marumo, T. Hata // Int. J. Gynaecol. Obstet. -2014.- Vol.126, N3.- P.275-279.
8. Khamdamov I.B., Khamdamov A.B., Classification and properties of mesh explants for hernioplasty of hernial defects of the anterior abdominal wall (review) // Biology and Integrative Medicine. ISSN 2181-8827 2021. No. 5 - September-October (52) P.12-22
9. Khamdamov I.B. Evaluation of the efficiency of an improved approach in the treatment of anterior abdominal wall hernias in women of fertile age // American Journal of Medicine and Medical Sciences 2022, 12(5): 584-588 DOI: 10.5923/j.ajmms.20221205.27
10. Smeets N.A. et al. Fetal volume measurements with three dimensional ultrasound in the first trimester of pregnancy, related to pregnancy outcome, a prospective cohort study / N.A. Smeets, M. Prudon, B. Winkens, S.G. Oei //BMC Pregnancy Childbirth. -2012.- Vol. 28.- p. 12:38.
11. Parikh L.I. et al. Fetal biometry: does patient ethnicity matter? / L.I. Parikh, J. 3rd Nolan, E. Tefera, R. Driggers // J. Matern. Fetal Neonatal Med. – 2014.- Vol. 27, N5.- P.500-504.
12. Daniel-Spiegel E. Et al. Fetal Biometry in the Israeli Population: New Reference Charts / E. Daniel-Spiegel, M. Mandel, D. Nevo, A. Ben-Chetrit, O. Shen, E. Shalev, S. Yagel // Isr. Med. Assoc. J.- 2016.- Vol.18, N1.-40-44.

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