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# Quality of Food and the Birth of Offers of a Certain Sex
## (Experimental Study)

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**Abstract:** The article describes hypotheses for determining the sex of a child; it must be pointed out that not a single hypothesis has yet found scientific confirmation. In some experimental animals, a relationship was discovered between the acidity of the nutrient medium in which gametes float and the sex of the unborn child. In this regard, the purpose of this work was to study the influence of the qualitative composition of the diet on the birth of sex. This paper presentspreliminary research results that require more in-depth study and at a higher methodological level. This issue, which concerns everyone, is in the early stages of resolution.
**Key words:** hypotheses, scientific confirmation, pathology

**Relevance.** Attempts at predictions and theories of "planned" births of a child of a certain gender have existed since time immemorial, but most of them were fraudulent. No matter how hard mothers tried to follow the healers' instructions, the result remained, as a rule, unpredictable. These are clairvoyants, enthusiastic parents, and world-famous scientists.

Naturally, for the birth of healthy offspring, the father and, of course, the mother must be healthy during pregnancy and lactation [7-26], although recently in the literature more and more attention has been drawn to works related to extragenital pathology of the mother, which negatively affects development offspring, the formation of its digestive, genitourinary and immune systems in the antenatal and postnatal periods of development [27-26].

True, recently a lot of facts have already accumulated, the generalization of which has allowed scientists to trace the dependence of the formation of the sex of the unborn child on heredity, the environment in which the child was conceived, the age of the parents, the characteristics of the environment, and the nutrition of the spouses [1-2].

It is known that the sex of a child depends on the man, since the egg carries only two X chromosomes, while male germ cells contain X and Y chromosomes. A boy can only be born if the egg is fertilized by a sperm carrying a Y chromosome with chromosome set 44 + XY. Otherwise, a girl will be born with chromosome set 44 + XX.

That is why it is the sex chromosome of the fertilizing sperm that determines the sex of the child. If an egg were fertilized by the same egg (which is absolutely impossible), only girls would be born. Although there are families where only boys or only girls are born, approximately the same number of boys as girls are born each year, with a slight bias towards boys.

In ancient times, it was believed that boys come from the left testicle, and girls from the right. Therefore, to conceive the desired offspring, various acrobatic poses were recommended and even advised to sacrifice one testicle. According to popular belief, the sex of the unborn child can be predicted by the sky and stars. In ancient times, for example, they believed that if the moon changed in the first 3 days after childbirth, then the next child would be of the opposite sex. They also tried to determine the sex of the child based on the position of the moon in a certain zodiac sign at the time of fertilization [23].

Currently, there are also several hypotheses for determining the sex of a child; it is necessary to point out that not a single hypothesis has yet found scientific confirmation [3].

*The first hypothesis:* the moment of ovulation.

It is known that sperm containing the Y chromosome move at a higher speed through the female reproductive tract than sperm containing the X chromosome. Some people draw the conclusion from this that if the moment of sexual intimacy coincides with ovulation, the sperm with the Y chromosome will be the first to reach the egg and fertilize it, that is, a male embryo will be formed. And vice versa, if ovulation occurs 2 days after intercourse, sperm with a Y chromosome will arrive at the meeting place with the egg, and in this case a girl will be born.

*Second hypothesis:* intensity of sexual relations.

There is an opinion that the more often sexual intimacy occurs, the greater the chances of giving birth to a boy. This is supposedly facilitated by the intensity of a woman's orgasm, since uterine contractions accelerate the movement of sperm carrying the Y chromosome. Finally, high acidity of vaginal contents is favorable for sperm with an X chromosome, and low acidity is favorable for sperm with a Y chromosome. The best recipe for having a boy is considered to be the following: the moment of sexual contact should be as close as possible to ovulation, and immediately before it it is recommended to take a sitz bath and, using douching, irrigate the vagina with warm water with sodium bicarbonate dissolved in it, that is, baking soda . If you want a girl, do the opposite. Sexual intimacy is recommended 3-4 days before ovulation, relatively frequent intercourse in the previous days, lack of orgasm in the woman, vaginal douching with warm water with the addition of ordinary table vinegar. All these recommendations are depressing and deprive the love act of charm. Moreover, they are not supported by science. There is always one chance out of two, since no matter what, nature creates as many boys as girls.

*Third hypothesis:* special diet.

It turned out that in some experimental animals there is a relationship between the acidity of the nutrient medium in which the gametes float and the sex of the unborn child. It has been theoretically established that sodium and potassium favor the sperm carrying the Y chromosome, while calcium and magnesium, on the contrary, stimulate the formation of a female embryo. A special diet for a person has been developed, with the help of which you can plan the gender of the child. Adherents of this technique recommend that a woman strictly follow the prescribed diet for 3 months before conception. If you break the ban once, all your efforts will be in vain! This regime is very constraining. In addition, pregnancy does not always occur after the end of the special nutrition period, and it may have to be extended. It should also be taken into account that such a diet is absolutely unbalanced and therefore is strictly contraindicated for the expectant mother. Judge for yourself: milk, eggs, cheese, fresh fruit are not allowed if you want a boy! The effectiveness of the method is low; it often does not meet the expectations of married couples who decide to do it [3].

*Fourth hypothesis:* sperm selection.

The most promising area that presents the possibility of choosing the sex of a child even before conception is sperm selection. By creating a specific environment for their migration, it is possible to isolate fractions, which are then used for artificial insemination. But the effectiveness of this widely advertised technique in the media has not yet been proven. However, it is quite possible that we will soon learn to use genetic probes, and the choice can be made accurately.

But we cannot turn a blind eye to the aesthetic side of the question: is it permissible to use these techniques simply at the request of parents or is medical permission required? Scientists all over the world are pondering this question today. It is quite natural to want to have a child of one gender or another. However, the question of whether it is possible to program the sex of a child before birth still remains relevant.

In this regard, **the purpose** of our work was to study the influence of the qualitative composition of the diet on the birth of sex, i.e. We decided to test experimentally the validity of the third hypothesis.

**Material and research methods.** The work was carried out on sexually mature (4 months) white outbred female rats (50 pcs.) weighing 170-190 grams. Before the start of the experiment, to exclude pathology, the animals were quarantined for 2 weeks and fed a regular laboratory diet.

To conduct the experiment, 2 groups of animals of 25 females each were selected. The first group (and the males used for mating of this group, at the rate of 1 to 4 females) were fed mainly with grains - corn, wheat, bread crumbs, dried apricots and greens (clover), in other words, this group had an inferior diet.

The second group of animals, including males, unlike the first, received grain crops, proteins and fats of animal origin - meat (lamb, beef), eggs, sausage, milk, vegetable oils (cottonseed, sunflower), greens (clover, spinach, cabbage, beets).

The dated gestational age of females was determined from vaginal smears. To determine the reproductive function of females, the following parameters were studied: average duration of pregnancy, avg. number of pups in the litter, avg. number of males in the litter, mortality of rat pups on 1-3 days. and 4-7 days, avg., the number of males and females in the litter. We also studied some parameters to study the development of rat pups during early postnatal ontogenesis: body weight (g), body length (mm), weight of the liver and spleen, thymus and kidneys (we studied the weight of the left kidney, mg).

Statistical processing of digital data was carried out using standard methods of variation statistics using Student's tests. Differences satisfying $P < 0.05$ were considered significant.

**Results and discussion.**

The results of our experiment showed that in rats of the first group (females with an inadequate diet), the total number of pups in the litter was 223 (of which 148-66.4% were males and 75-33.6% were females), mortality after birth reached 7% (of which 6.7% on days 1-3 and 0.44% on days 4-7 after birth). The average duration of pregnancy was 21.44±0.13, with an average number of pups in the litter of 8.92±0.34; the average number of males and females in the litter was 5.92±0.29 and 3.0±0.19, respectively.

When studying the data obtained from the second group of animals (females with a full diet), it was found that the total number of rat pups in the litter was 264 (where 172-65.2% were females and 92-34.8% males). When studying fertility rates, it was found that the average duration of pregnancy in this group of females was 22.04 ± 0.16 and the average number of pups in the litter was 10.56 ± 0.26, of which males accounted for 3.68 ± 0. 16, while the average number of females was 6.88 ± 0.31.

**Fertility rates by sex in female rats with inadequate and adequate diets**

| No. | Indicators studied | Animals of group 1 | Animals 2 groups |
|---|---|---|---|
| 1 | Total number of pups born | 223 | 264 |
| 2 | Mortality for 1-3 days | 14- 6.7% | 12-4.5% |
| 3 | Mortality at 4-7 days | 1 - 0.44% | 1 -0.4% |
| 4 | Total number of males in the litter | 148 - 66.4% | 92 - 34.8% |
| 5 | Total number of females in the litter | 75 - 33.6% | 172 -65.2% |
| 6 | Average length of pregnancy | 21.44±0.13 | 22.04±0.16* |
| 7 | Average number of pups per litter | 8.92±0.34 | 10.56±0.26* |
| 8 | Average number of males per litter | 5.92±0.29 | 3.68±0.16* |
| 9 | Average number of females per litter | 3.0±0.19 | 6.88±0.31* |

Our results indicate that with an inadequate diet, i.e. with a lack of proteins and fats of animal and plant origin and with hypovitaminosis, there is a reduction in gestational age and an increase in the mortality rate of rat pups on days 1-3 after birth. The decrease in the average number of pups in a litter is apparently associated with a disruption of protein and fat metabolism in the body of a pregnant female, leading to a weakening of labor. The increase in the number of males in the litter may be explained by an increase in potassium and sodium ions in the female's body.

With a full-fledged breeding, the gestation period is normalized, the mortality rate of rat pups decreases, the average number of pups in the litter increases, and the number of females in the litter increases. Most likely, this is due to an increase in fat-soluble vitamins and a large amount of proteins, calcium and magnesium ions. As a result, the homeostasis of the body, its endocrine functions, and hormonal balance are probably disrupted, which ultimately affects the germ cells [23].

Thus, based on our study, we can conclude that insufficiency of proteins, fats and vitamins in the diet, but an increase in potassium and sodium ions, leads to an increase in the birth of males in rats, while a normal diet and even intensive enrichment of it with proteins and fats of animal origin promotes increasing the birth rate of females among their offspring.

In this paper, we present preliminary results of the study, which require a more in-depth study and at a higher methodological level. This issue, which concerns everyone, is in the initial stages of resolution. According to the results of our study, it turns out that the prevailing opinion among people about increased nutrition, that is, a high-calorie diet necessary for the birth of boys, is most likely erroneous.

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