

The Nursing of Children's Diseases.

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LECTURE I.

ARTIFICIAL FEEDING.

This is a subject of the greatest importance and its principles should be clearly understood by the nurse. The most convenient and, therefore, the most common artificial food for infants is cow's milk, but the milk of other animals is also used. Goat's milk resembles cow's milk much more nearly than human milk and has therefore no advantages in this respect, but in the country a family can purchase their own goat, the expense of its keep is practically nothing, and the goat never, or very rarely, suffers from tuberculosis, to which disease the cow is very liable.

Asses' milk much more nearly resembles human milk than that of any other animal; but it is costly and difficult to obtain. Cow's milk differs from human milk in many respects as is shewn by the following analyses:—

Reaction.	NORMAL HUMAN MILK.		AVERAGE COW'S MILK.	
	<i>Alkaline.</i>		<i>Acid.</i>	
Fat	4.13	3.75
Proteids ..	1.2	3.76
Lactose .. .	7	4.42
Ash	0.2	0.68
Total Solids ..	12.13	12.61

The composition of a cow's milk varies with the breed, the length of time it has been in milk, and its food; and so it is better to obtain the mixed milk of a number of *healthy* cows than the milk of one cow as was formerly advised.

The supply of milk should never be kept in the nursery, as it much more easily decomposes when kept in a warm room. It should be kept in some cool, well-ventilated place.

It will be seen from the above analyses that the chief apparent differences between human and cow's milk is that the latter contains less sugar of milk and more proteid, but there is also another important difference. The curd precipitated by rennet from cow's milk is dense, heavy, and indigestible, while that precipitated from human milk is soft, flocculent, and easily digested; and as this precipitation occurs in the child's stomach, the difference is of great importance. It is due to the fact that the proteids differ in kind in the two varieties of milk.

HUMANIZED MILK.

The obvious way to modify cow's milk in order to produce a compound resembling human milk, is to add water, cream, and sugar of milk, to the former. This can be done in many ways. One of the simplest and best is described by Dr. Ashby, of Manchester. "Take a bottle capable of holding 30 ounces, fill it with this quantity of milk and allow it to stand in a cool place, stoppered with a plug of cotton wool, for five hours. By this time, a certain amount of cream will have risen to the top. Carefully, without disturbing the bottle siphon off the lower half—that is 15 ounces—and replace this by an equal quantity of water in which one ounce of sugar of milk has been dissolved. Place the bottle in a sterilizer, and keep at a temperature of 160° F. for half-an-hour, then cool." This mixture will contain about 3—3.5 per cent. fat, 1.8 per cent. proteid, and 6.0 per cent. milk sugar; and, may be, too strong for a very young or delicate infant, in which case 20 ounces of milk should be siphoned off and replaced by the same quantity of sugar of milk solution.

The siphon may be of glass with indiarubber tubing at the end of the long limb. It should be just filled with water, the indiarubber pinched to retain the water, and then introduced into the bottle of milk and the requisite quantity siphoned off."

Humanized milk is prepared now by many firms, and is supplied sterilized in sealed bottles, ready for use. It should be of a yellowish white colour, and the vacuum should be complete as evidenced by a tap on the inverted bottle giving a peculiar rattling sound; if this sound does not occur the bottle should be discarded, as the sterilization may not be perfect. Over sterilization may cause a brownish shade in the milk, which then may cause dyspeptic symptoms in a weakly infant.

Another method of preparing humanized milk is by allowing a quart of good average milk to stand in a cool place for six hours, then skimming off the cream from it. A mixture of one part of this with two-and-a-half parts of sugar solution (one ounce of sugar of milk dissolved in a pint of water), will give a milk of the following percentage: Fat 3.5 per cent., Proteid 1.2 per cent., Sugar 6.0 per cent., and hence nearly approximating in composition to human milk.

DILUTED MILK is made by adding sugar water and lime water to cow's milk. This of course

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