

THE MOTHERCRAFT SECTION

Articles for this section will be welcomed by the Editor,
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Modified Milk Mixtures for the Artificial Feeding of Infants

Leaflet III (Useful Tables.)

The amount of food to be given to an infant should not be guessed at, and his appetite cannot be relied upon, therefore to judge the amount of food he requires, it is wise to use the caloric system which is an extremely simple and reliable guide.

It has been estimated that the amount of calories per pound of body weight varies between 40 and 50 according to the babies' age.

The recipes in Leaflet II vary from calories 18 per oz. to calories 19.6 per oz.

Therefore if you say for simplicity that these mixtures contain roughly 20 calories per oz. and take into consideration the fact that breast milk assimilates far better than any artificial food, you will find that the average naturally fed baby needs from three to five ounces less than an artificially fed one. The following table is a guide to both Natural and Artificial Feeding.

Caloric Requirements of a Baby

Months.	Calories per pound of body weight.
1	50
2	50
2½	48
3	47
4	45
5	44
6	42
7	41
8	40
9	40
10	41
11	42
12	43
13	44
14	46
15	50

To find out how much a baby needs, weigh him on an accurate pair of scales (spring balances should be avoided), take the amount of calories he needs per pound of body weight for his age and multiply them by his weight, then take the full amount of calories, divide them by 20 and you will have the number of ounces of food he needs each day.

Example :—

Baby of 3 months old weighing 10 lbs. $47 \times 10 = 470$.

Take calories 470 and divide by 20 and you will have $20 \overline{)470}$
the amount of ounces of Milk Mixture he will need in $23\frac{1}{2}$ ozs.
24 hours.

It must be remembered that there are always exceptions, therefore commonsense must be used and each individual baby studied separately.

The full amount of food or caloric requirement cannot be given in the following cases :

1. When there is any digestive upset, e.g. diarrhoea, vomiting etc. a weak diluted mixture must be given.
2. When babies have been underfed, a very weak mixture must be given and worked up slowly, leaving out the extra fat to begin with and working it up drop by drop.
3. Normal babies who have been weaned abruptly must be given a very weak mixture until used to the new food.
4. Partially breast-fed babies (where breast milk is increasing and the baby is well) should not be given their full requirements, as they must be encouraged to suck hungrily at the breast and so help to increase the natural supply.
5. During the first few weeks of life, if the baby has to be artificially fed.
6. Overfed, overweight and often fully breast fed babies often make better progress if given less than the full amount.

The following babies will need more than their actual caloric requirements, when worked out by this method :

1. Slightly retarded babies = e.g. 2 lbs. under normal at 6 months, $\frac{1}{4}$ or $\frac{1}{8}$ above.

Multiply the baby's caloric requirement for his age by his weight, add $\frac{1}{8}$ or one $\frac{1}{4}$ more than the full amount and then divide by 20.

2. Emaciated babies need more food therefore when digestive trouble has been righted ; gradually work up to $\frac{1}{8}$ as much as the total amount.

It is easy to understand this if you take into consideration what the baby's normal weight and requirement ought to be.

This method leaves nothing to guess-work and gives a sound scientific basis to work upon, but experience and commonsense are needed to make the little adjustments so often necessary in individual cases.

Roughly a baby requires 3 ozs. of fluid to every pound of weight or $\frac{1}{8}$ of its whole body weight. Plenty of warm boiled water is necessary both for breast fed and artificially fed babies in India, lack of it frequently causes fever.

Babies weighing under $4\frac{1}{2}$ lbs. at birth should be fed two-hourly missing one feed during the night.

Babies weighing over $4\frac{1}{2}$ lbs. at birth should be fed two-hourly missing one or if gaining well two feeds during the night, and some do better on three-hourly feeding after the first few days.

Babies weighing over 6 lbs. and under $7\frac{1}{2}$ should be fed three-hourly and miss two feeds during the night ; warm boiled water should be given if they cry but they must be encouraged to sleep all night.

Babies weighing $7\frac{1}{2}$ lbs. and over at birth, usually do much better fed four-hourly and this should be aimed at for all babies, once they have reached $7\frac{1}{2}$ lbs. and night feeds should be stopped as soon as possible.

Very small babies should be given two-hourly feeds of from $\frac{1}{4}$ to 1 ounces of whey or a very weak solution of milk and water after they have been to the breast, until lactation is established. They are too thin and weak to be able to stand, losing further weight. Large fat babies should be given only warm boiled water. On the other hand great care must be taken not to overfeed these small babies, whether naturally or artificially fed, and it may be necessary to feed only from one breast for a time, taking care that the milk supply does not diminish too much for lack of stimulation.

Even normal babies should be started with about 3 to 5 minutes at each breast, some will take all they need in 7 minutes but slow, steady, comfortable

sucking should be encouraged and the feed made to last for fifteen to twenty minutes but never more than thirty minutes. The time must be cut down if the baby gains over 8 oz. a week, has too many stools, is vomiting or showing any other signs of overfeeding.

When a baby is to be artificially fed from birth, it is easier to use the full strength mixture No. IV and dilute it until the third week or after the fourteenth day and then use mixture No. I or No. II, gradually working up to the full strength mixture No. IV when the baby is three months old.

The necessary amounts should be worked out from the foregoing table and adjusted after the fourteenth day always keeping in mind that very young babies cannot take their full caloric but must be started on a weak mixture and gradually pushed up. Incidentally, some can take a stronger mixture and cannot only be pushed up much more quickly than others, but need larger quantities.

The increase in weight and the nature of the stools should be very carefully watched. In artificially fed infants, they are light yellow in colour and less frequent than in breast-fed babies.

If they are constipated or if the baby is restless and is passing large hard curds, the whey and water mixture No. II should be given. It does not need diluting as much as mixture No. IV.

The following is an average table for a normal baby.

Average Weight	Age	Ounces of Mixture IV.	Ounces of Boiled Water	Total Amount given in 24 hours
7½ lbs.	At birth	Nil, a little whey if necessary	Plenty of Boiled Water	—
6¾ "	3rd day	1¼	3¼	5
	4th "	3½	4	7½
	5th "	5	5	10
	7th "	6½	6	12½
	8th "	8	7	15
7 "	10th "	12	5½	17½
* 7½ "	3rd week	15	5	20
	4th "	18	4½	22½
8½ "	2nd month	21	4	25
10 "	3rd "	25 to 27½	Nil	25 to 27½
	or	Mixture I		
* 7½ "	3rd Week	20	Nil	20

* Adapted from *The Mothercraft Manual*, by Miss Mabel Liddlard.

If mixture No. II is given the amount of whey should be gradually decreased and the amount of milk increased until the baby is having mixture No. IV at about 3 months.

If mixture No. I is given at the third week gradually increase the milk until the full strength mixture is given.

A baby should not gain over 8 ozs. or under 4 ozs. a week. Overfeeding can be more dangerous than underfeeding.

The average weekly gain after three months is slower than before three months. Some babies cannot gain more than 5 ozs. a week without having a digestive upset. Very small or thin slightly premature babies often gain quickly, so do tall lean babies, while others gain slowly remaining small, fat and firm.

The following is a useful table when measuring the ingredients for milk mixtures. All substances do not weigh the same therefore the number of spoonfuls to the ounce differ.