

HEALTHY ALTERNATIVES TO CONVENTIONAL INFANT FORMULA

By Marie Bishop, Sally Fallon and Mary G. Enig, PhD

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The advice to make homemade baby formula as an alternative to commercial formula has been one of the most controversial positions taken by the Weston A. Price Foundation -- and also one that has elicited the most grateful praise.

While government officials and orthodox pediatricians are often appalled at the thought of a parent mixing up baby formula -- and one based on raw milk, no less -- the feedback we have received from parents has been extremely positive.

Some breastfeeding advocates have also criticized our stance, claiming that by providing a more healthy alternative to commercial formulas, we are discouraging breastfeeding. Make no mistake: the best food for baby is breastmilk from a healthy mother.

However, many situations call out for a good substitute: adopted and orphaned babies, babies born to mothers with serious health problems, and babies whose mothers do not have enough milk (a situation that *does* happen occasionally) deserve to receive something better than commercial formula.

The following information has been compiled by the authors over a period of several years and should cover most situations encountered by parents giving homemade formula to their babies.

HOMEMADE FORMULA RECIPES

Milk-Based Formula

Makes 36 ounces

Our milk-based formula takes account of the fact that human milk is richer in whey, lactose, vitamin C, niacin, and long-chain polyunsaturated fatty acids compared to cow's milk but leaner in casein (milk protein).

The addition of gelatin to cow's milk formula will make it more digestible for the infant. Use only truly expeller-expressed oils in the formula recipes, otherwise they may lack vitamin E.

The ideal milk for baby, if he cannot be breastfed, is clean, whole raw milk from old-fashioned cows, certified free of disease, that feed on green pasture. For sources of good-quality milk, see www.realmilk.com or contact a local chapter of the Weston A. Price Foundation.

If the only choice available to you is commercial milk, choose whole milk, preferably organic and unhomogenized, and culture it with a piima or kefir culture to restore enzymes (available from G.E.M. Cultures 707-964-2922).

2 cups whole milk, preferably unprocessed milk from pasture-fed cows

1/4 cup homemade liquid whey (See recipe for whey, below)

4 tablespoons lactose*

1 teaspoon bifidobacterium infantis**

2 or more tablespoons good quality cream (not ultrapasteurized), more if you are using milk from Holstein cows

1 teaspoon regular dose cod liver oil or 1/2 teaspoon high-vitamin cod liver oil*
1 teaspoon expeller-expressed sunflower oil*
1 teaspoon extra virgin olive oil*
2 teaspoons coconut oil*
2 teaspoons Frontier brand nutritional yeast flakes*
2 teaspoons gelatin*
1 7/8 cups filtered water
1/4 teaspoon acerola powder*

*Available from Radiant Life 888-593-8333

**Available from Natren 800-992-3323 or Radiant Life 888-593-8333

Add gelatin to water and heat gently until gelatin is dissolved. Place all ingredients in a very clean glass or stainless steel container and mix well. To serve, pour 6 to 8 ounces into a very clean glass bottle*, attach nipple and set in a pan of simmering water.

Heat until warm but not hot to the touch, shake bottle well and feed baby. (Never, never heat formula in a microwave oven!) Note: If you are using the Lact-Aid, mix all ingredients well in a blender.

Variation: Goat Milk Formula

Although goat milk is rich in fat, it must be used with caution in infant feeding as it lacks folic acid and is low in vitamin B12, both of which are essential to the growth and development of the infant. Inclusion of nutritional yeast to provide folic acid is essential.

To compensate for low levels of vitamin B12, if preparing the Milk-Based Formula (above) with goat's milk, add 2 teaspoons frozen organic raw chicken liver, finely grated to the batch of formula. Be sure to begin egg-yolk feeding at four months.

Liver-Based Formula

Makes about 36 ounces

Our liver-based formula also mimics the nutrient profile of mother's milk. It is extremely important to include coconut oil in this formula as it is the only ingredient that provides the special medium-chain saturated fats found in mother's milk. As with the milk-based formula, all oils should be truly expeller-expressed.

3 3/4 cups homemade beef or chicken broth
2 ounces organic liver, cut into small pieces
5 tablespoons lactose*
1 teaspoon bifidobacterium infantis**
1/4 cup homemade liquid whey (See recipe for whey, below)
1 tablespoon coconut oil*
1 teaspoon cod liver oil or 1/2 teaspoon high-vitamin cod liver oil*
1 teaspoon unrefined sunflower oil*
2 teaspoons extra virgin olive oil
1 teaspoon acerola powder*

Simmer liver gently in broth until the meat is cooked through. Liquefy using a handheld blender or in a food processor. When the liver broth has cooled, stir in remaining ingredients. Store in a very clean glass or stainless steel container.

To serve, stir formula well and pour 6 to 8 ounces in a very clean glass bottle. Attach a clean nipple and set in a pan of simmering water until formula is warm but not hot to the touch, shake well and feed to baby. (Never heat formula in a microwave oven!)

Fortified Commercial Formula

Makes about 35 ounces

This stopgap formula can be used in emergencies, or when the ingredients for homemade formula are unavailable.

1 cup Mead Johnson low-iron, milk-based powdered formula
29 ounces filtered water (3 5/8 cups)
1 large egg yolk from an organic egg, cooked 3 1/2 minutes (See recipe for egg yolk, below)
1 teaspoon cod liver oil or 1/2 teaspoon high-vitamin cod liver oil

Place all ingredients in a blender or food processor and blend thoroughly. Place 6–8 ounces in a very clean glass bottle. (Store the rest in a very clean glass jar in the refrigerator for the next feedings.)

Attach a clean nipple to the bottle and set in a pan of simmering water until formula is warm but not hot to the touch, shake well and feed to baby. (Never heat formula in a microwave oven!)

Egg Yolk for Baby

Egg yolk should be baby's first solid food, starting at 4 months, whether baby is breastfed or formula-fed. Egg yolks from pastured hens will contain the special long-chain fatty acids so critical for the optimal development of the brain and nervous system.

The whites may cause an allergic reaction and should not be given to baby until he is at least one year old.

1 organic egg from a pasture-fed hen
1/2 teaspoon grated raw organic liver, frozen for 14 days (optional)
pinch seasalt

Boil egg for 3 1/2 minutes. Place in a bowl and peel off shell. Remove egg white and discard. Yolk should be soft and warm, not hot, with its enzyme content intact. Sprinkle with salt.

If you wish to add liver, grate on the small holes of a grater while frozen. Allow to warm up and stir into egg yolk.

Homemade Whey

Makes about 5 cups

Homemade whey is easy to make from good quality plain yoghurt, or from raw or cultured milk. You will need a large strainer that rests over a bowl. Line the strainer with a clean linen kitchen towel or several layers of cheesecloth.

If you are using yoghurt, place 2 quarts in the strainer lined with a tea towel. Cover with a plate and leave at room temperature overnight. The whey will drip out into the bowl. Place whey in

clean glass jars and store in the refrigerator.

If you are using raw or cultured milk, place 2 quarts of the milk in a glass container and leave at room temperature for 2–4 days until the milk separates into curds and whey.

Pour into the strainer lined with a tea towel and cover with a plate. Leave at room temperature overnight. The whey will drip out into the bowl. Store in clean glass jars in the refrigerator.

Source: Nourishing Traditions by Sally Fallon with Mary G. Enig, PhD.

The following questions have been compiled by the authors over a period of several years and should cover most situations encountered by parents giving homemade formula to their babies.

Mixing the Formula

Q: When I give the formula to my baby, the oils float to the top and the baby ends up getting a lot of oil that makes him gag. So he ends up not getting all the oil in the formula.

A: Try this: gently warm the amount of formula you are going to give the baby, and then blend in the blender. The baby most likely will finish taking the formula before the oils separate. You can also give the cod liver oil separately, with an eye dropper, to ensure he is getting all he needs.

Using the Lact-Aid

Q: In order to continue to nurse while I am giving formula to my baby, I am trying to use the Lact-Aid device (which carries the formula through a small tube that the baby takes in his mouth while also suckling on the breast). But the formula is too thick and keeps clogging up the tube.

A: Be sure that the formula is well blended (in a blender) before putting it in the Lact-Aid and also that it is warm enough. It is best to use the Lact-Aid with raw milk, not cultured milk, as the latter tends to be thicker. You may also try leaving out the gelatin. One other option is to add about 1/4 cup more water to the formula. The nutrients will be less concentrated, but he is also getting your breast milk.

Additive in Acerola Powder

Q: I notice that the NOW brand acerola powder for the formula contains maltodextrin. I am concerned about giving any additives to my baby, especially one derived from corn.

A: At the moment, the only acerola powder available to us is the NOW brand, which contains maltodextrin as a flowing agent. Acerola powder really does get caked up without some kind of agent. So, until we find a brand with a better flowing agent, this is the best we can do. Baby really does need extra vitamin C and the amount of maltodextrin is very small.

Reaction to the Formula

Q: My baby threw up repeatedly from the formula. Through a process of elimination, I found that my baby was having a severe reaction to the added nutritional yeast. My baby was born with a very weak system and we, her parents, are very sensitive also. What does a parent do for what's missing without the nutritional yeast?

A: The yeast is not absolutely necessary in the cow's milk formula but it is in the goat milk formula. If goat milk is the only milk available to you, then switch to the liver-based formula.

Spitting Up

Q: What modifications do I make if my baby is spitting up frequently?

A: If you are using the cow's milk formula, first try eliminating the nutritional yeast, which may be causing the problem. If that does not work, then switch to the goat milk formula; if the problem persists, try the liver-based formula. We can cite several examples of babies who had extreme reactions to any milk-based formula (including projectile vomiting) who did beautifully on the liver-based formula.

Commercial Formula Brands

Q: Is it possible to use other commercial brands of formula when making the Fortified Commercial Formula recipe? I've seen other suggestions made on mercola.com.

A: The only formula brand we recommend is the one made by Mead Johnson. It is the only commercial formula that we know of that uses lactose and it also contains coconut oil. The recipe should be made up for one day only. The Mead Johnson formula is only a stop-gap formula to be used in emergencies or when the ingredients for homemade formula are temporarily unavailable.

Powdered Whey

Q: Can I use dry milk powders from high-quality sources like Garden of Life 's Goatein, if I can't find a good source of raw or organic milk?

A: We *do not* recommend powdered goat whey -- it is lacking in casein. And no matter how carefully it is processed, whey proteins are very fragile and the proteins are going to be altered in processing -- that is why scientists do not use whey-based feed in animal experiments. Instead, they use dried casein, which is a much less fragile protein.

We heard from one parent in California who was using Goatein, when she could have gone out to the store and bought raw milk. If you can't get raw milk, you should make the meat-based formula. Powdered whey is not appropriate -- this is a *whole foods* formula.

Making Whey

Q: I'm having trouble getting raw milk to separate to make fresh whey. Basically it sours but never separates. One recipe for whey calls for bringing milk with added salt to a boil, adding 2 tablespoons lemon juice and stirring until it is curdled. Is it OK to make whey this way?

A: It takes longer to make fresh whey from raw milk than it does from yoghurt, sometimes up to five to six days for the milk to really separate, especially in cooler weather. Set raw milk on the counter in an airtight glass container. When the milk looks really awful, then you know that it has separated.

If you are still having trouble, make whey out of already cultured milk (yoghurt or kefir) or with a top brand of commercial whole milk yoghurt, such as Seven Stars Farm or Brown Cow. With yoghurt you can make whey overnight. Making whey by adding lemon juice to boiled milk negates all the good things about your raw milk, and you will not be putting back any good enzymes or bacteria, which is what happens in yoghurt making.

Freezing the Formula

Q: Can I freeze the formula? What is the best method to thaw? I am guessing warm water. I would freeze the formula in mason freezer jars that are 8-ounce capacity.

A: We recommend making the formula fresh daily -- this is part of your new baby routine. The exception might be when you are traveling and yes, you can set the jars in warm water to thaw.

However, raw milk may be frozen with no ill effects. Many parents must drive long distances to pick up their raw milk, and the solution to this is to obtain it in large quantities and freeze it. When the raw milk thaws, there will be small clumps of cream that can be smoothed out with a whisk or by putting the milk in a blender.

Refrigerated Ingredients

Q: Which of the added ingredients should be refrigerated?

A: Sunflower oil and bifidum; keep the cod liver oil in a cool, dark place.

Is Bifidum Infantis Necessary?

Q: Would you need to put bifidus in the formula if you were using cultured milk? Wouldn't cultured milk contain bifidus?

A: No, *bifidum infantis* is a beneficial gut flora that predominates in the infant until age 7. Infants can't get it except from the mother in the birth canal, and then it's still helpful to get more.

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Once Scrawny, Now Ripped

My son was born at 6 pounds, 4 ounces. By the time I got him home and weighed again, he was down to 5 pounds, 12 ounces. Scrawny! The first week of his life I attempted to nurse, but my milk never came in sufficiently enough to satisfy him. He was starving and got lighter before I got smarter.

First I tried a store-bought organic powdered baby formula. It was thin and I felt terrible giving it to him. I tried adding oils, but felt terrible not knowing what was the best thing to add to help him grow. I had known about the baby formula recipe, but in rural Alaska could not get all the ingredients. Then I learned I could get them from Radiant Life.

At week three of Brody's life he got his first shot of real, healthy, food. We noticed an immediate difference. He stopped fussing. He slept better. His color improved. His hair started coming in. He acted happy. He gained weight, not the doughy, roly, fatty weight but a perfectly proportioned body with extra girth at the joints. When he was 3 1/2 months old we began giving Brody organic, 3-minute egg yolks.

Brody is a healthy, happy, smart, inquisitive little guy. He is cute and funny and has a natural charisma that draws people's attention to him. Everyone always comments on how tall he is and how handsome. Most people think he is at least 2 years old when he is barely a year. He has

defined biceps and triceps. His calf muscles are firm and long.

Once when strolling him through the Anchorage airport a young man walked up to me and said to Brody, "Hey, little man!" Then he turned to his 20-something buddies and said, "Dudes! Check him out. He's one ripped up little dude." They then all fussed over him and told him how buff he was. I can only attribute it to his wonderful nutrition.

Lynn Harris, Fairbanks ,Alaska

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Making Homemade Baby Formula

My adopted son Tate started on the homemade raw milk formula when he was three days old – and has thrived on it. Since I knew I would be making formula for my baby, I was able to prepare ahead of time.

I love to cook, but like most people, I took one look at the raw milk formula in Nourishing Traditions and was a little apprehensive with the long list of ingredients. Actually, I added one other ingredient -- 1-2 tablespoons cow colostrum to each batch.

I knew that sleep deprivation was in my future! Nevertheless, I forged ahead with optimism, and to my great delight, after the first few times of making the formula, it became easy as baby-pie! It only takes 20 minutes to make from start to finish, including clean up!

Here are some of my tricks. First, before Tate arrived, I made ice-cube portions of the whey, cream and colostrum. My raw milk dairy farm has the most wonderful milk, but cream is hard to come by.

I also opted to not make my own whey since my husband and I enjoy drinking the milk. So I ordered several gallons of whey, one gallon colostrum and one gallon of cream from Organic Pastures in California (www.organicpastures.com). It comes frozen and they assured me it was perfectly fine to thaw and freeze again in the ice cube trays.

A typical cube section in a tray equals two tablespoons. This is the perfect amount for the formula; four tablespoons or two cubes for the whey and two tablespoons or one cube for the cream and colostrum.

Here's my early morning routine. First I rinse off everything with hot water to make sure there is nothing foreign on my utensils. I fill an 8-cup glass measuring bowl with a pour spout with 2 cups of filtered water, then scoop out 2 tablespoons to make 1 7/8 cups.

I pour this into a stainless steel pot and add the gelatin. I turn the stove on between low and medium to just warm the ingredients, not boil. Then I add 2 frozen cubes of whey, and 1 each of cream and colostrum.

I also add the coconut oil to the pot so that it melts sufficiently. In the same measuring bowl I used for the water, I add the milk and the rest of the oils and dry ingredients (which are available at most health food stores and/or www.radiantlifecatalog.com , (888) 593-8333).

By the time I am done with that, the frozen ingredients are melted and I add them together in the big glass measuring bowl.

At this point I blend the formula in the blender. I found when left unblended the oils in the formula do not combine well enough. Be sure not to blend for too long, as the cream may curdle.

Then I pour the formula back into the measuring bowl, divide it into glass baby bottles, add the nipples and tops, and that's it! Even with sleep deprivation, I find this process to be easy and doable.

For the actual feedings, I use a bottle warmer that heats with steam instead of going to the stove to boil water each time. When you have a hungry baby, as many of you know, warming a bottle is something you want to happen sooner rather than later.

Once you do it a few times, it's easy ... and our baby has thrived on the formula!

For those adoptive parents out there, please feel free to contact me for extra support and encouragement. (jen@nourishingconnections.org).

Jen Allbritton, CN, Evergreen, Colorado

Brainwashed

Breast milk is best. Cow's milk is for baby cows. Breast milk boosts your baby's immune system. Formula can cause your baby to have allergies to food.

I was brainwashed (in a good way, mostly) by multiple sources, including my Lamaze teacher/lactation consultant, health articles, etc. I was so adamant that I would not use formula -- until little Zachary at 2 months old was not thriving and almost admitted to the hospital because I did not have enough milk to feed him.

When I realized this I went to the store and bought formula to save my baby's life. At the same time, a friend ordered the ingredients for homemade formula for me from Radiant Life. Zachary took commercial formula while I got educated and brave enough to trust raw milk for my baby.

I started slowly, gradually increasing the ratio of the homemade formula and eliminating the commercial one. It took about two months to have Zachary exclusively on the homemade formula. He loved it then and he loves it now!

Just on the formula and an occasional raw egg yolk he reached 23 pounds at one year! I am so grateful to have witnessed this miracle. My baby was starving but he not only made it to his year birthday, he got such a wholesome formula that even when my other children got sick, he did not. If he did it was almost not noticeable.

So maybe breast milk is best, but when it is not possible cow's milk can be for babies if you apply it to the homemade formula using raw milk. This formula did boost my baby's immune system and so far he has no allergies to any food we have given Zachary. I recommend this formula to anyone and for any baby. It is amazing!

Bernadette Gewondjan, Livermore ,California