



**WARNING:**

## Homemade Formula Recipes Are Not a Safe Option for Formula Shortage

As the formula shortage worsens, parents and caregivers find themselves in emergency situations where they cannot find baby formula. Shortages have caused parents and caregivers to search for other options to feed their babies. Unknowingly, some of the options may put their baby's health at serious risk.

The NJ Poison Control Center warns families of the misinformation circulating online and on social media claiming it is safe to dilute (watered-down) formula or use homemade/Do-It-Yourself (DIY) recipes as alternatives. **Neither of these options are safe alternatives, and both can result in serious harm to infants.**

1-800-222-1222



**New  
Jersey  
Poison  
Center**

NJ Poison Control Center 1-800-222-1222

Even the best intentions can have devastating results.

Although it may seem safe to use substitutes or make homemade formula to feed your baby, it can be very dangerous and potentially life-threatening.


*Diane Caletto*

Executive and Medical Director

[NJ Poison Control Center /](#)

[Rutgers New Jersey Medical School](#)





Shortages of baby formula may lead to the use of unsafe substitutes such as rice drinks, goat's milk, homemade formula, almond milk, cow's milk, diluted (watered-down) formula, [honey](#), and protein shakes.

The use of any substitute to formula or breast milk can quickly lead to severe nutritional deficiency.

Commercial/manufactured infant formula and human breast milk contain essential micronutrients and vitamins babies need to have at each feeding.

These additional nutrients are essential to their healthy growth and development.

It is important for parents and caregivers to make sure they do not feed their baby any products that do not contain the necessary daily nutrients.

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# American Academy of Pediatrics (AAP)

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AAP has issued [new guidance](#) to help parents and caregivers struggling to find baby formula as the shortage worsens.

**However, this new advice is ONLY for emergency situations where baby formula cannot be found.**

These alternatives are only meant to be used for a short period of time; they cannot be used as permanent alternatives to baby formula.

**NEW GUIDANCE  
FOR FORMULA  
SHORTAGE**

# *Diane Calello*

If you are not able to get your baby's formula, it's important to speak with your child's pediatrician before making any changes.

Your pediatrician is a trusted source and can provide guidance as to the safest, available options, for your baby, especially if your baby has special health needs.

**Do Not Make Or Feed  
Homemade Formula**

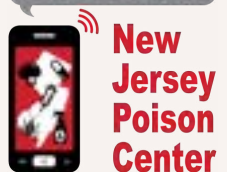
**BABIES HAVE BECOME SICK**

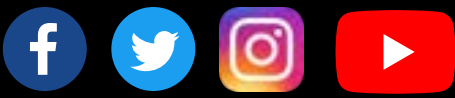
## **Serious Health Effects Reported**

Serious side effects have been reported after infants were given formula that does not meet the U.S. Food and Drug Administration's (FDA) nutritional standards.



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**Notes from the Field**

**Vitamin D-Deficient Rickets and Severe Hypocalcemia in Infants Fed Homemade Alkaline Diet Formula — Three States, August 2020–February 2021**  
 Diana P. Cahill<sup>1,2</sup>, Mohamed Jaleel<sup>1,2</sup>, Melissa Yu<sup>3</sup>, Joseph Zarog<sup>4</sup>, David Rogana<sup>5</sup>, Richard Hambro<sup>1,2</sup>

During August 2020–February 2021, three infants were treated in separate emergency departments in New Jersey, Pennsylvania, and Delaware for symptoms related to consumption of a nutritionally deficient homemade formula based on alkaline diet recipes, with resultant severe hypocalcemia and vitamin D-deficient rickets. Homemade infant formulas and vegan diets might be deficient in essential vitamins and nutrients as has been reported for other formulas (1,2).

**Case 1.** On January 28, 2021, a male infant aged 4 months experienced respiratory distress at home and became unresponsive. Emergency medical services found the infant to be pale, lethargic, tachypneic, and hypoxic (oxygen saturation < 80% [normal > 95%]), and transported him to the hospital, where he experienced several episodes of bradycardia and cardiac arrest despite emergency endotracheal intubation and mechanical ventilation, insertion of a central venous catheter, fluid replacement, and high-dose intravenous calcium. After the infant was successfully resuscitated, computed tomography and magnetic resonance imaging scans indicated that the infant had diffuse hypoxic brain injury. Laboratory evaluation revealed profound electrolyte abnormalities (anion gap acidosis pH 7.47 [normal = 7.35–7.45], lactate 8.3 mmol/L [normal = 0.22–2.98 mmol/L], serum sodium 164 mEq/L [normal = 131–145 mEq/L], potassium 6.9 mEq/L [normal = 3.5–5.5 mEq/L], and calcium 4.0 mg/dL [normal = 8.8–10.8 mg/dL]). Radiographs showed diffuse bone demineralization with flaring and irregularities of long-bone metaphyses consistent with rickets. The child had been fed a homemade formula of six ounces (an unsterilized saline source), hemp seeds, and coconut water for

with rickets. His parents reported transitioning him at age 3 months to a homemade formula made of coconut water, hemp seed hearts, dates, six ounces gel, and alkaline water. He received high-dose intravenous calcium and magnesium and was discharged home after being placed on a diet of commercial infant formula.

**Case 3.** On August 7, 2020, a male infant aged 9 months was evaluated after 5 days of irritability. Physical examination revealed weight and length below the third percentile, frontal bossing (prominent, protruding forehead), decreased tone (inability to sit without assistance), and gross and fine motor delays. Laboratory evaluation showed severe hypocalcemia, no detectable vitamin D, and a thyroid-stimulating hormone level of 94,600 mIU/L (normal = 0.3–5 mIU/L). Long-bone radiographs demonstrated frayed metaphyses and oblique bowing. The patient received diagnosis of rickets and iodine deficiency. His parents reported feeding him homemade formula on an alkaline diet consisting of coconut milk, dates, and six ounces, although the six ounces had been discontinued several months earlier. He was treated with iodine and calcium supplementation and was discharged to a long-term care facility.

Each of these infants had been fed a homemade formula, reported by their parents as the alkaline diet. Recipes associated with this diet, several variations of which can be found online, does not lack essential vitamins and micronutrients such as vitamin D, calcium, and iodine. CDC and the Food and Drug Administration have issued warnings about the use of homemade infant formula.<sup>3,4</sup> These three cases highlight the potential for grave consequences (1,2). Parents should be cautioned to avoid this inappropriate substitute for breast milk or commercial infant formula that can cause hypocalcemic hypocalcemic cardiopulmonary failure, and hypothyroidism, resulting in lasting harm and possibly death.

Human breast milk and commercial infant formula contain vitamins and micronutrients essential for growth and development (5). Infants fed an alternative diet can develop severe deficiencies and experience long-lasting developmental conse-

A recent [article](#) in CDC’s Morbidity and Mortality Weekly Report discussed three separate incidences of infants treated in emergency departments for low calcium levels and vitamin D-deficient rickets after being fed homemade formula.

In addition, infants fed watered-down formula may develop electrolyte imbalance and brain swelling.

# Get Free, Medical Help

**1-800-222-1222**



**NJ Poison Control Center**  
is a medical resource for  
both the public and  
healthcare providers.

If a child is sick after drinking formula or any other product, contact your local poison control center immediately for medical treatment advice.

Call the NJ Poison Control Center at 1-800-222-1222 or [Chat Here](#)  
If someone is not breathing, hard to wake up, or having a seizure, call 9-1-1