Say you are plowing a field on a hot summer day. Say you possess a yak that pulls you and your plow around the field. Say you happen to be thirsty, your gourd is empty and you fancy something creamy and fresh. Hmmm. You happen to notice that something is dripping from your hairy friend’s underside, and not from the bad parts. No one is watching. It is, after all, a draft animal, is it not?

This historic scenario may not be within the breadth of your experience, but you have, likely even in some of your more tender moments, ingested milk that did not come from your mother. Your mother’s bodily fluids may no longer hold much appeal, but milk from our ungulate companions is a nearly unavoidable part of life on Earth. We give a lot of it to our precious little ones, so you should care about milk and, in your capacity as a pediatric medical professional, its chemically enhanced offspring, infant formula.

We know the basics of infant formula, and we know that our patients are not hoofed, but you do not know everything—you are not an obstetrician. As was pointed out to me a while back by a patient’s mother while speaking of her infant daughter: “It’s not an animal, it’s a kid.” That depends on how you define “animal,” but my physical examination suggested that I was not dealing with a goat, although the child had a generous amount of body hair and used all 4 limbs to get around. Furthermore, her mother was the one referring to her child as “it,” a label never to be used by the scrupulous pediatrician. But let us move on. There are about as many formulas as there are male fans of the Twilight movies, that is to say >30 but certainly not >300. As can be expected of the best children’s hospital within a 400-mile radius, our hospital has a multitude of both Twilight fans and formulas, an ample supply of which can be found in each unit’s nutrition room, to which I may soon no longer have access, the reason for which is forthcoming. There are also some interesting things about formula that we can learn together, so we can call this an incomplete waste of time.

You likely sampled suspended antibiotics during your pediatric rotation, and this kind of frivolity apparently did not dissuade you from a career requiring you to coexist with those of the kind who compelled you to participate, at least at work. So what about formula? Maybe you were forced to try some or maybe curiosity has had its way, as it did with me just now. My purpose was to try a few for you, a gesture of goodwill, if you will. A frivolous, random sampling of the formulas in one of our nutrition rooms, to be more specific. I gravitated to some of the specialty formulas to inform you of your more exotic, if less appealing, options should there be no lunch at noon conference.
I will preface this foray into idiocy with the following disclosures: (1) I can hardly tell the difference between chardonnay and Kool-Aid. (2) I may be able to find, somewhere in the depths of the portfolios of some of my mutual fund holdings, that I have a financial interest in these products. However, due to the unflattering nature of some of my comments, my conscience will remain clear.

Here goes, in the order in which they were encountered:

**COMPLEAT PEDIATRIC**

Not a typo but a darn good pun. Intended for 1- to 4-year-olds but apparently not toxic to 44-year-olds. Designed for the dietary restriction–free/NPO/tube-fed set. Exciting ingredients include cranberry juice, coconut and/or palm kernel oil and purees of pea, green bean, peach, and chicken (parts not specified). Cow milk based although lactose free. One of the protein sources is bovine casein, which is the solid portion of milk protein after initial digestion, so it has at least one thing in common with vomit. Tastes like dog biscuit with a touch of sweetness (and I do indeed know). Reminiscent of regular formula followed by a strong pea aftertaste, which makes for some unpleasant burping. Dog biscuit: not too good.

**ROOT BEER SLUSHY**

A good palate cleanser, conveniently also dispensed in the nutrition room.

**NUTREN JUNIOR (VANILLA)**

Intended for “standard tube feeding” or as an oral supplement. Kosher! Also cow milk based yet lactose free. The carbohydrate sources are maltodextrin, which is purified glucose polymers from corn starch, probably from Iowa, and plain old sugar. The fat source is the same as that for Compleat Pediatric (medium chain triglycerides from the same oils), probably not from Iowa. The protein source is that of cow milk (Wisconsin?) with 50% whey content, which is a higher percentage of whey than in straight-up cow milk, so as to aid in digestion through a magical process with which we need not concern ourselves. Tastes vaguely like vanilla pudding with a malty taste. Pretty good. Don’t be afraid to give this to a child, even your own, but do not go out of your way. The fiber in Nutren Junior with Fiber comes from peas, chicory, and fructooligosaccharides (FOS), which come from a host of other fruits and vegetables including blue agave, which is a beautiful and useful plant.

**DRAWER OF NIPPLES**

Not a lecherous artist but the sliding box right below the slushy machine. Also a good name for a heavy-metal band.

**PEPTAMEN JUNIOR (UNFLAVORED)**

Intended for those with impaired gastrointestinal function and promoted as a “low-residue” foodstuff, the lay translation of which can be approximated as follows: “Not as much to clean up.” The carbohydrate components are maltodextrin and sugar, the fat is medium-chain triglyceride from coconuts or palm kernels, and the protein is cow milk whey protein enzymatically hydrolyzed to smaller, more tolerable bits by a protease, the source of which Nestlé politely declined to divulge (trade secret or some such nonsense). It may be porcine in origin, given that they make no claim that Peptamen Junior is kosher, unlike our friend Nutren Junior. Peptamen Junior has guar gum, which, as will be recalled, is endosperm of guar plant beans, which are mostly grown in India and Pakistan. Guar gum is a polysaccharide that acts as a viscosity-enhancing agent, is not digestible by humans, and is heavily used in the fracking industry, which is fracking awesome. Yes, yes, I am procrastinating. So . . . please spare yourself the displeasure of tasting this. It tastes like reflux in a can and is most certainly not unflavored. At least not favorably unflavored. The guar gum is apparently effective given that PJr is somewhat thick, which helps it linger on the palate to an unpleasant degree. Less of a smell than other similar formulas, which is likely a blessing for at least two reasons.

**PEPTAMEN JUNIOR WITH FIBER (VANILLA)**

A substantial improvement in palatability. This is truly a multinational effort: among the other ingredients and locales discussed, the sweeteners are acesulfame potassium (also known as Sunett, made in Frankfort, Germany) and sucralose, which is the headliner ingredient in Splenda (Singapore and Alabama). Why PJrWF(V) needs both sweeteners is a mystery. Synergy?

**ALIMENTUM**

From this formula, we can gather that the average protein-sensitive infant has little to no sense of taste, but it is pretty good right after a swig or two of Peptamen Junior. Smells like urine after a healthy serving of asparagus. There is a lot about Alimentum that I did not know: the protein is hydrolyzed bovine casein protein supplemented with certain amino acids; the carbohydrate sources are sugar and tapioca starch, which is refined glucose
polymers from cassava plants, a tuber native to South America. No corn or gluten. Lactose free so acceptable for grandma. The fat sources are many: safflower oil, which comes from a plant that looks like a yellow thistle and is commercially grown in the western United States; medium-chain triglycerides, again presumably from palm kernel oil and coconut oil (secret formula); and soy oil, which is from . . . edamame. By the way, edamame, which are immature soybeans, were given respectability when the word was added to the Merriam-Webster Dictionary in 2008 along with “dark energy” and “wing nut,” which are terms not to be spoken within earshot of a hospital administrator, who might take it the wrong way. Minor sources of fat, ostensibly for brain and eyeball health, are Cryptothecodinium Cohnii oil, from a marine red algae that makes docosahexaenoic acid and Mortierella alpina oil, from a soil fungus that makes arachidonic acid. Do not skip over the big words. Contains carrageenan, which serves the same purpose as guar gum and is derived from certain types of seaweed, which seems a little like yoga: good in general but kind of icky.

ENFAMIL ENFAGROW PREMIUM CHOCOLATE POWDER
Sadly this is no longer available.

NEOSURE
Designed for preemies and intended to approximate the weight gain and bone mineralization of the “reference fetus,” which is stored in a cage at the American Academy of Pediatrics headquarters next to the reference toddler. Neosure is largely dispensed in a part of the hospital where many of us dare not go, given the high likelihood of an anxiety attack or an uncontrollable desire to flee. Neosure has the extra protein, vitamins, minerals, calories, and love that a NICU nurse demands. Corn syrup solids (also used in hot chocolate mix), safflower oil, medium-chain triglycerides, bovine whey protein concentrate, blah, blah, blah. Tastes like boredom with a metallic aftertaste.

This could go on ad nauseam, figuratively and literally, but my eyes (and likely yours, if you made it this far) are glazing over. As is my tongue. We have perhaps 30 formulas on hand at any given time, which includes a small supply of super-specialty formulas for children with metabolic disease, renal disease, and so on. We have a formula room that is conveniently located adjacent to the hospital medicine offices. We have a person whose job it is to manage the formula room, to stock each unit’s nutrition room with formula, and to whip up whatever special concoction is requested. I went there, rang the doorbell, exchanged pleasantries, and proceeded to make a nuisance of myself for about 10 minutes, during which time I suspect that the woman stationed there made up her mind that I was unstable in several ways. Some of the super-specialty formulas, although they were within arm’s reach, were not amenable for tasting given that a sampling would be tantamount to taking candy from a baby, not to mention a waste of an expensive and rare commodity, and this kind of shenanigan would not be consistent with the hospital’s motto. Some things just need to be left to the imagination.

What have we learned? Some stuff we already knew, some random facts, and the fact that the author displays an effortless tendency to make others around him uncomfortable. Let us wax philosophical and think of things that we can be thankful for, such as the blue agave and newborn screening. We can be thankful that (1) most of us do not need to rely on Peptamen Junior for our nutritional needs, (2) Peptamen Junior is available for those who need it, and (3) we no longer need to mix honey, milk, and cod liver oil to give a child something to eat when human milk is not available or when a regular diet is not possible.

FREE BONUS COMMENTARY
“*This comment is remotely on point for my purposes and was directed at my surgical colleagues, whose habit of rounding at 5 AM was not received favorably by the patient’s mother. That and a rather invasive hunt for a nonexistent bezoar. If the mother was a better hairstylist, the index of suspicion would have been a bit lower, but I felt that my role was to listen and absorb, not to discuss scissor-handling skills or toddler hair fashion.


This will only hurt a little.” Just kidding. “When it’s not just a virus.” Just kidding. “The child first and always.” Just so.