EXCLUSIVE BREASTFEEDING (breastmilk as the only source of milk) of twins and even triplets is well known. This is a report of “exclusive” breastfeeding for 1 year of quadruplets. Exclusive is placed in parentheses because one of the quads has phenylketonuria (PKU) and needed to receive a small amount of special formula without phenylalanine (Phenex-1®) to maintain his serum phenylalanine level between the desired range of 2 to 6 mg/dL. The initial amount of Phenex-1 was usually between 1 and 2 ounces per day; all other milk intake for this infant was breastmilk. Without the diagnosis of PKU he also would be exclusively breastfed.

Mrs. D’s first pregnancy in 1999 was uneventful. She exclusively breastfed this infant until he was 4 months of age, when she was diagnosed with choriocarcinoma. She was treated with vincristine and methotrexate for 4 months. Attempts at a second pregnancy were unsuccessful until artificial insemination (AI) was performed in 2003. This child was exclusively breastfed for 7 months. In 2005, the parents underwent in vitro fertilization (their insurance plan would not cover AI) and quadruplets were carried to term, born on November 25, 2005. Birth weights were: girl #1: 4 pounds 15 ounces; girl #2: 2 pounds 15 ounces; girl #3: 5 pounds 7 ounces. Girl #1 and #2 are identical twins.

The boy weighed 5 pounds; his newborn screening test and subsequent confirmatory tests established the diagnosis of PKU. All three girls were exclusively given breastmilk in the neonatal intensive care unit (NICU) and the boy was receiving only 1–2 ounces per day of the special Phenex-1 formula for the first 6 weeks on life. All infants were discharged at about 4 weeks of age after an uneventful stay in the NICU. As the boy infant grew, the amount of Phenex-1 had to be increased to provide necessary protein without increasing phenylalanine intake. His serum phenylalanine was, with few exceptions, maintained within the desired range of 2 to 6 mg/dL. Solid foods for him were introduced at 4 months of age. Two of the girls did not receive solid foods until 8 months of age; the third girl received solids at 6.5 months of age. At 1 year of age all of the children are still receiving only breastmilk as the source of milk. At 1 year of age the weights of the infants are: girl #1: 16 pounds 8 ounces (<3%); girl #2: 16 pounds 5 ounces (<3%); girl #3: 21 pounds 6.5 ounces (25%), and the boy 22 pounds (25%). All children are in good health with normal development. The first two girls were the smallest and have continued to grow along the same curve below the third percentile. All four infants are still receiving only breastmilk as the source of milk at 12 months of age (Fig. 1).

The capacity of this mother to produce breastmilk is impressive. While the infants were in the NICU, the mother was pumping at least 18 ounces every 4 hours. With six of these pumping sessions per day, that is 108 ounces or 3.24 liters of milk per 24 hours. During her
first pregnancy the mother’s bra size increased from 36C to 38C; with the second pregnancy it increased from 38C to 40C, and with the pregnancy with the quadruplets it increased from 40C to 44DD. The latter cup size has a volume of over 1000 cc (International Playtex Corporation, personal communication). This reflects the substantial growth of milk producing alveolar tissue to enable the production of such significant amounts of milk. One benefit to the mother was a 60-pound postpartum weight loss.

This case report is a reaffirmation of the capacity of the human breast to adjust to differing demands for milk synthesis.

**AUTHOR DISCLOSURE**

The author is Director of the Phenylketonuria (PKU) Clinic at the Penn State Children’s Hospital. He has no other potential conflicts of interest to disclose.