Appendix

Amount of extra Ca supplementation

As optimal growth of preterm infants matches fetal growth [7], optimal Ca and P accretion were predicted using the largest available study of fetal weight gain, including 563480 singletons [23], and fetal whole body analyses [59-62] indicating a Ca content increasing by 0.203 mmol/g and a P content increasing by 0.152 mmol/g fetal body weight. Fetuses under 1000g gained 20-24 g/kg/day [23], which translated into a Ca retention of 4.1-4.8 mmol/kg/d, and a P retention of 3.1-3.6 mmol/kg/d. Fetuses and infants above 1000 g gained 16-19 g/kg/d [23], which translated into a Ca retention of 3.2-3.8 mmol/kg/d, and a P retention of 2.4-2.8 mmol/kg/d under optimal conditions. Any Ca and P supply short of these amounts may lead to mineral deficient bone.

Standard feeding mixtures at the University of Alabama at Birmingham were **Breast milk** with Enfamil human milk fortifier 1pk/25 ml, containing approximately 3.5 mmol Ca and 2.5 mmol P (partly inorganic) per 100 ml, and **Similac Special Care 24**, containing 3.6 mmol Ca and 2.6 mmol P (as potassium phosphate) per 100ml. Therefore, fortified human milk contained almost the same amounts of Ca and P as Similac Special Care 24, thus eliminating the need for separate Ca supplementation schemes.

Below 1000g actual weight: Considering a daily accretion of 4.5 mmol/kg Ca and 3.2 mmol/kg P and bioavailabilities for Ca and P of 50% and 80%, respectively [7,20], enteral daily intakes of 9 mmol/kg Ca and 4 mmol/kg P were desired. To achieve this with 150 ml/kg enteral feedings, the feeding mixture had to contain 6 mmol Ca and 2.6 mmol P per 100 ml. Therefore, feedings for supplemented infants below 1000 g actual weight were supplemented with ad-

ditional 2.6 mmol Ca per 100 ml. The P demand was already met by the standard feeding mixtures. The molar ratio of Ca/P was 2.3.

Above 1000g actual weight: Considering a daily accretion of 3.6 mmol/kg Ca and 2.7 mmol/kg P and bioavailabilities for Ca and P of 50% and 80%, respectively [7,20], enteral daily intakes of 7.2 mmol/kg Ca and 3.4 mmol/kg P were desired. To achieve this with 150 ml/kg enteral feedings, the feeding mixture had to contain 4.8 mmol Ca and 2.3 mmol P per 100 ml. Therefore, feedings for supplemented infants above 1000 g actual weight were supplemented with additional 1.3 mmol Ca per 100 ml. The P demand was met by the standard feeding mixtures. The molar ratio of Ca/P was 2.1.