



whereas the corresponding figures in group II were 1,902 kcal, 75, 67, and 234 g . The results show that surgical stress and inadequate nutrition support during D0-1 caused the deterioration of their protein-energy status at D2 evidenced by the decreases in their body composition parameters and serum total protein, albumin, transferrin, RBP, apo A-I, apo B, urea nitrogen, ALT and GGT levels. In addition, there were decreases in Hb, Hct, and RBC counts. After tube feedings for 3-11 days, the beneficial effects of Isocal RTU or RBF on protein-energy status were shown by no further significant decreases in their body fat and fat-free mass, significantly increases in their serum total protein, albumin, transferrin, RBP, apo A-I, apo B, urea nitrogen and creatinine levels and their nitrogen balances were markedly less negative. The significant increases in urinary total carnitine excretion at D1 were due to surgical stress stimuli. Both groups had inadequate carnitine intakes during receiving enteral formulas that lead to negative carnitine balances.

Microbiological safety of enteral formulas and feeding sets were assessed. The first 20 patients on Isocal RTU were fed by continuously closed system, the second 20 patients on Isocal RTU by continuously semi-closed system, whereas the remaining 20 patients on RBF were fed by opened intermittent system. Bacterial contamination was determined by pour plate method with dilution before and at the end of each feeding period. Isocal RTU in Tetrapak was sterile. After it was hung for 12 hrs, in the closed or semi-closed system, it was bacterial contaminated. RBF was bacterial contaminated prior to the administration and all were contaminated at the end of 1 to 1 1/2 -hr feeding. The feeding set was also bacterial contaminated. All bacteria identified in this study are commonly found at Ramathibodi Hospital.