digestive tract that interfere with protein intake, prolonged vomiting, diarrhoea, food intolerance, depression, fear of weight regain, alcohol consumption, inadequate financial resources, inadequate chewing, and low-calorie diets all may contribute to reduced protein consumption. Inadequate calorie and protein intake is also often associated with anaemia, as well as with zinc, vitamin B6 and B12, folic acid and copper deficiencies(902, 903).

Research has shown that protein-calorie malnutrition is not particularly prevalent after either a SG or RYGB procedure. However, most studies that have looked at this were limited to short-term follow-up and primarily evaluated albumin and total protein levels, which certainly could result in underestimating actual protein deficiency prevalence(446, 508, 902, 904) It is important to emphasize that, in patients undergoing malabsorptive surgeries — like BPD-DS, OAGB, and SADI — malnutrition occurs in 7-21% of patients. In these patients, there is an even greater need for protein supplementation to compensate for losses (an average of 30g/day) that result from marked malabsorption(902, 904, 905).

Oedema is one possible indicator of protein-energy malnutrition. However, it also can mask weight loss and muscle mass loss. Thus, besides obtaining a detailed dietary history, clinical/anthropometric assessments are necessary for proper diagnosis.

To properly assess protein intake among AGB, SG and RYGB patients, clinical practice recommendations are currently for at least 60g to 120g/day or 1.5g/kg/day of ideal body weight (IBW). Prescribing higher amounts of daily protein - up to 2.1g⁄kg⁄day of IBW – requires a personalized assessment. The malabsorptive procedures BPD-DS, OAGB, and SADI are associated with higher risks of protein malnutrition. Therefore, protein intake of at least 90g/day or as much as 2.1g/kg of IBW is needed. Whey protein, casein, and protein drinks are recommended as additional supplementation, especially in the initial stages and up to the point when patients can consume the appropriate amount of protein in their diet(900).

Iron, Vitamin B12 and Folic Acid: Due to the lower intake of food sources, hypochlorhydria, the surgical exclusion of the site of intestinal absorption in the small intestine (RYGB), and the hastened passage of food in the first segment of the small intestine, there is a high incidence of iron deficiency anaemia in patients undergoing either a RYGB or SG procedure. The same is observed after malabsorptive surgeries (BPD-DS, OAGB and SADI). Especially high-risk populations are females at a fertile age, adolescents, and athletes(33, 446, 508, 509, 855).