

# Nutritional therapy and Surgery

## Terapia nutricional y cirugía

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Concern about the most adequate and timely nutritional therapy is evident and has been documented since 1500 BC, when Egyptians were known to provide nutrients and medications in the form of enemas <sup>(1)</sup> to wounded soldiers at war to cure or prevent their death. Since then, the progress in knowledge, techniques and instruments that allow the supply of food to the digestive tract and bloodstream, is undeniable<sup>(1,2)</sup>.

Regarding nutritional requirements, pillars for the estimation of nutritional requirements as we understand it today include the development of methods for measuring urea (Folin, 1905), formulas to estimate energy expenditure at rest (Harris and Benedict, 1919), description of the increase in nitrogen loss according to the magnitude of the injury (Cuthberson, 1932), the concept of hyperalimentation in cancer patients (Tui, 1944), and intakes of 30 to 46 Kcal / Kg to achieve positive nitrogen balances in patients requiring gastrectomy or craniotomy (Riegel, 1947) <sup>(1-3)</sup>, amongst others.

Acknowledging that a hospitalized patient is in a state of frailty is of utmost importance. Consequently, nutritional medical therapy must meet the characteristics of relevance, opportunity, sufficiency and quality, recognizing the rights these patients are entitled to and healthcare professionals as guarantors of these rights<sup>(4)</sup>.

In 1936 Dr. Hans Selye described the “General adaptation syndrome”,

and coined the term “stress”, which he defined as a systemic mechanism conditioning the response to harmful stimuli. This process was divided into three phases: alarm reaction, resistance and exhaustion (Figure 1). Medical intervention, which included nutritional therapy, had the ability to extend the resistance period and achieve recovery<sup>(5)</sup>.

A clear knowledge of normal human physiology, and the alterations that the metabolic response to stress and fasting induce, are essential requirements to establish an appropriate nutritional medical therapy. The identification of the hormonal environment to which the patient is being exposed to will allow a correct implementation of diet therapy, oral nutritional supplementation, enteral or parenteral nutrition.

In surgical patients, adequate nutritional therapy during the perioperative period is of vital importance.

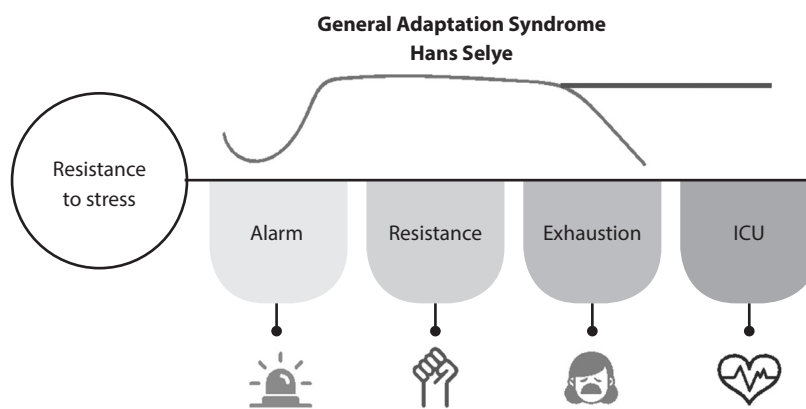


Figure 1. General Adaptation Syndrome<sup>(5)</sup>.

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It comprises the identification of patients at risk of malnutrition before surgery, initiating the appropriate nutritional medical therapy with the required substrates with proven benefit, decreasing the fasting period prior to surgery, using a carbohydrate load two hours before the surgical procedure to decrease insulin resistance and all the deleterious effects that it entails, restarting oral feeding and nutritional therapy early in the postoperative period, and assessing the effects of nutritional intervention <sup>(6-7)</sup>.

In addition to providing evidence-based tools to achieve the best outcomes in our patients, which is the ultimate goal of all our interventions, this issue of *Revista de Nutrición Clínica y Metabolismo* pays a sincere tribute to two giants and pioneers of Parenteral Nutrition: Doctors Stanley J. Dudrick and José Félix Patiño Restrepo. All our admiration and appreciation to these surgeons who not only dedicated their lives to patients who could not tolerate intestinal feeding, but left a legacy of perseverance, chivalry, modesty, and friendship (Figure 2).



**Figure 2.** Dr. Charles E. Bermúdez with Dr. Stanley Dudrick (left) and with Dr. José Félix Patiño Restrepo (right).

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