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## IMPROVING VITILIGO ANTIOXIDANT STATUS BY TO DEB THEORY

### ▪ BACKGROUND:

Mammalian pigmentation results from the synthesis and accumulation of photo protective epidermal melanin. Melanin was formed from the amino acid precursor L-tyrosine within specialized cells, the melanocytes. Its deficiency causes a dermatologic pathology called: Vitiligo which is a depigmentation disorder characterized by the loss of melanocytes from cutaneous cells. Its pathogenesis has not yet been clarified. Multiple mechanisms such as autoimmune, neuronal, endocrine and oxidative stress resulting from unbalanced antioxidant defense system have been proposed. In addition, there is an autoimmune theory which includes the human leukocyte antigen (HLA) system in the skin coordinates the pigmentation and immune response and could be implicated in the pathogenesis of vitiligo. Human leukocyte antigen HLA-G is a nonclassical, major histocompatibility complex class I molecule expressed in the extravillous cytotrophoblast at the feto-maternal interface. It is known to protect the fetus from maternal cellular immunity. Analogically, it could be implicated in the pathogenesis of autoimmune diseases such as vitiligo.

### ▪ AIMS:

In the first, we aim to evaluate the beneficial effects of the application of the principles of the DEB theory (especially: organisational uncoupling of metabolic modules and strong and weak homeostasis). Secondly, we project to educate vitiligo patients and ameliorate the treatment by a supplementation (increasing body reserve) with antioxidant vitamins (A, C, E) and minerals (zinc, selenium). Then, we proceed to quantify the antioxidant status (TAS) which is close to the body reserve. Our principal aim is to demonstrate that all mass fluxes, in vitiligo patients, are related to linear combinations of assimilation, dissipation and growth. If reserves are omitted, there is not enough flexibility to capture product formation and explain indirect calorimetry.

### ▪ MATERIALS AND METHODS:

We studied 60 vitiligo patients and 62 healthy controls. The sex ratio male/female in vitiligo patients was  $(27/33 = 0.81)$ . Patients with vitiligo were divided into three groups, according to the association with diabetes or dysthyroidism. The total antioxidant status (TAS), catalase (CAT), superoxide dismutase (SOD), and plasma malondialdehyde (MDA) were measured by adaptable kits. For the immunologic theory, we proceed by studying the expression of HLA-G in cutaneous biopsy specimens was investigated by immunohistochemical analysis.