

Uneasy Acceptation of Novelty Impairs Any Solution For Fattening/Diabetes

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In my first insights, the hot hospital environment was harmful for diarrheic infants. I showed the possibility of slowdowns in nutrient absorption/progression in correlation with metabolic slowdowns and high BG [1-3]. For these demonstrations, I studied xylose absorption in animals and humans in a hot environment in comparison with a cold environment.

Further studies explained the damage mechanism: intestinal slowdown in progression/absorption implied long nutrient permanence in the intestine [4-9]. Every meal raises a conflictual process between the absorption of energy rich nutrients (Nutrition) and the nutrient exploitation by bacterial growth (decomposition). This competition is similar to that in the outside world: food requires accurate storage and has to be consumed before decomposition. Bacteria double every 10 - 20 minutes in the warm, humid, oxygen poor intestinal environment. The growth of bacteria on intestinal mucosa elicits an immune response [8,9]. The ensuing inflammation eliminates the immune stimulants with damages to the host's tissues [10-14]. Suppression of any decomposition inside the alimentary canal would much advantage diarrheic infants. Here, we had an important achievement. Mothers and adults in general can learn and recognize hunger sensations after adequate teaching and training [15] and an Initial Hunger Meal Pattern can be constructed (IHMP = Three IH arousals per day). The three arousals were giving a precise, subjective indication for daily energy intake as well as for adaptations to expenditure. The precise indication on limits and the experiencing small delays eliminated any anxiety about becoming weak and fading for hypoglycemia hours before the next mealtime. Although this view changed the way to treat patients like the Semmelweis's views on sterility changed surgical interventions, I encountered only opposition at any report. The application of these views in hospital required scientific support by published demonstrations. At last, a friend (!) published my first international paper on "Initial Hunger" (IH) [4]. At this point science revealed its obscure site. Scientific Journals have different readership volumes and this means different power (impact factor). The truth of a notice depends on the readership width and thus on the Journal that accept to publish the notice. This means that current Science is directed by the principle of Authority. The criticisms toward my findings persisted much the same: We do not understand, the paper requires the editing by an English professor of Medicine. The paper edited by Professor Garza (Cornell University) was at last published [5,6]. I directed a third level Gastroenterology Unit in a Pediatric Hospital and brought to conclusions my early insights: The appearance in Scientific Journals of insulin resistance and of the associated overall sterile inflammation allowed an extension of intestinal prevention to the prevention of all body risks [10-14]. The mucosal tolerance by Brandtzaeg explained the vascular and tissue damages in all body in absence of intestinal involvement [14]. In the subsequent 15 years, my huge accumulation of lab data allowed the elaboration of findings and concepts that I never had imagined in the previous decades.

IHMP decreased energy intake, mean preprandial BG, HbA1c, body weight, insulin resistance, functional disorders and fecal energy loss. In all studies, we found a consistent minority (30%) that already at recruitment showed low BG and did not respond with BG decreases during IHMP [16-19]. The sequence of 21 preprandial BG measurements in a week (Mean BG) poorly wavered in a week and after 5 months. The confidence interval around the mean was 4 - 6 mg/dL [17,18]. The established level of energy availability characterized the personal nutrition and differed from an individual to another. The BG stable through months characterized the safety (health) degree of individual meal pattern. Low preprandial Mean BG (76.6 ± 3.7 mg/dL) was associated to an even energy balance in blood (insulin

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sensitivity) as well as in the body (no fattening) [16-18]. Mean BG assessed the degree of an individual meal pattern in a scale of human risks from a null extreme by an even balance (homeostasis, insulin sensitivity) up to an overall sterile inflammation, and full development of vascular and many malignant diseases at the other extreme [10-14, 16-20]. Broadly speaking, meals during high BG (and high RMR) elicit negative feedbacks. First of all, a depression of nutrient progression and absorption [1-3,7-9,21], bacterial growth on mucosa, no hunger sensations and functional disorders [5,16-19]. The consistency of the findings and their initial reproductions by independent AA [22,23] may abate any doubt about Truth.

Validity of a Portable Device for BG Measurements

The training was accomplished by home BG preprandial measurements, with a portable device (a portable potentiometer for whole BG measurement with the hexokinase method [24]: Glucocard Memory; Menarini Diagnostics; Florence, Italy). The subject had to personally measure BG with the portable instrument against the auto analyzer in the lab as he/she did at home. At blood sampling, we supervised the performance of the comparison. The auto analyzer was checked every morning in comparison with the other 50 laboratories in Tuscany. A difference in BG from the mean had to remain within 1% every day. The heparinized blood sample for the auto analyzer was immediately centrifuged and measured with the hexokinase method. In the meantime, the patient performed his/her measurements on the same blood sample by glucometer. The auto analyzer obtained a mean \pm SD of 89.9 ± 11.3 mg/dL (N = 85). Subjects measured 89.0 ± 12.5 mg/dL. The mean difference (0.9 ± 7.1) was not significant. On absolute values, the mean difference was: 5.7 ± 4.3 mg/dL with no bias. This error is within the spontaneous BG wavering of 10% every 12 minutes and is too low (6.0%) to confound results.

The Resting Metabolic Rate and the Total Daily Energy Expenditure at recruitment and during IHMP

In 24 infants, we measured their Resting Metabolic Rate by indirect Calorimetry and the Total Energy Expenditure by doubly labeled water [25]. Energy intake decreased from 85.7 ± 15.3 to 70.3 ± 15.8 kcal/kg/d ($P < 0.001$). RMR decreased from 58.6 ± 7.8 to 49.0 ± 9.1 kcal/kg/d ($P < 0.001$) and TEE decreased. These figures confirmed a 15, 5% decrease of both expenditures under IHMP in comparison with values at recruitment. These findings validated the energy intake reports by diary. The passage from insulin resistance at recruitment to insulin sensitivity during IHMP is associated with a significant decrease in RMR and in total daily expenditure.

Changes in IHMP are indicated (measured) by changes in Mean BG that are associated to changes in insulin sensitivity/resistance and weight loss/fattening [16-19]. Thus Mean BG characterizes the individual meal pattern for the better as well for the worse health. The errors in BG subjective estimation and in BG objective measurement by the personal portable device were studied by Hospital auto analyzer. (The published papers would not change their meaning and implications after substituting "BG lowering" with "training"). Measurements by portable instruments are widely used and do not seem the real obstacle to understand and accept the conflictual events that are elicited by each meal. A dramatic example are the nine malnourished infants [26,27]. IHMP eliminated the unexhausted energy before any scheduled meal and improved nutrition parameters in the six treated infants. We reported these findings to show that the expectations from IHMP implementation do not solely concern weight loss. The acquisition of energy availability (the meal size) is necessary or useful up to the Initial Hunger Meal Pattern. Further increases begin to elicit harmful mechanisms. These mechanisms may be suggested by functional disorders or functional deteriorations. People may then either use the physiological knowledge to prevent (and treat) disorders and diseases or cover the abnormal situation by medicaments [8,28]. Our findings and implications are not shown by the only demonstrations on Mean BG that were home-made. Assessments on energy expenditure were performed by doubly labeled water and by indirect calorimetry. The errors in estimation and by glucometer and the GTTs were measured by auto analyzer. Body weight and microbiology were assessed by consolidated procedures. Lovers of complete and accurate explanations may accept that the immune mechanism is promoted by the long intestinal sojourn of a rotten Meal for unexhausted energy intake (shown by a high preprandial BG). The association between high preprandial BG, insulin resistance and immune stimulation of all tissues has been demonstrated independently from accepting the "rotten meal" interpretation. Big information canals and powerful authorities may have difficulty in accepting findings that they did not foresee [27,28]. The problem here consists in the fact that Science is damaged by any power, not only by the exceptional money availability of drug industry [28]. General consensus does not coincide with catching the truth. There will always be mass errors that are induced by wishful thinking and are powerfully reinforced and enlarged by commercial success, even

though we cannot speak of true conflicts of interests. Merchants rely on consensus but humans and scientists absolutely cannot. Physicians inform on the available choices and an informed consensus develops [15-19,24].

Science cannot rely only on findings that are foreseen; In presence of a novelty how can humans distinguish true from false reports? How can the referee rely on a report on new findings, outside the referee's experience? Going beyond experience, formal performance may not suffice. Editors and referees might be better based on the rationality of inserting the novel findings in their own past logical construction. By reading reports and reports (also as a referee) and observing patients and eventual developments, we can add thousands and thousands of small facts and observations in a logical construction. The construction implies uniting together visive imagines and symbols (words) by their coincident portions, like in a construction of the mental map of an unknown city. The resulting movie of events may perfectly predict the subsequent events around the corner. Objectivity and verifications (accountability) seem as a prerequisite for democracy, for a benevolent attitude toward other humans and for the acquisition of authority. Current authorities in Medical Sciences are often harmful, at least unable to solve Fattening/insulin resistance and associated illnesses [29,30]. Ignoring Initial Hunger may contribute to the increase in children asthma, autism, congenital malformations, dyslexia, attention deficit, hyperactivity, schizophrenia, obesity and diabetes [29]. A new formulation of the National Children's Study (NCS, US) should both highlight the current ignorance and plan a new awareness of the relationship between hunger sensation and meals. The power of the directors of the USA NIH ought to be limited. The Florentine "piori" remained in charge two months at the initial explosion of a successful capitalism.

On the other hand we see a risk in a rapid diffusion of novel findings. The rapid ruining down of old, honored believes suggests a similar destiny for the findings that take the empty place. We sincerely think that research produces believes that are universally accepted by competent minds. In comparison with this universal objective, transient successes and rejections are negligible events. However Nutritional believes correspond to economic and health outcomes, expenses and sufferings. The Nutritional research involves either the promotion or the rejection of many nutritional enterprises, the fortune, health and happiness of many people. The diffusion of novelties among marginal ways of diffusion prepares and smoothest the impact of the change. Choices in Nutrition involve a cultural change in the family [32]. We were used to the Mediterranean family. Women were proud and happy in rearing happy, healthy, skilled children. The complete dedication of a skillful mother to rearing a healthy, happy child was the dream of mothers of diarrheic children in my long gastroenterology experience on children. Rearing an admired child might be a valuable life endeavor for many women [32]. In a period of excess offering on the side of manpower, might the human resource excess be employed to improve health, happiness and skills of children? Are we sure that all women prefer the office work instead of child care? Women' expectations are not uniform and there might be place for different developments and collaborations. Many French solutions for the family go along this direction.

The hardness of the scientific conflict suggests similar difficulties in IHMP implementation. In the first days of life, scheduled and demanded meals are equivalent, and either choice is dictated by familial and medical customs, current local fashion, convenience, and also by a null hypothesis on their difference of effects that was shown to be wrong [19,32]. Given the fact that part of the population maintains low preprandial blood glucose by free choice, given the demonstrated maintenance of demanded meals up to 12 years of age [9,32], given the equivalence of early balance instructions for new mothers, given the habitual, persistent nature of Mean blood glucose due to associated organic changes, and emphasizing better health in children and adults who maintain preprandial low blood glucose [19], a change in instructions on rearing seems obvious and mandatory from the neonatal days. Implementation in adults has the difficulties of beginning a new play: within three to four days, many subjects understand the difference between hunger that arises after meal suspension (IH) and conditioned hunger. At hunger arousal, the surprise for guessing BG may take a similar interval of exercising with the portable instrument.

We taught how to recognize the correspondence between the subjective sensation of hunger (trend with hunger at meals, IHMP) and the low BG. The aim was both to obtain, meal by meal, a low pre-prandial BG concentration that means an even balance of energy in blood (homeostasis) and to curb fattening/insulin resistance. The optimal energy intake corresponded to a low BG level before meals that turned out to be the same in several studies carried out on different subjects (about 76.6 ± 3.7 mg/dL in sedentary people) [18-20]. Such level can be easily maintained after a two-week training of BG measurements at arousal of Initial Hunger. Developing such awareness

is within the population's reach. At recruitment a remarkable minority of (untrained) children [19] showed pre-prandial BG concentrations alike those of children whose mothers had been trained not to offer food. Studies in adults confirmed the coincidence [18].

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