

Disease Closure through Opening Novel Chrono-Sciences: Bioprocessing of Intermediary Metabolism

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While deeply important, timing of nutrient intake and bioprocessing has been mostly overlooked in modern medical and nutritional sciences and public health policies. Glucose by humans is not well tolerated during evening and night times unlike morning and day time. From a chronophysiological standpoint, activity demands glucose and thus day - and not night - is the right time to bioprocess any glucose overflow [1,2]. This editorial authorizes a realistic recommendation to minimize evening and nocturnal eating and bioprocessing of especially sugars and starches to promote health through reducing risks from splanchnic and abdominal adiposity, metabolic syndrome, obesity, diabetes, hypertension, and cardiovascular abnormalities. The basis for such an advice includes the most recent discoveries on handling intermediary metabolism in sophisticated animal models.

A more profound understanding of human physiology is enabled by optimal understanding of comparative animal physiology. Ruminants as sophisticated working models for studying human metabolism possess adequately integrative systems ecology, serving postmodern investigations at gene, cell, organ and whole body levels [3-5]. Nocturnal vs. diurnal feed delivery to dairy cows can increase intake rate and postprandial rumen release of metabolites [4-6]. Night feeding, also, improves milk energy production and nutrient utilization efficiency in dairy and beef ruminants [6,7]. These findings underline the biological significance of eating timing in orchestration of nutrient partitioning and metabolic health [8-10].

The early morning glucose upsurge occurs usually in the expectation of the activity period and is called 'dawn-phenomenon'. This glucose peak along with a rise in corticosterone helps to elevate glucose supply and bioprocessing, which in turn raises insulin demands [7]. Reduced glucose tolerance overnight may partially be due to higher melatonin that basically originates from lower glucose bioprocessing capacity and needs of the night. Avoiding large evening and night food meals can allow human endocrinology to better cope with the external circadian environment towards improved nutrient bioprocessing and general health [11-13].

The major philosophy is to help smoothly bioprocess and synchronize the internal rhythms of cell physiology with the shifting environment. Should effectively accomplished, this synchrony could largely ease brain and heart work and successfully reduce risks of metabolic disorders.

In brief, animals of particularly livestock provide appropriate metabolic models for testing innovative hypotheses in human medicine and nutrition [11]. This is increasingly important as the postmodern

man is facing complicated issues such as diabetes, various cancer and nervous system related diseases. Farm animals could open novel horizons into closing such rising health hurricanes. This is certainly a practical tool to bioprocess intermediary metabolism to improve health.

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