

## Editorial

# A Global Petition: The Potential Significance of Solidifying Nutrition, Lifestyle Modification and Epigenetic Facets in Our Mundane Practice

Van Halm-Lutterodt N<sup>1,2</sup> and Xu Y<sup>1\*</sup>

<sup>1</sup>Department of Neurosurgery, Beijing Tiantan Hospital, Capital Medical University, Beijing, China

<sup>2</sup>Department Orthopaedic Surgery and Neurosurgery, Keck Medical Center of USC, University of Southern California, Los Angeles, California, USA

\*Corresponding author: Yulun Xu, Department of Neurosurgery, Beijing Tiantan Hospital, Capital Medical University, Beijing, China

Received: November 02, 2018; Accepted: November 13, 2018; Published: November 20, 2018

## Editorial

Phylogenetically, we have been designed to properly function on biochemical fuel that is ultimately generated from complex biochemical processes beyond our control and the conscious mind. It could undoubtedly be appreciated that these biochemical fuel sources are greatly acquired through the foods we ingest daily while our bodies execute eminent processes to cascade catabolic and anabolic reactions in an attempt to establish physiological assimilation and internal environment equilibrium under normally given conditions. It is logical to understand that when one's musculoskeletal system gets worn-out or is deprived of the necessary functional needs (*healthy nutrition, adequate physical activity and quality rest*), global degenerative changes occur within the body to facilitate adaptation, a phased-period within which the body tries to incorporate the mind and the body for a survival mode activation. That being said, it becomes clearly apparent how important healthy nutrition, adequate physical activity and rest are to the physiological function, most importantly the musculoskeletal system that forms the framework of the body. Within this nutritional domain, one of the most fascinating aspects that is less discussed in our frequent approach to orthopaedics patients is the metabolic niche.

We encounter many orthopaedics patients both within the outpatient and inpatient settings who present with specialty-related problem but most often complicated with one or more co-morbidities that often vibrate from the nutritional-metabolic abyss. We have to observe this pitfall not as an unprofessional attributive factor but rather, an inclination to the nature of demand and workload that mount up over time for practitioners in the field and for that matter, a tilt towards specialty-specific related issues becomes more of a priority than intently addressing issues like metabolic disarrays in orthopaedics patients unless otherwise the main diagnosis turn out to be osteoporosis or metabolic bone disease-related.

We also can attest that, when there is malnutrition complicated with socio-economic factors such as stress and anorexic-bulimic

components, underweight, overweight or obesity can result and these abnormal weight outcomes complicated with metabolic syndromes exert great health care burden and cost during delivery of care to orthopaedics patients.

More recently, there is mounting evidence in the literature stemming from the cardio-metabolic discipline that discusses a subset of patient phenotype within the obese population. As we are all abreast with the fact that clinically, overweight and obesity are substantially associated with higher morbidity and mortality during patient care, it is contradictory to conceive the notion that this phenotype of patients, albeit obese, is dumbfoundingly metabolically healthy, hence the term; *Metabolically Healthy Obesity* (MHO) or *Metabolically Normal Obesity* (MNO) have been coined to represent them.

The realization of this metabolically normal subset within the obese population is beginning to question our previous knowledge, awareness and understanding of metabolic knowledge conceptualizations. It is certain that very little to none has been accomplished in the orthopaedics field regarding this interesting subject matter. The cause of this rabble-raising finding within the obese population is yet to be explored in the field and hence requires collaborative and comprehensively integrated efforts that cut across every needing discipline.

If experts in the field are asked what the most dangerous item in a scenario of 'A plate mounted on a CHAIR with delicious 3-level CHEESE BURGER' is? Assuming this question is thrown into a discussion forum for experts to share their comments and opinions, many would succumb to the notion that the most dangerous item in the scenario is the 3-level cheese burger. This is because we have so long been intellectually inclined and somewhat fixed to an orthodox philosophy that cheesy and oily foods are unhealthy. For instance, recent scientific reports of a studied population show that, in the aging population that tend to express lower serum low density lipoprotein cholesterol (LDL-c) were rather at a health risk compared to those expressing higher serum levels of LDL-c. This is a clear example of the twist of knowledge and understanding we previously appreciated of cholesterol and how essential it is for us to redress ourselves to meet exceptional expectations that evaluate our clinical skills and delivery to all patients.

Averting this concerning vulnerability in clinical practice requires re-evaluation, re-education and update of knowledge base to align with the pathological findings of this fast pace of global economic development where everything appears to be so convenient and becoming almost digital in both developed and developing countries. Actually, from a logical point of view, eating frequently isn't bad

but how we eat and what we do after eating is what predisposes us to either a healthy or unhealthy sequelae. In our opinion, the most dangerous item in this scenario is the 'CHAIR'.

We often spend time sitting in the office, at home, on the buses, trains, airplanes for longer periods and majority of the population in the lower, middle and higher classes frequently spend less time engaging in physical activities like walking, bike riding, swimming, jogging and other aerobic exercises that healthily support cardiopulmonary function necessary for precipitating a healthy metabolic outcome and essential for physiological biochemical processes in the body.

Research studies are strongly indicating the role of epigenetic susceptibility in such metabolic aberrations but interestingly, this facet falls under the biological niche that can be dynamically directed by *lifestyle modifications* through the emphasis of education and awareness programs, a demanded arena requiring vast integrated efforts from all medical, non-medical professionals and organizations if we desire to halt accelerated extinction of the human race. The fact that there are some people in the general population albeit obese, yet demonstrate healthy or normal metabolic profiles and normal weight but yet are fraught with metabolic aberrations clearly indicates an interplay of adaptation, greatly attributed to patho-physiological epigenetic factors. This observation highlights the importance of the dynamic properties encoded within our genetic architecture, an advantageous epitome of resilience and potential warrant to educating our genes for individualized or tailored expression in a fashion to curb pathological abnormalities stemming from such epigenetic variations.

These efforts can be achieved in a condensed amount of time if we, the health professionals, non-governmental organizations as well as relevant government bodies can re-evaluate our currently utilized

interdisciplinary health care guidelines for updates and amendments as it may be that, what we previously perceived to be normal references during clinical evaluation efforts may be requiring imminent changes to help enhance the quality of care delivered to all patients.

It would not be considered offensive at all to reverberate that, it is about the time we medical professionals and experts in the orthopaedics field do also re-equip ourselves by bridging the interdisciplinary gaps in an attempt to provide proper counseling and education by placing strong emphasis on healthy nutrition and lifestyle modifications during patient-doctor consultations for it may be that, some needless surgeries of the knee, spine as well as syndromes like carpal tunnel may be avoided when these nutrition and lifestyle aspects are fiercely acknowledged in our day-to-day encounter with our patients.

## Declarations

### Data availability in the declaration

Data sharing not applicable to this article as no data-sets were generated or analyzed during the current study.

### Author's contributions

NVH-L designed and drafted the editorial. YLX revised and gave the final approval. All the authors read and approved the final editorial manuscript.

## Acknowledgement

We express our profound gratitude to Professor Jeffrey C. Wang of USC, Keck Medical Center for his excellent scholarly guidance. We also show our appreciation to Dr. Zorica Buser of USC for her kind academic help over the years.