

tion. Huge effort is now invested in study of various candidate genes and potential specific polymorphisms selected from functional genomic data-bases and implementing bioinformatics tools. Numerous whole genome linkage and currently association studies identifying hundreds of new suggestive polymorphisms and dozens of new genes are also waiting for approval from the same sources of functional genomics. These results if confirmed could be of considerable basic scientific and clinical significance, in particular for the personalized medicine. The present talk will illustrate this status of affairs in our research, focused on bone strength/fragility and sarcopenia related phenotypes. In particular, this presentation will show the main results of our research implementing modern “omics” methods including whole genome and metabolome studies to identify specific genetic factors and endogenous molecules associated with muscle mass and sarcopenia related phenotypes in general population. I will present some selected results of the GWAS and functional genomics analysis of the muscle mass variation obtained in largest up-to-date international consortium.

Key words: *muscle mass, BMD, GWAS, candidate genes, association analysis*

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EPIDEMIOLOGICAL AND NUTRITION TRANSITION: THE DOUBLE BURDEN OF MALNUTRITION

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The theory of the epidemiological transition focuses on the complex changes in patterns of nutrition, health and disease and on the interactions between these patterns and their demographical, economical and sociological determinants and consequences. The theory was first put forward by Abdel R. Omran based on his analyses and comparisons of mortality patterns.

The Epidemiological Transition is obviously linked to demographic and nutrition transitions. As far as nutrition is concerned changes in dietary and physical activity patterns are partly responsible for the secular trend in average stature and alterations in body composition. However many modern societies have a diet high in saturated fat, sugar, and refined foods and low in fibre (this diet is often referred to as the “Western diet”) and this diet is associated with high levels of pre-obesity and obesity as well as increased risk of chronic and degenerative diseases e.g. diabetes.

Many countries are suffering from both undernutrition as well as overnutrition (i.e. the double burden of malnutrition).

This paper reviews these concepts and considers how aid programmes can impact on these transitions.

Key words: *Epidemiological Transition, demography, malnutrition, undernutrition, overnutrition*

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