It is only relatively recently that humans have shifted to a high-fat, high-glycaemic-index diet with which we have not evolved the metabolic capacity to cope.

Key insights
Non-communicable disease (NCD) levels are reaching epidemic proportions worldwide. Current interventions largely ignore the role of early life development in modulating the disease risk and instead focus on screening at-risk individuals or the treatment of patients with disease. Based on global trends in NCD statistics, such an approach is no longer tenable. Instead, more emphasis should be placed on preventative interventions in early life.

Current knowledge
Extensive literature shows that the risk of developing NCDs in later life is dependent on early life conditions, such as the maternal condition before/during pregnancy. The pathways to increased disease risk include evolutionary, developmental and demographic dimensions. Recent epigenetic research provides a molecular basis for such observations.

Practical implications
An appreciation of the importance of early life developmental factors and non-genomic inheritance in influencing later life health is crucial for devising effective intervention strategies. Identification of the at-risk individual early in life using epigenetic biomarkers, or treatment with therapeutics with an epigenetic basis, represents a promising step forward in tackling NCDs.

Reprinted with permission from: Ann Nutr Metab 2011;58(suppl 2):8–15
Epigenetic Epidemiology: The Rebirth of Soft Inheritance
by Mark A. Hanson et al.

Recommended reading