

The relationship of clusters of gene expression associated with development in childhood to disease in the aging-adult

Lay Abstract:

The process of growth in the womb and through childhood is strongly associated with a number of serious illnesses later in life including heart disease, stroke, diabetes and increased blood pressure. These adult diseases can be related to both poor growth in the womb and periods of fast growth in infancy that occur in smaller children. This link between growth and diseases in later life is due to changes in how active our genes are. Changes in the environment in the womb and early childhood alter our DNA to change how our genes are activated.

Recently Dr Adam Stevens and colleagues, from the University of Manchester, have defined a map of changes in gene activity across infancy, childhood and adolescence. The changes in this map involve key biological pathways involved with growth and metabolism. This work was highlighted in the top journal *Science* as an editor's choice publication.

This team of scientists now intend to extend their map of the changes in gene activity in older adults. They will also see whether these age-related changes are linked to ill health in older adults

Quote:

"We hope to link changes in the way genes are activated in childhood to diseases that cause serious illness in later life. This is exciting work because it will provide insight into the mechanism of these diseases and potentially allow earlier treatment that can contribute to healthy aging."