The changing concept of epigenetics

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We discuss the changing use of epigenetics, a term coined by Conrad Waddington in the 1940s, and how the epigenetic approach to development differs from the genetic approach. Originally, epigenetics referred to the study of the way genes and their products bring the phenotype into being. Today, it is primarily concerned with the mechanisms through which cells become committed to a particular form or function and through which that functional or structural state is then transmitted in cell lineages. We argue that modern epigenetics is important not only because it has practical significance for Three concepts of epigenetics might be of interest to our understanding of the development and progression of CVD. First, epigenetics might provide a mechanistic link between environmental exposures and gene expression profiles. Epigenetics is the collective name for the genomic mechanisms that influence gene expression, but do not involve variation in the deoxyribonucleic acid (DNA) sequence itself. Many studies support the concept that changes in epigenetic factors influence biological processes related to CVD development, including diabetes, hypertension, obesity, atherosclerosis, atrial fibrillation, and heart failure. We discuss the changing use of epigenetics, a term coined by Conrad Waddington in the 1940s, and how the epigenetic approach to development differs from the genetic approach. Originally, epigenetics referred to the study of the way genes and their products bring the phenotype into being. Epigenetics is a relatively new and rapidly developing branch of modern biology. Despite widespread use, this concept is treated differently in different sources [1][2][3][4][5] and therefore requires special explanations. However, given the current knowledge of the multiplicity of molecular mechanisms providing realization of genetic information and regulation of this process, this interpretation became too vague, which eventually led to serious terminological confusion.