

GENETICS

EVOLUTIONARY MEDICINE – A BRIEF HISTORY

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According to Gluckman et al. 2009 (page 22) the beginnings of evolutionary ideas appeared at the end of the 18th century with natural science on the rise driven by Carl Linnæus and Georges-Louis Leclerc – the great cataloguers of a living species – and Erasmus Darwin and Jean-Baptiste Lamarck – the new interpreters of the tree of life. Of course there are more influential French scientists (Georges Cuvier, Etienne Geoffrey Saint-Hilaire) that had an impact on Darwin and Wallace and also Robert Chambers who argued for evolution under divine guidance. The main contribution, however, is the *Origin of Species* by Charles Darwin, the mutability of the genome, the importance of genetic variation and the importance of selection mechanisms. There was quite some silence after that lightning strike. Although mutation events were not questioned, William Bateson (as well as Thomas Morgan) believed more in saltations, eg. undirected mutations. Only the great mathematicians Ronald Fisher, JBS Haldane and Sewall Wright used population genetics to unite modern genetics and evolutionary thoughts. While the mid 20thies biologists like Dobzhansky and Ernst Mayr enforced a naturalist's perspective, a direct relationship to clinical medicine is being established only now with [Trevathan's 1999 Evolutionary Medicine](#), [Stearns' 2007 Evolution](#), [Gluckman's 2009 Principles](#), as well as popular drafts (like [Ganten 2009](#)). Many papers including Ding (coronary heart disease), books like Hed (Anatomy) and Greaves (cancer) contain important material.

The field started, however, with

Randolph Nesse, a far-sighted physician, and George Williams, an eminent evolutionary biologist, have been prominent and eloquent proponents of this line and coined the term 'Evolutionary' or 'Darwinian Medicine'.

Nesse has an [excellent website](#) accompanying his 1995 monograph "[Why we get sick](#)", as well as links to many PDFs and videos; there is now even a website [evolutionandmedicine.org](#) and a [new journal](#) dedicated to that topic.

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