The relationship between genes and medical conditions is not new – the ‘thrifty gene’ hypothesis has been around since 1962 when anthropologist James Neel suggested that human ancestors were adapted for a feast or famine scenario. As hunter-gatherers they either had periods during which food was readily available or periods during which food was scarce. Their metabolism was efficient at storing food as fat to prepare them for the famine. This efficient metabolic mechanism does not work as well in a situation where food is plentiful, resulting in the problem of obesity which is so common in developing countries.

Probing the genetic aspect in more detail, a study described the results of four Khoisan tribal leaders who live as hunter-gatherers in different parts of the Kalahari. These four tribal leaders had their entire genomes sequenced and as a result joined an elite group of 11 humans who have also had their entire genomes sequenced. Archbishop Desmond Tutu and James Watson, the scientist who explained the structure of DNA, are other famous names in this unique group. This study concluded that, despite being from similar geographical regions, the genetic diversity of the four Khoisan was unexpected. The authors concluded that it is most important to include Africans in studies on human genetics. Firstly the genetic diversity was novel, and secondly Africa is the birthplace of humanity. As a consequence it is reasonable to assume that the genetic profile of indigenous Africans may have differences compared with examples from other parts of the world. The researchers point out that this may have implications for medical research – most of the decisions linking genes to disease are based on Eurocentric genetic databases. A database of indigenous Africans may be needed to solve some of the regional medical problems.

On a practical level, the response to the problems associated with low levels of physical activity in modern society is gaining momentum through the Exercise is Medicine movement (www.exerciseismedicine.org). The South African Sports Medicine Association has taken up the challenge to promote physical activity as a significant modifier of disease and quality of life and has established a regional chapter. Other active organisations such as Global Advocacy for Physical Activity, and African Physical Activity Network, both with strong South African networks, are starting to communicate, so the message of promoting physical activity and translating this into action in South Africa will be stronger than ever.

References:

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