Editor's comment

Run like a caveman

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In the world of running there is currently a huge movement towards 'barefoot' running – and the usual marketing hype around products such as Vibram Five Fingers 'shoes'. Arguments abound on Facebook and other group sites, and I must admit that I have gone into less conventional, more minimalist running shoes myself – but mainly because they are comfortable.

But it is not just running that is subject to the myth that we are 'not evolved' for modern life. In an interview in *New Scientist*[1] recently, Marlene Zuk has a refreshing take on what she calls 'paleo' trends. Zuk is an evolutionary biologist at the University of California, Riverside and has recently published a book, *Paleofantasy: What Evolution Really Tells Us About Sex, Diet and How We Live*. As she explains, the paleofantasy stems from the idea that evolution makes miniscule changes over millions of years, so we haven't had enough time to adapt to the modern industrial world and that we would be healthier and happier if we lived more like our ancestors. However, although we probably are not well suited to sitting at computers for eight hours a day, being bipedal also takes its toll on the body – so why aren't we still quadrupeds?

The main flaw in this argument about evolution is the idea that evolution produces an organism that is prefectly adapted to its environment and then stops. But as Zuk points out this is incorrect – there was no point in our past when we were 'perfectly' adapted to our environment. In fact, evolution is not about perfection, but about 'good enough'. So the idea that we are fat and unhealthy because we no longer eat like a caveman is also flawed. While the levels of refined carbohydrates and sugars that we eat are undoubtably unhealthy, we don't really know what our ancestors ate and research is showing that, at least in certain parts of the world, they probably ate a lot more starch and carbohydrates than previously thought, so there is no such thing as the 'perfect paleodiet'.

Zuk also tackles that idea that diseases such as cancer and heart disease are a product of a mismatch between our genes and modern lifestyles. Cancer is not a new disease and neither is heart disease. Diseases such as type 2 diabetes and the autoimmune diseases are certainly more prevalent than in the past and infectious diseases such as meales did not arise until we started living in groups and farming with animals, but research does not support the idea that we didn't get cancer until we 'started living this horrible modern life'.

As Zuk says, 'What's harmful is when you misunderstand the way that evolution works and end up worried because humans didn't use to do X. We shouldn't do X now.' Any advantage or disadvantage depends on the evironment that you are in now, and research on epigenetics strongly supports this. Which all goes to show that evolutionary biology not only underpins the biological sciences, but that medicine cannot ignore it either.

1. George A. The lure of the Stone Age. New Scientist 2013;217:28-29.

Note from the Editor

CME will be incorporated into a 'new-look' *South African Medical Journal*, commencing with the January 2014 edition.

A review article will introduce readers to the educational subject matter along with a page that will summarise the additional articles (that may be accessed online).

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