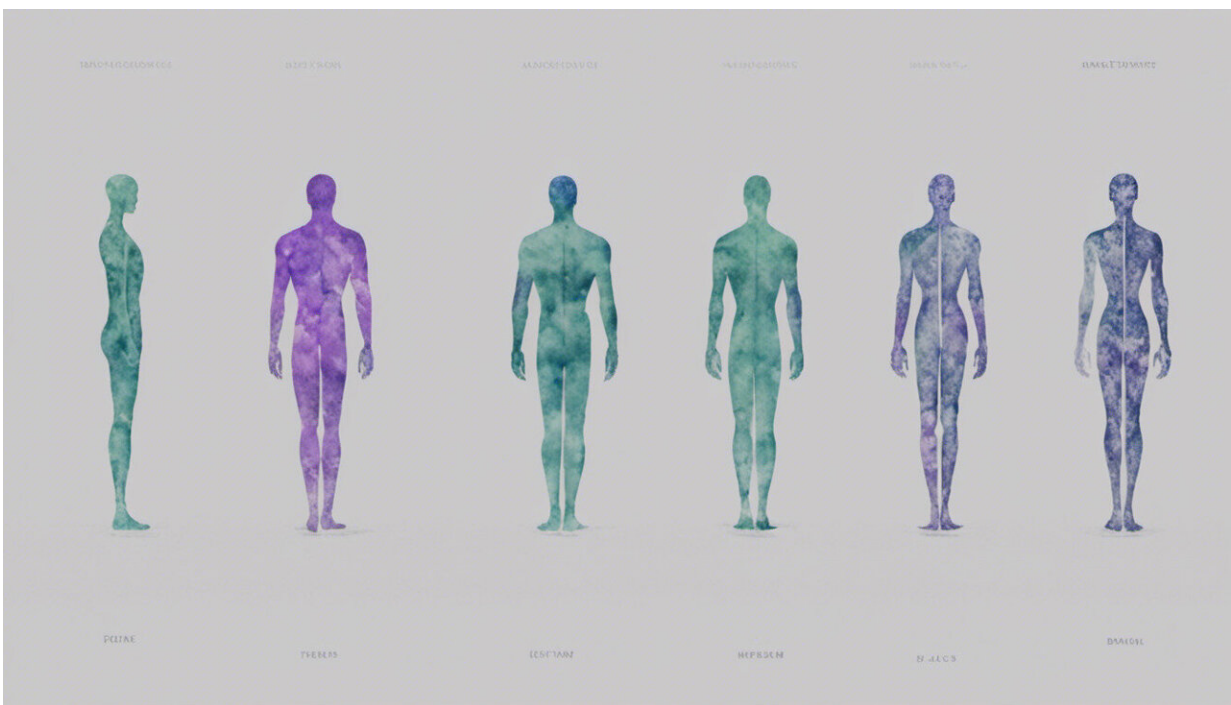


Body mass and evolution—why the body mass index is a limited measure of public health

June 27 2017, by Andrew Dickson



Credit: AI-generated image ([disclaimer](#))

Charles Darwin died in 1882 at the age of 73, likely of a heart attack. At the time, the average life span in England was about 44 years. Darwin, by any stretch of the imagination, was a long-lived man, despite suffering some significant health issues throughout his life. Mapped to

New Zealand in 2017, he would have made it to around 110. He would have got a postcard from the Queen.

There isn't a lot of information about Darwin's [body mass](#). We do know that after the famous Beagle voyage in 1836, at the age of 26, he weighed 67kg and was 180cm tall. His [body mass index \(BMI\)](#) would have been 20.6, classified as a "healthy" weight. We also know he suffered multiple bouts of illness during his journey, and in many ways was far from healthy.

History of body weight

Scales were not that common in 1836. It would be another century before medical doctors were regularly weighing their patients. The 26-year-old Darwin would have stood upon a fairly basic spring scale, invented in 1770, or possibly a large balance scale. Throughout the remainder of his life the spring scale would have become more common, used mainly in commerce to determine value. It was integral to the [Uniform Penny Post](#), a precursor to the Royal Mail.

It wasn't until 1942 that weighing people became more common, specifically with the arrival of the insurance industry. The fascinating history is laid out in Marina Komaroff's [recent summary](#) in the *Journal of Obesity*, but it has to be read through a critical lens.

Komaroff, for instance, talks at length about the insurance industry's role in creating body mass as a device for determining risk, but she doesn't ask the important question: do we really want the [insurance industry](#) defining the basis upon which we determine health?

Measuring health by girth

The relationship between BMI and chronic health risk remains [far from simple](#). Despite this it is still used in countless GP consultation rooms, nutrition surveys, insurance assessment and even immigration medicals. The number itself (BMI, or its close relative "weight") crossed the boundary between biology and morality many years ago.

In Western society body mass has become strongly linked to our [personal identity](#): you are either a virtuous person who is able to resist temptation and exert punishment on yourself via an appropriate amount of strenuous exercise, or a bad person who is slothful and gluttonous.

We find it disturbing that a derived biological marker can be wielded like a sword by both [public health advocates](#) and savvy food & [beverage](#) corporations. They imply in unison that our expanding waistlines are the result of our collective lack of willpower and our inability to eat less and exercise more.

While our impending chronic disease crisis is reduced to a simple matter of body mass management, the only solution proffered is "more education" to the public, i.e. telling overweight and obese individuals to exercise control over their "lifestyle choices". This can be easily seen even in [the youngest members](#) of our society.

As a result, we judge our health, social success and overall happiness against that marker. Concentrating our individual and public health efforts on pursuing this red herring makes us lose focus on the truly vital markers of wellbeing.

Reducing the totality of human health to a set of [measurable, trackable, numerical biomarkers](#) may be convenient for the multi-billion dollar pharmaceutical industry which can manipulate the above biomarkers with medications. However, in many cases the evidence that this improves quality of life of these individuals is, sadly, lacking.

From individuals to community

Non-Western cultures often understand [human health](#) as [inextricably linked to the environment](#) in which they live, rather than a simple individual responsibility. Notwithstanding the incredible diversity of non-Western cultural systems of health, their central tenets have a lot in common. We can learn a lot from these heuristics: connect with your immediate natural environment, take nourishment from nature and give back, respect your elders as they are the source of knowledge and in turn acquire knowledge to pass on to your descendants, be of use to your community and you can draw on their support in times of need. Some of these "truths" are supported by current scientific knowledge, some are not. But they display a sophistication, by understanding the complexity of organic systems, that the Western health system frequently lacks.

From our perspectives, in the academy and on the front line of health, we want to see a radical change to Aotearoa/New Zealand's approach to health and wellbeing, a new/old framework that we call [Ancestral Health](#).

To us, the word "ancestral" has several meanings. First it refers to our biological heritage in the form of the genetic code, acknowledging our connection with our direct ancestors and every living being on earth via "the common ancestor", as first recognised by Darwin in [On the Origins of Species](#).

Ancestral also refers to something less tangible but no less important: the rich cultural heritage which has been passed down from our ancestors and shapes our understanding of the world.

Finally, ancestral is our link with the future generations, for whom we are the ancestors and the source of genetic material, [epigenetic](#) changes, and cultural and environmental legacy.

Ancestral Health does not eschew modern medicine or scientific discovery, but it provides a framework for interpretation and implementation of scientific data, including the BMI measure, in the context of both evolutionary theory and sociocultural experience.

Ancestral Health encourages us to recognise deep interdependencies between the health of individuals, the health of communities, and the health of the land. If our [public health](#) system was to align itself more closely to these principles it would radically reshape what we value as "[health](#)" in our society.

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