**What is the internet doing to our bodies?**

*Vybarr Cregan-Reid considers how the way we use tools changes the way we look.*

In the last few decades, the revolution in information technology has rewired our lives – the ways we shop, communicate, and gather and consume information. But it is also there in our flesh and bones. The web is changing our bodies.

The internet is modifying the way we move, the kinds of illnesses that we have to manage on both individual and global scales, and even our appearance. The rise of the web is synonymous with a new kind of body that is noticeably different to the ones which preceded it.

Work is reflected in the human body. All environments invite work of different kinds, and when those environments change, so do the movements we make.

The traces of these changes are there in both modern and ancient humans. They are written so deep that we can see them at a distance of millions of years.

Before agriculture began (about 10,000 years ago), the human body performed a wide variety of work. Some of it was highly repetitive (like digging, preparing hides, foraging, or the knapping – or chiselling – of stone tools). But over days, weeks and months, the rate of physical activity would have remained consistently high, as would its diversity.

But when humans began farming, our bone density dropped by around 30 per cent; we know this from comparing the bones of ancient hominins and primates to fossil remains from more recent times.

Agriculture reduced both the amount of work that humans had to perform, as well as the variety of it. Work became moderately more repetitive and a little easier on the human body. Agricultural bodies did not need to be as strong. If hunter-gatherers were human v1.0, then farmers were v2.0.

In another comparative study from 2017, the bone-density of agriculturalists were tested against more modern specimens. This study concluded that the arms of farmers from 5,000 years ago were 30% stronger than that of modern human. So robust were they, that these normal agriculturalists had arms that were stronger than today’s Olympic rowing teams.

This makes the total drop between version 1.0 and modern humans about 51 per cent in total.

In the mid-19th century, a second revolution in work shaped an entirely new version of the human body: v3.0.

1851 marks a historical tipping point when the urban population began to outnumber the rural one. With the arrival of industry in the nineteenth century, people were magnetically drawn to the new styles of labour available to them. Leaving their smallholdings behind, they migrated to find new kinds of employment. This work was both demanding and damagingly repetitive.

In the new factories, workers from age five and upwards toiled on their feet for 12-16 hour days. Many of their bodies became misshapen analogues for the weird choreographic work that was required of them. In the fiction and prose of the period, they are repeatedly described as being grey in pallor from spending too little time in the sun. Rickets, the condition that causes the malformation of bones due to vitamin D and/or calcium deficiency, became so synonymous with the working classes it was renamed ‘the English Disease’.

Version 3.0 of the human body bent under the stress of increasingly repetitive work. This lack of variety in the labour of industrial workers led to many of the occupational diseases of the Victorian period.

Office clerks were the fastest-growing professional group in the latter half of the nineteenth century. In 1861, the census suggests that about 91,000 people were performing administrative labour (0.4 per cent of the workforce). By 1891 it was 2 percent.

The number today is about 85 per cent, with 99 per cent of 16-34 year-olds online every day.

As information becomes the fundamental commodity of this new economy, physical activity is being elbowed out of our work lives. It still exists, but the downward trend is likely to continue for some time yet.

We spend too much of our time worrying about smartphones, social media, gaming, gene-editing and robots, when the biggest risks to our health and wellbeing are the creeping habits that are associated with ancient technologies like ceilings and chairs as well as the screens and keyboards that keep us pinned static while we work.

The reduction of movement that the web encourages, and we have embraced, is changing us. These changes creep like fungus across the human body.

News, for example, used to be something that we went to the cinema to see. Then the television arrived in our living rooms and we no longer had to leave the house for an update. The remote control arrived in the 1970s meaning we no longer had to move to change the channel. Today, we need only reach for our smartphones. Getting some Pathé News at the cinema used to burn about 200 calories, reaching to a pocket uses about 0.2. That’s a 1000 per cent drop in activity, with nothing to replace it.

When technology smooths out the friction of our lives by making things easier for us, we never return the saved energy back into the equation. It is lost. Our smartwatches try to help, but they can only count the things we have done, not what we have missed.

And so the tectonic creep of technology, which brings with it more indoor habits, is changing our bodies, too. Indoor time, which provides poor quality light with no opportunity for our skin to make vitamin D, is also strongly associated with the global epidemic of myopia. It’s currently estimated that if nothing is done to curb the trend, half the world’s population will be shortsighted by 2050 – and about 2.5 per cent of people with high myopia go blind in older age. ‘The English Disease’ is making a comeback, and vitamin D deficiency has also been linked with the steep rise in food and nut allergy.

Modern life is driving too many of our pathologies to list, and they are not rare. Everything from asthma and ADHD to flat feet and types 1 and 2 diabetes are among them. The number one cause of global disability is back pain; it is strongly associated with sedentary life. And as information technology extends our working days and stresses us out, the masseter muscles that grind our teeth in our sleep widen our jaw as they get their nightly workout.

Inactivity, driven especially by chair use and technology, plays a role in tens of millions of global deaths each year. Seven of ten of the World Health Organization’s biggest killers are associated with inactivity. The top two are heart disease and stroke and, claiming 17 million lives each year, these alone outnumber the other eight in the list.

The world of work has changed so many times, and with it, so have our bodies. The internet has remodelled us by changing the ways that we work. Over time, the variety of work has homogenised so completely that the physical labour performed by an investment banker turning over multi-million dollar deals is indistinguishable from that of a child doing homework.

*About Dr Vybarr Cregan-Reid*

*Vybarr Cregan-Reid is an author and academic who has written widely on the subjects of literature, health, nature and the environment. His current book is Primate Change: How the World We Made is Remaking Us, a wide-ranging, polemical look at how and why the human body has changed.*