Sitting down can send you to an early grave: Why sofas (and your office chair) should carry a health warning...

- **Medical evidence suggests sitting down can cut years off your life**
- **Time spent sitting is associated with increased risk of developing diabetes**
- **Link also found with cancer, heart disease and high blood pressure**

By John Naish

Sitting down is increasingly being linked to some of the modern world's most toxic epidemics, from cancer, heart disease and high blood pressure to stroke

Are you sitting comfortably? Well, don't. A welter of medical evidence is suggesting that the act of placing your derriere on a seat can cut years off your life.

It seems armchairs, office chairs and sofas can be fatal. Sitting down is increasingly being linked to some of the modern world's most toxic epidemics, from cancer, heart disease and high blood pressure to stroke.

Last week, researchers at Leicester University added to this grim jigsaw by reporting that time spent sitting is strongly associated with an increased risk of developing type 2 diabetes.

The humble chair seems an odd candidate for inclusion in our list of lifestyle killers such as booze, cigarettes and hard drugs. But the fact is, chairs are a relatively new addition to human life.

Until the late Middle Ages in Europe, the only people to sit on chairs were high-rankers such as kings and bishops. At ceremonial occasions, seats showed they were above anyone else in the room.

Chairs with backs only became available to the affluent in Europe around the 13th century, and it was not until the 16th century that they became common. Until then, the chest, bench or stool were the everyday seats.

Sitting at work is a recent fad, as well. In the 19th and early 20th centuries, office workers such as clerks, accountants and managers mostly stood. Sitting was equated with slacking.

Indeed, some of the leading figures of the past couple of centuries have stood while they worked, believing it to help them remain alert and concentrate.

Distinguished members of this upstanding society include Ernest Hemingway — who stood and wrote at a desk in the mornings — Benjamin Franklin, Winston Churchill, Vladimir Nabokov and the novelist Philip Roth.

But now, the vast majority of most people's days are spent sitting — on the commute to work, at work, travelling home, then at the dining table, and lastly on the sofa in front of the TV. On average, it adds up to around ten hours of seatedness a day.

The Leicester University research suggests spending hours sitting down causes the body to accumulate dangerously high levels of sugars and fats in your bloodstream — significantly raising the risk of type 2 diabetes.

When we stand, our muscles contract to stop us falling flat on our face. Muscle contractions help the body to take sugar out of our bloodstreams and use it for energy (file picture)

Other research last month of more than 60,000 middle-age men by the University of Western Sydney found those who sit more than four hours a day are more likely to experience chronic ailments, such as cancer, heart disease and high blood pressure.

Emma George, the lead researcher, says: 'The rates of chronic diseases reported by the participants exponentially increased in proportion with the amount of time the participants spent sitting down.'

These problems were independent of other health factors such as age, body-mass index and level of physical activity, according to the report in the International Journal of Behavioural Nutrition and Physical Activity.

The result, according to another Australian study, published in the Archives of Internal Medicine last year, is that people who sit for 11 or more hours a day have a 40 per cent increase in their risk of dying over the next three years, compared with those who sit for only four hours a day.

Years sitting in chairs or wearing high heels mean our Achilles tendons are not stretched long enough to put our heels flat on the ground when in a squat (file picture)

But why is sitting so dreadful? It seems our bodies were primarily designed for fidgeting around and trying to stand upright.

When we stand, our muscles contract to stop us falling flat on our face. We engage our muscles when we are standing and even more when we walk around. And muscles have an important role in helping to regulate many of our physiological processes.

Muscle contractions help the body to take sugar out of our bloodstreams and use it for energy. The muscles that keep us standing up also seem to produce more of the enzymes that break down fats in the blood, says the Leicester University team.

One danger of sitting for too long is 'seated immobility syndrome'. The first case was identified in a South Korean medical journal in 2004. The victim, a 24-year-old man, had blood clots in his legs after sitting in the same chair for 80 hours playing an internet game. He needed emergency surgery to save his life.

Since then, the phenomenon has been investigated by Richard Beasley, of Wellington Hospital in New Zealand. He warns that the pressure on the back of the thigh from the front edge of the seat can slow down blood flow.

But are there any practical alternatives to sitting down all day if you work in an office?

The past ten years have seen attempts by bosses to get their staff on their feet, with upright 'working stations', and areas for 'dynamic meeting spaces' where people can stand and talk. Or they have simply taken chairs away.

However, other research shows how standing up at work seems to encourage people to slack off.

A study of Australian office workers in the journal Human Factors in 2009 found that people perform best at computer tasks when sitting. Standing reduced their work-rate slightly — while walking around while working had an even worse impact.

Asking staff to swap their chairs for stability balls does not help, either. These are designed to make people engage leg and back muscles constantly to stay upright.

One solution may be a treadmill desk - a workspace unit with a computer built on to the frame of a treadmill (file picture)

However, a study in the Journal of Occupational and Environmental Hygiene this year found that while 200 office workers who sat on stability balls for three months cut their levels of lower back pain by more than half, more than 45 per cent of staff reported that the balls had caused significant pain elsewhere with regular use.

Many people in the Far East feel comfortable in a squatting position with heels on the ground. But despite promising research on this in the Fifties by American academic Gordon Hewes, no one has seriously followed up the idea for say, office work or watching TV.

The problem for most Westerners is that years sitting in chairs or wearing high heels mean our Achilles tendons are not stretched long enough to put our heels flat on the ground when in a squat.

One bizarre solution may be a treadmill desk — a workspace unit with a computer built on to the frame of a treadmill. The belt on a standard model goes up to 4mph, though most users find 1-2mph works best, meaning they cover up to 40 miles a week.

Roger Highfield, director of external affairs at the Science Museum Group, says of his: 'Mine dominates the office: if anyone pays a surprise visit, I am always towering above them, providing a psychological advantage. But the real plus is I feel so much friskier. I have seen the future, and, yes, it is a hamster wheel.'

Perhaps the best answer is just to get off our bottoms every 20 minutes or so and go for a short walk. An Australian heart institute study found last year that people who do this see dramatic reductions in their blood pressure, equivalent to those normally seen after months of gruelling aerobic exercise.

Now that should get us all standing up and taking notice