



THE BRAIN CHANGER

A 52 hour working week sounds a lot but in fact it is 10.4 hours per day which may be an unwelcome norm for many workers. A new study titled "Overwork and changes in brain structure: a pilot study", published in the journal *Occupational And Environmental Medicine*, has found that working 52 hours or more per week may actually be altering your brain, particularly the regions responsible for memory, problem-solving, and emotional regulation.

Conducted by a team of South Korean researchers from Yonsei University, Chung-Ang University, and Pusan National University, the study used advanced brain imaging techniques to examine 110 healthcare workers. They found that overworked individuals showed notable structural changes in their brains, changes that could help explain the emotional and cognitive struggles often reported by people who work excessively long hours.

Working more than 52 hours a week is now recognised as a significant risk factor for both mental and physical health, with the research highlighting the impact on brain structure and function:

- **Brain Structure Changes:** Individuals working 52 hours or more per week exhibited notable changes

in brain regions associated with executive function, emotional regulation, problem-solving, and memory. MRI scans showed increased volume in areas such as the middle frontal gyrus (important for attention, working memory, and language processing), the insula (involved in emotional processing and self-awareness), and the superior temporal gyrus.

- **Cognitive and Emotional Impact:** These structural changes suggest that chronic overwork may alter how the brain manages stress, emotions, and cognitive tasks. The observed 19% increase in volume in the left caudal middle frontal gyrus among overworked individuals is particularly noteworthy, as this region is crucial for attention and memory.
- **Health Risks:** Long working hours have also been linked to increased risks of heart disease, diabetes, anxiety, and depression. According to the International Labour Organization, over 800,000 people die each year due to working long hours.
- **Reversibility:** There is some evidence that these brain changes may be reversible if environmental stressors (such as excessive work hours) are

reduced, though returning to baseline may take time.

In the UK, the legal maximum is 48 hours per week but a YouGov survey by the Institution of Occupational Safety and Health found nearly a quarter of UK workers regularly work more than the legal maximum number of hours, while more than half said they regularly check work emails and messages outside of normal hours. The Institution said urgent action is needed to tackle "an epidemic of long working hours".

Whilst the study provided valuable insights into the effects on the brain of overworking, it is important to note that it was a pilot study only involving a small sample of workers in South Korea which is a very different culture to the UK. It does, however, bring into focus the importance of addressing working excessive hours as an occupational health hazard. Businesses have a moral and legal responsibility to ensure employees do not work more than 48 hours (unless they have opted out of this limit) as it can negatively impact their physical and mental well-being, potentially leading to stress, fatigue, errors and illness. A healthy work-life-balance is crucial for a productive and happy workforce.