TRENDING SCIENCE: What is the Christmas brain?

The holiday season influences our brains both positively and negatively.

From our homes to the streets, everything is different around us. We get that Christmassy feeling thinking about photos on Santa’s lap or time with family and friends by the fireplace. The brain has a lot to do with this.

Back in 2015, a small study of 50 brains conducted by a team of Japanese researchers found a link between happiness and the precuneus – the part of the brain involved in various complex functions, including recollection and memory. Even the positive emotion of feeling Christmassy was associated with the precuneus.

The neuroscience behind Christmas

That same year, scientists at the University of Copenhagen were the first to put forward the concept of the Christmas brain. Their study involved 20 healthy Danes split evenly between those who celebrated Christmas and those who didn’t. As expected, the Christmas-themed images appealed to the former group. Interestingly, various regions lit up in their brain after measuring and mapping their activity.
“We know that engaging in Christmas activities is affecting the way our brain functions,” explained Dr Lila Landowski, a neuroscientist at the University of Tasmania’s School of Medicine in Australia. “It’s affecting our behaviour right down to the cellular level. … These are regions of the brain which are involved in our senses, what we feel and how we act in different situations.”

She added: “Stress hormones like adrenalin and cortisol, if you have too much of it [sic], like what happens sometimes over Christmas, this can actually impair our brain function.”

**Blame it on the brain**

Know a grinch or two? It could be neurological, according to Dr Landowski. “You might have difficulty making good decisions, you might be more selfish, you might even be more aggressive.”

Then there’s the festive music. Does it influence our brain? Dr Landowski further elaborated: “Probably. When we listen to Christmas music, lots of neurochemicals are released, and that not only raises our mood and makes us feel really positive, it also makes us more motivated. So for example if we are shopping and we hear Christmas music around us, we might be more motivated to buy things.”

Speaking of shopping, she claims this also plays a big role. “Not only does it make us feel good, the gratitude that we get, that has a really profound effect in terms of our mental health and our physical health as well.”

Hope our CORDIS readers are overcome with feelings of joy, warmth and nostalgia – with or without the science behind it!

**Keywords**

Christmas, brain, holiday, precuneus, neuroscience, neurochemical, adrenalin, cortisol, happiness, Christmassy

**Last update:** 22 December 2022  
**Record number:** 442735
