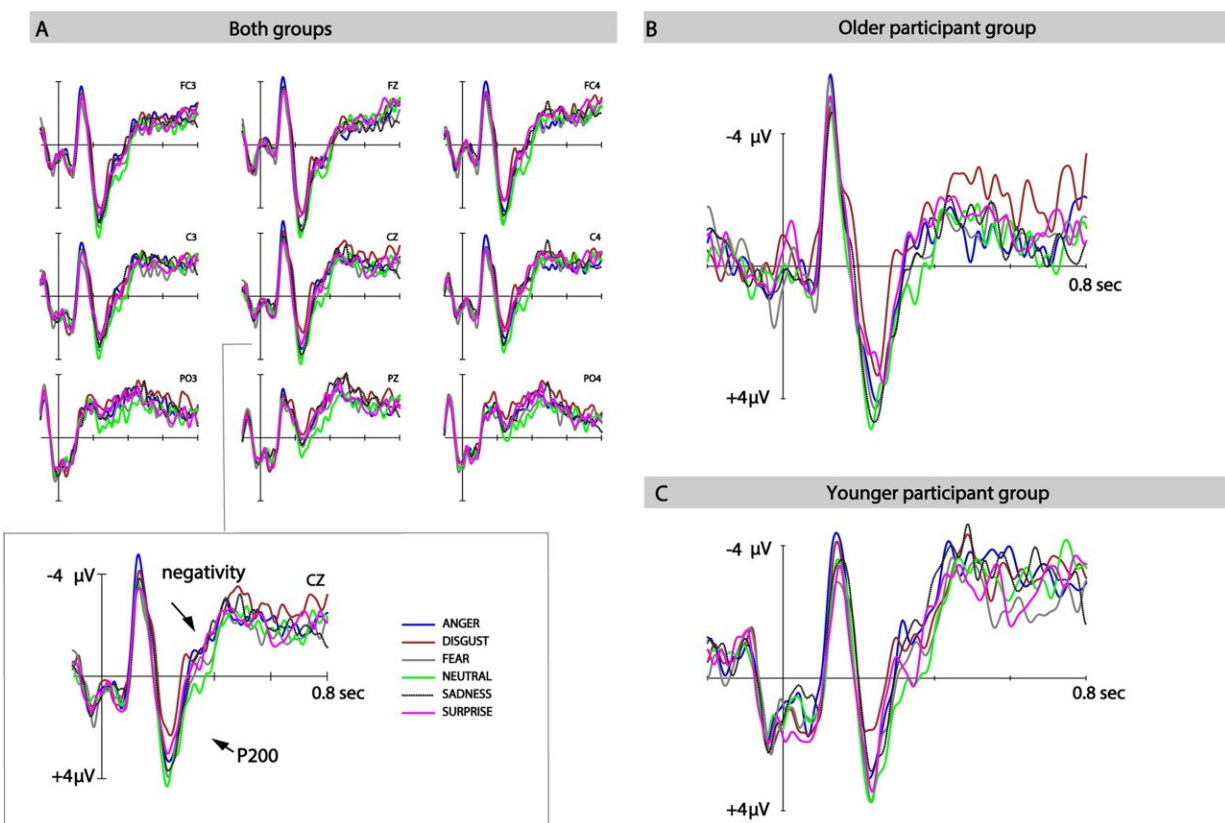


Struggling to understand the younger generation? Don't worry, research reveals it's only natural

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ERP mean amplitude of the younger and older groups per emotion category. Zoomed-in on CZ for closer visual inspection of the data. Credit: *PLOS ONE* (2022). DOI: 10.1371/journal.pone.0270934

Can't understand what the grandchildren mean? Don't worry, University of Essex research has revealed it is only natural. A new study has shown that the brain's ability to correctly recognize emotional cues in voices declines as we age.

Constantina Maltezou-Papastylianou, a doctoral researcher in the Department of Psychology, has discovered that the identification of both positive and [negative emotions](#) was affected.

Across three experiments, researchers found older adults were not as good at detecting emotions as younger adults and this could not be jump-started by electrically stimulating key brain areas.

The study showed that over 65s were less accurate than those in their 20s, and this is speculated to be associated with changes in the brain as we age.

Pensioners struggled to correctly identify the emotion of happiness from speech—with younger adults 17% better at picking it up in voices.

Older adults were only successful 35% of the time, whereas the [younger people](#) studied identified it 52% of the time.

It's not just [positive emotions](#) [older people](#) struggled to understand and recognize.

As they were 13% worse at decoding the emotion of disgust in [voices](#) and grasped anger five percent less of the time.

Maltezou-Papastylianou says that "how we say something and our tone of voice is as important during social interactions as to what we are actually saying."

"Have you ever had an awkward moment where something was said with a certain intent but was received differently?"

"I've lost count of the number of times I've joked to my grandmother, only to find out she thought I was being serious, even though I was aiming for a light-hearted tone."

"Research suggests that one of the explanations for this mismatch of our emotional intention when we say something and how it is actually received by the listener may be due to hormonal and anatomical changes that happen in a brain as we age naturally."

The research, published in *PLOS One*, examined two age-split groups of volunteers over a series of experiments.

All had good hearing, had English as a [native language](#) and were split into groups with an average age of 67 and 21.

Over the course of three experiments, 117 people were played 196 sentences and asked to judge the emotion behind them whilst their [brain activity](#) was monitored.

Listeners were asked to identify which emotion was represented in the speaker's tone of voice.

Overall, the younger group had an average 76 percent success rate, whereas the older participants only managed 69 percent.

It is thought the decline is largely due to natural changes in the [brain](#) associated with healthy aging and more research will now explore why we lose the ability to grasp someone's emotional intention as we age.

Maltezou-Papastylianou says that "this research is another step forward

in understanding how we interpret vocal emotion expressions as we age."

"Emotional recognition from voice can impact many aspects of life and it is important to keep this in mind when interacting with others, particularly with [older adults](#)."

"We hope to build on this research going forward and expand the work to look at different demographics, characteristics and personalities."

More information: Constantina Maltezou-Papastylianou et al, Different stages of emotional prosody processing in healthy ageing—evidence from behavioural responses, ERPs, tDCS, and tRNS, *PLOS ONE* (2022). [DOI: 10.1371/journal.pone.0270934](https://doi.org/10.1371/journal.pone.0270934)

Provided by University of Essex

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