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Thank you so much for participating in my research on different abilities in recognizing faces. I wanted to share with you how your involvement has contributed to valuable insights into something called developmental prosopagnosia (DP). We've analysed the data from the study, documented our findings, and they're currently being reviewed for publication in academic journals. Please note that these findings are not final and may undergo minor adjustments as they are reviewed by other experts. But I wanted you to be the first to learn about them.

Let's talk about how we examined the results. We compared the performance of two groups: 24 participants who have trouble recognizing faces (we'll call them "DPs") and 110 people of similar age (7-74 years) who have no face recognition issues (we'll call them "controls").

Here are the key findings:

1. Detecting DP: Which Tests Work Best?

We found that a combination of four tests—the Cambridge Face Memory test, the Old New Faces Test, the Famous Faces Test, and the Cambridge Bicycle Memory Test—accurately identified most individuals who have difficulty recognizing familiar faces. What's especially important is that we realised just looking at how many answers were correct isn't enough to spot DP. We discovered that considering both accuracy and the *time it takes to answer* is crucial. To put this in perspective, if we only considered accuracy, only 5 out of the 24 DPs would be classified as having severe face recognition problems. But when we factored in response time, this number increased to 15. *This is a new and very important finding.*

Why it matters: Currently, there's no genetic or biological test for DP. Identifying it relies on below-average performance on face tests. Since these tests aren't foolproof and many people with DP perform normally on them, understanding which tests and measures work best is essential. This helps ensure a wider range of individuals with DP can be included in research, leading to a better grasp of the condition.

2. DP: Is it just faces?

Most DPs had difficulties recognizing faces specifically, not objects like bikes. Interestingly, DPs were even more accurate on the bike memory test compared to controls. However, when we factored in their response times, the groups performed similarly. Similarly, DPs struggled more than controls in knowing whether faces were identical in the Same or Different task, but they were just as good at telling whether houses were identical or not. Their challenges were just for faces.

Why it matters There's an ongoing debate among researchers about whether DP affects object recognition too. Our findings indicate that, for most DPs, the problem is mainly with recognizing faces. Although a few participants struggled with both faces and objects.

3. More than Memory: Face Perception Matters

When we think about recognizing faces, it's like taking a mental photo of a face we've seen before. This mental photo must be stored and retrieved when needed. We call taking the photo *face perception* and storing the photo and being able to find it again *face memory*. Our research shows that DPs not only have issues with face memory but around one third also have severe problems with face perception—taking that initial clear mental photo. This is vital knowledge for designing interventions that might improve DPs' face recognition.

Why it matters: These findings reveal that DP is more complex than just memory problems. Understanding where the difficulties lie helps in developing effective interventions.

4. DPs were slower to detect faces

People with typical face recognition abilities quickly identify faces using a specialized brain network. One of the tests showed that DPs, on the other hand, were slower to spot faces. This could mean their brains don't immediately classify faces as faces and instead use a less efficient route, leading to slower and less accurate face recognition. Brain imaging research supports this.

5. Details of Face Recognition

DPs didn't have trouble determining which of two faces was older, but they did struggle with identifying whether a face was male or female. This again indicates that DP isn't solely about a difficulty recognising individual faces. Instead, DPs might lack a reliable mental impression of male and female faces.

In Summary

Our research demonstrated that DP isn't a single condition. Different individuals with DP struggled with different aspects of face recognition, and very few had difficulties across all tests. This highlights the need for personalized interventions. It's also crucial to use a wide variety of tests, as relying on only one or two might miss someone's specific difficulty.