

# DEVELOPMENTAL PROSOPAGNOSIA



## What is developmental prosopagnosia?

Developmental prosopagnosia (from Greek: 'prosopon' – 'face', 'agnosia' – 'not recognising/knowing'; also called 'congenital prosopagnosia' or 'face blindness') is a life-long impairment in the ability to recognise the identity of people from their face. Persons with the disorder have normal eyesight (or wear appropriate corrective lenses), normal intellect and memory, and no history of brain damage. The condition is largely 'face specific' – people with developmental prosopagnosia report difficulty in identifying and remembering the faces of people they have met before including family members, friends, and colleagues. Although some overlapping difficulties in other areas (such as trouble recognising objects) are sometimes reported.

## How does developmental prosopagnosia affect a person's daily life?

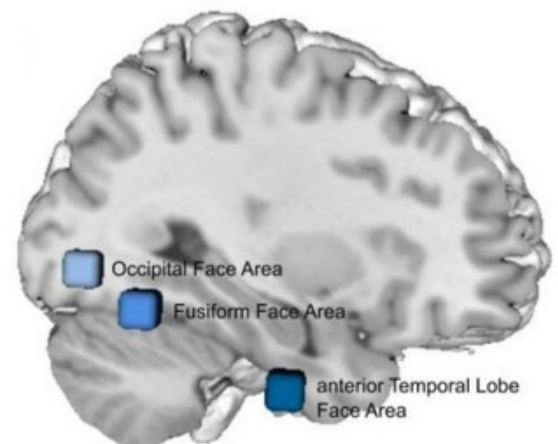
Developmental prosopagnosia can seriously affect a person's day-to-day life. Due to the deficit in identifying or remembering faces, affected persons often avoid potentially embarrassing social encounters which can result in deteriorations in interpersonal relationships, career, and mental health. Also, activities like watching TV can be challenging. People with the condition are unable to identify characters thus following plots and storylines can be difficult. Consequently, they often develop compensatory strategies to cope with situations requiring the recognition of others. For instance, they might identify others by their hair, voice, the way they walk, or their style of clothing. However, if someone changes their appearance (such as a new hairstyle) this strategy may fail. Some people also report memorising very distinctive individual facial features, for example large eyebrows or specific nose shapes.

## How prevalent is developmental prosopagnosia?

Initially believed to be a rare condition, increasing media coverage and research in the past decades suggest that up to 1 in every 40 people might have developmental prosopagnosia. This means that with possibly more than 2 million people with the disorder in Germany, developmental prosopagnosia may be more prevalent than well-known conditions like autism spectrum disorder. Continuing to increase awareness of developmental prosopagnosia is important - often it is only after people hear of the condition in the media that they finally ascribe their previous difficulties in social interactions to a face recognition problem.

## What causes developmental prosopagnosia?

Research on developmental prosopagnosia is comparatively novel and the exact cause of the condition remains unknown. However, the face processing problems seen in the disorder are likely lifelong and multiple family members are often affected suggesting the existence of a genetic component. In the brain, we know that there is a network of regions involved in processing faces (including the Occipital Face Area, Fusiform Face Area, and anterior Temporal Lobe Face Area). Potentially alterations in these regions or altered connections between these regions may be implicated in the condition. This is an ongoing area of research globally and locally at the Technische Universität Dresden.



## Do other forms of prosopagnosia exist?

A rare form of prosopagnosia called 'acquired prosopagnosia' can occur following stroke, trauma, or other forms of damage to (or degeneration of) the brain regions responsible for face processing. In these cases, people 'lose' the ability to recognise faces and can feel like they are surrounded by strangers. This contrasts with developmental prosopagnosia where typical face processing skills did not develop, rather than being 'lost'.

## Is developmental prosopagnosia related to autism spectrum disorder?

Both autism spectrum disorder and developmental prosopagnosia are classed as 'developmental disorders'. In all developmental disorders, there is a disruption in the typical pattern of skill acquisition that would typically emerge in the developing brain. These disorders can affect many different domains (including attention, perception, memory, language, or social interaction). Notably, persons with autism spectrum disorder can have difficulties in recognising faces and processing other facial cues – such as facial expressions. They may also find social interactions difficult. While people with developmental prosopagnosia may struggle at times with social interactions, due to their face recognition problems, this is not indicative of a having autism spectrum disorder (or another developmental disorder). Crucially, most people with developmental prosopagnosia do not meet the diagnostic criteria for autism spectrum disorder. This suggests that developmental prosopagnosia and autism spectrum disorder are separate developmental conditions.

## How is developmental prosopagnosia diagnosed?

It is increasingly common to use both subjective (i.e., self-report) and objective (i.e., test measures to assess an individual's ability to process faces) to diagnose the condition. Common subjective measures are interviews with medical practitioners or researchers and self-report questionnaires. Objective measures, like the Famous Faces Test, frequently consist of comparing, recognising, or memorising pictures of faces. This objective screening is important as people can have limited insight into their face recognition performance (e.g., you may not know how 'good' your face recognition is compared to another person). Objective tests allow a score to be generated and then compared to population norms (averages).

## How is developmental prosopagnosia treated?

Currently, treatment of developmental prosopagnosia is limited to developing coping strategies for dealing with the effects of the condition. Research in the area is ongoing. If you suspect that you might have difficulties recognising faces and that the description of developmental prosopagnosia applies to you, please find more information on prosopagnosia and participation in research in the following section. In case of a sudden impairment in recognising faces and the presence of other symptoms of a stroke, seek medical attention immediately.

## Study Participation & Further Information

Do you have difficulty recognising faces? The Chair of Cognitive and Clinical Neuroscience at the TU Dresden welcomes interested readers to participate in a study on the brain regions involved in developmental prosopagnosia. The study includes computer tests on face and object recognition. Magnetic resonance imaging (MRI), which provides us with information about the structure and function of the brain, is also performed as part of the study.

Inclusion in the study involves an initial screening for developmental prosopagnosia which can be completed at home (online testing). If you would like to participate or have questions regarding participation, please send an email to: [prosop@mailbox.tu-dresden.de](mailto:prosop@mailbox.tu-dresden.de) with the subject line "Face Study 2023".

You can find out more about developmental prosopagnosia and our study here:

or visit

<https://tu-dresden.de/mn/psychologie/ifap/kknw/forschung/prosop>



### References

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