Neuroimaging research suggests that individuals with dyslexia – compared to individuals without – may have fundamental differences in brain regions linked with reading and language. These differences are primarily, although not completely, noted in the left hemisphere of the brain.

Depicted here is a two-dimensional image of the left hemisphere of the brain, which is associated with many language related skills. As noted with arrows, the temporo-parietal regions have been shown to support the integration of phonology and orthographical patterns. The occipito-temporal region, also often called the visual-word-form area, supports the rapid identifications of letters and words. Activation patterns in the inferior frontal regions have also been linked with language related skills.

Studies report fundamental differences in brain development and activation patterns between individuals with dyslexia and those without.