

Shaywitz BA. Shaywitz SE. Pugh KR. Constable RT. Skudlarski P. Fulbright RK. Bronen RA. Fletcher JM. Shankweiler DP. Katz L. (1995) Sex differences in the functional organization of the brain for language. *Nature*. 373:607-9, 1995.

### **Abstract**

A much debated question is whether sex differences exist in the functional organization of the brain for language. A long-held hypothesis posits that language functions are more likely to be highly lateralized in males and to be represented in both cerebral hemispheres in females, but attempts to demonstrate this have been inconclusive. Here we use echo-planar functional magnetic resonance imaging to study 38 right-handed subjects (19 males and 19 females) during orthographic (letter recognition), phonological (rhyme) and semantic (semantic category) tasks. During phonological tasks, brain activation in males is lateralized to the left inferior frontal gyrus regions; in females the pattern of activation is very different, engaging more diffuse neural systems that involve both the left and right inferior frontal gyrus. Our data provide clear evidence for a sex difference in the functional organization of the brain for language and indicate that these variations exist at the level of phonological processing.