

# Watch this (Brain) Space

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Do you look at your child who stutters and wonder why his lips seem “stuck” together (or apart) or her tongue won’t seem to cooperate? Until quite recently, many medical professionals believed that [stuttering](#) was caused by a faulty vocal tract\*, throat or tongue. Researchers at the Children’s Hospital Los Angeles however have uncovered **differences between the brains of people who stutter and those who don’t stutter**. They looked at blood flow in the brain, as it is closely linked to brain activity.

**Specifically, researchers used brain imaging to reveal decreased blood flow in the brains of people who stutter, specifically in the Broca’s area. This is the region associated with speech production.** Individuals with more severe stuttering had even less blood flow to the Broca’s area.

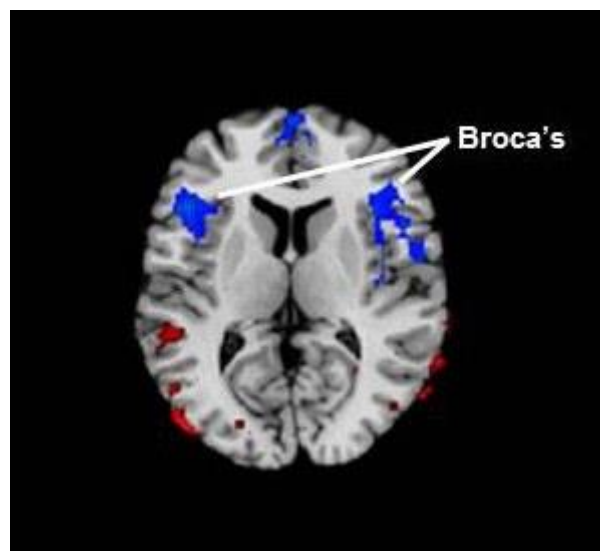


Image from: <http://www.seeker.com/a-root-cause-of-stuttering-is-being-pinpointed-in-the-brain-2182310869.html>

The findings are promising for the 70 million people worldwide who stutter – that’s one percent of the population. **Hopefully, by identifying brain regions involved in stuttering, innovative therapies can be developed to normalise speech-related brain activity.** Possible approaches may include noninvasive stimulation of brain cells using magnetic fields (currently used for depression), behavioural therapies and medications.

Gerald Maguire, researcher and a director of the USA’s National Stuttering Association, is investigating a new drug that targets dopamine. He and his colleagues believe that levels of the neurotransmitter may be too high in parts of the brain of people who stutter. The drug being studied has shown promise for treating Tourette syndrome, another neurological condition. Maguire uses a similar drug to reduce his own stuttering, and is hoping that the drug he is studying will be effective.

“If we can develop targeted treatments and speech therapy targeting these regions of the brain, we hope to make a big difference in people’s lives — particularly in children,” Maguire says. [Early detection and intervention](#) gives individuals and families the best chance of success in managing stuttering. Australia has world leading treatment, including the **Lidcombe Program** for children and **speech restructuring** programs for older clients (see earlier article ‘**Rhythm and Blues: It’s all in the Timing**’).

\* The vocal tract consists of the oral cavity (mouth, lips, teeth, cheeks), pharynx (area behind the nose and top part of the throat) and larynx (voice box and airway).

Our [highly experienced team](#) at *Box Hill Speech Pathology Clinic* have helped countless families with children who stutter. [Vince Borg](#), principal speech pathologist, has a special interest in this area and offers in-clinic and Skype therapy. Call [\(03\) 9899 5494](#) to arrange an appointment.



Image from: <https://www.theguardian.com/film/filmblog/2014/jun/28/the-kings-speech-tv-film-recap>

*By Nicola Anglin (Speech pathologist)*

### **Resources:**

**What Teachers Need to Know to Help Children who Stutter**

<http://www.westutter.org/wp-content/uploads/2016/11/Answers-for-Educators-2013-Final.pdf>

**What to Know and Do When Speaking with a Person who Stutters**

<http://www.westutter.org/wp-content/uploads/2016/11/NotesToListeners-12-2015.pdf>

### **References:**

**A Root Cause of Stuttering Is Being Pinpointed in the Brain**

By Amanda Onion

<http://www.seeker.com/a-root-cause-of-stuttering-is-being-pinpointed-in-the-brain-2182310869.html>

**Stuttering Linked to Reduced Blood Flow in Area of Brain Associated with Language**

<http://www.chla.org/press-release/stuttering-linked-reduced-blood-flow-area-brain-associated-language>

**Reduced Perfusion in Broca’s area in Developmental Stuttering**

<http://onlinelibrary.wiley.com/doi/10.1002/hbm.23487/full>