
The Story of
AUTISM
PART 27:
THE AUTISTIC BRAIN: A BRAIN LIKE NO OTHER

THE STORY OF AUTISM: Autistic Brain - Like No Other

The reason most of us have brains that work in a fairly typical manner is because this standard structural and functional arrangement is programmed into our DNA at birth.

Our circuitry is pre-programmed to fire and wire a certain way.

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If this wasn't the case, we would all be completely different from each other and folks with autism would not stand out at all.

They would be the norm, rather than the exception.

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The retention of one reflex causes a small problem. The retention of many causes a big problem, one that, in the case of autism, can completely alter the functional circuitry of the brain.

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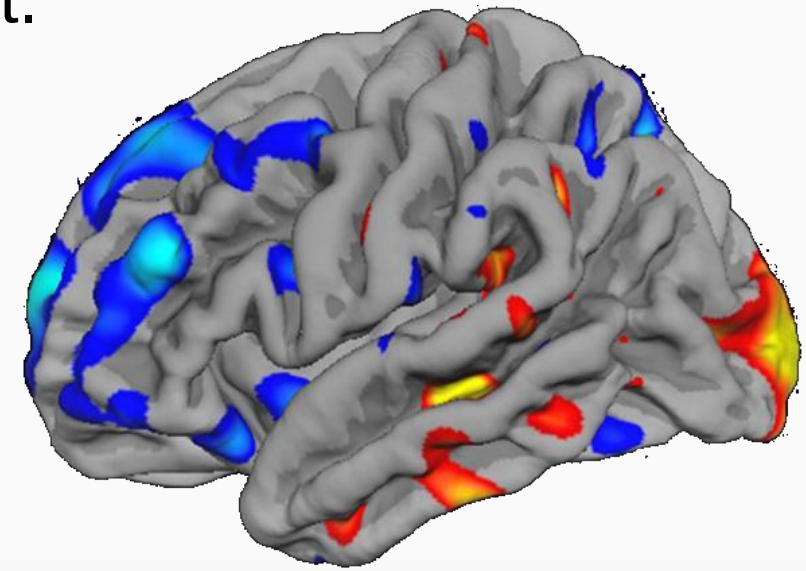
And, from fMRI scans, we know that cortical processing in autistic brains is far more random and scattered than it is in neurotypical brains, where the scans are more consistent.



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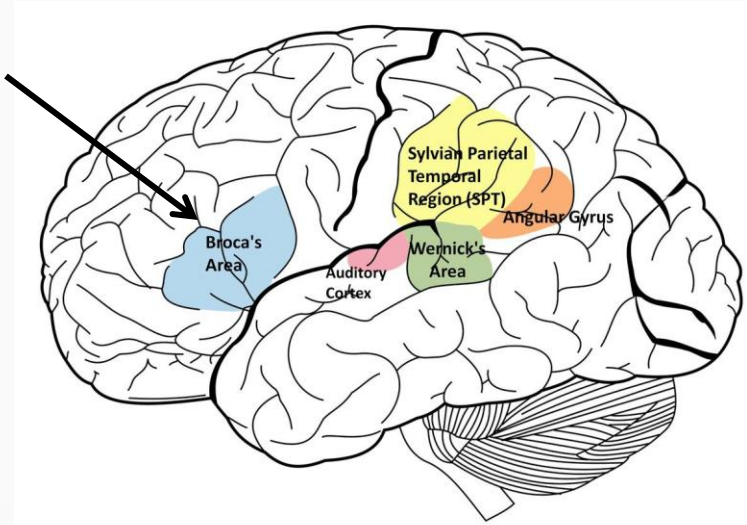
We know that *Broca's area* is one area that is not being used much for it's traditional purpose in autistic brains, because heard words are not getting transformed into articulated language.



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And we know that the lack of modulation and disorganization of sensory input entering ASD brains causes most individuals with autism to tune out or shut down some senses and favor others.

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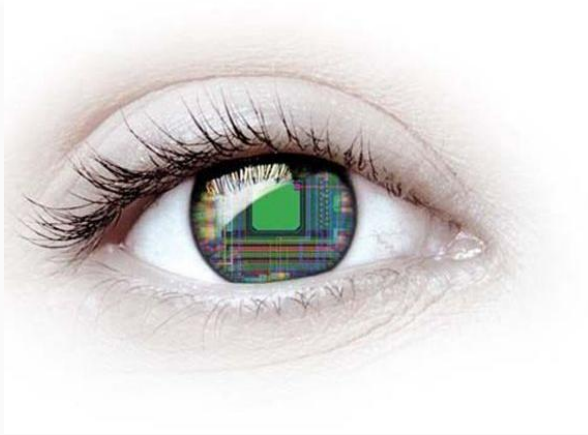
Usually vision is the preferred sensory channel. However, many, like my daughter, favor hearing.



It is rarely touch, because their proprioceptive sense is “off,” so they will either be hyper or hypo sensitive to tactile sensation.

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So…the question is – if most individuals with autism are not using large portions of their brains for the purpose for which they were intended – what are they using these areas for?

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It’s true that if you don’t use neural networks, you lose neural networks. But it is also true that regions of the brain do not disappear.

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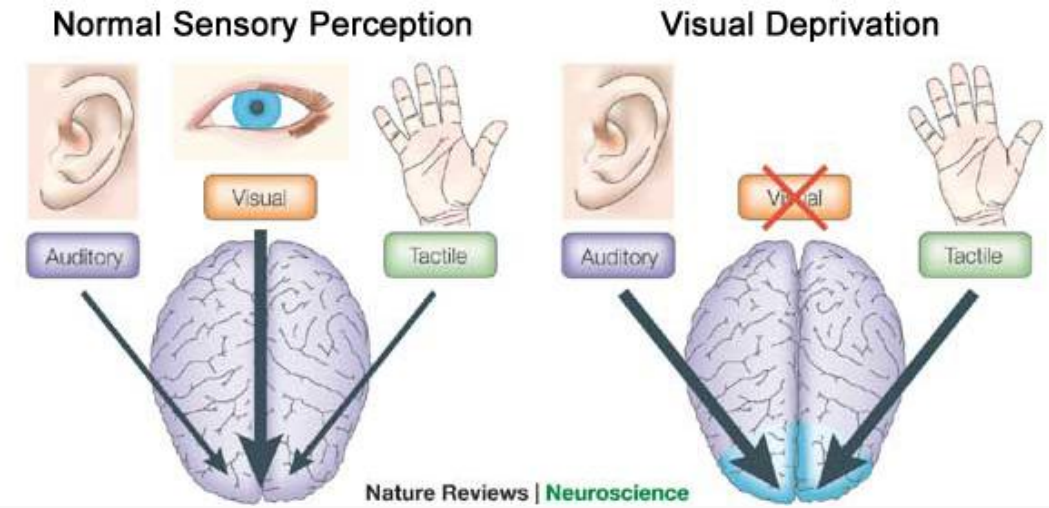
Even though the blind are no longer able to see, the visual cortex is still active in their brains. It just isn't being used to process visual information. **It has simply been re-wired to serve a more functional use.**



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There is a name for this. It's called **cross modal plasticity** and basically, it's just what it sounds like: the adaptive re-wiring of neurons originally created for one purpose to serve another.

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This **adaptive network re-wiring** generally follows long-term sensory deprivation, such as congenital blindness or deafness, but **it can also occur if a person consistently tunes out a sense** due to overstimulation or sensitivity.[21]

21. https://en.wikipedia.org/wiki/Cross_modal_plasticity

77. https://en.wikipedia.org/wiki/Cross_modal_plasticity

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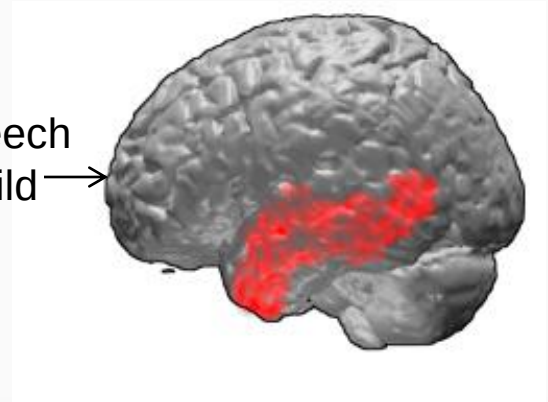
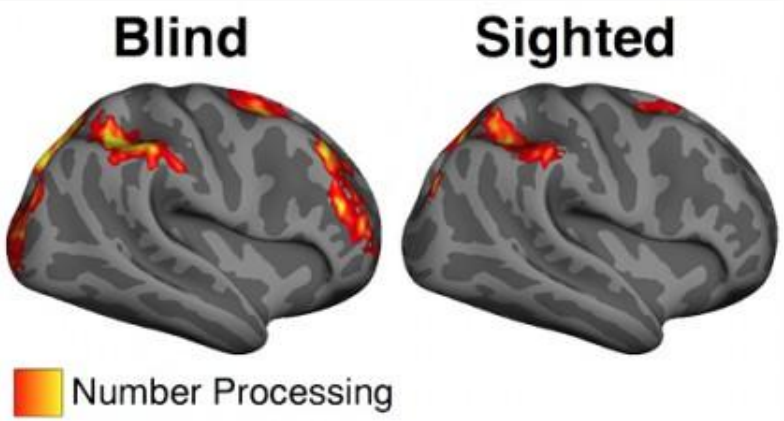
For kids with autism, if they are consistently tuning out visual or auditory information from a young age, it could be that some sensory motor and association areas of their cortex develop more like that of a blind or deaf person.

Brain of speech impaired child →





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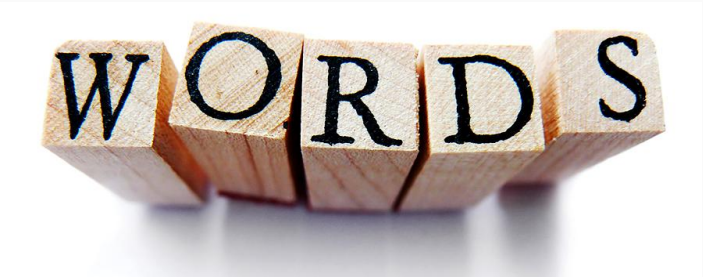
In my daughter's case, with her auditory sense being so acute and her visual sense being under used, some neglected visual processing areas might have been reassigned to the novel task of transforming all the language and conversations she heard from a young age into written words, complete with grammar and syntax.



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Take a minute to think about this. When Meaghan started typing, she already had all the language she needed stored in her brain – somewhere. She could spell anything from the age of 2.

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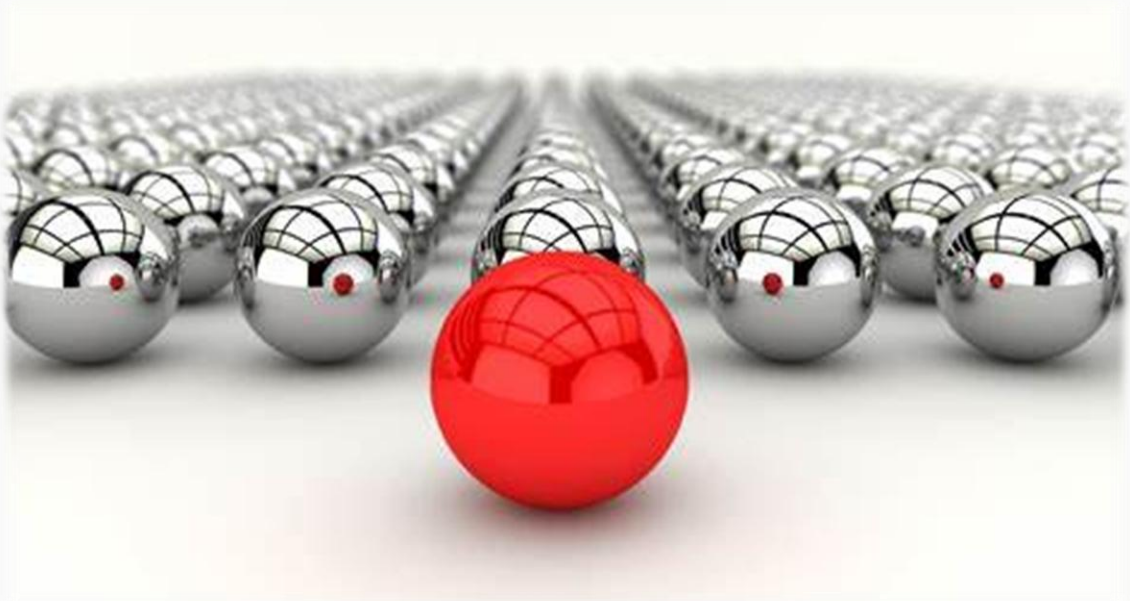
I know we all think our kids are special, but in this case, I don't think Meaghan is. I don't think that she is the exception to the rule.



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I think that cross modal brains are the rule in autism. The reason that more ASD individuals aren't communicating their thoughts and intelligence is because most of them haven't been given the opportunity to learn to type.

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If we are going to reach the hidden recesses of the autistic mind, we have to be open to all kinds of unconventional and innovative teaching tools and techniques.

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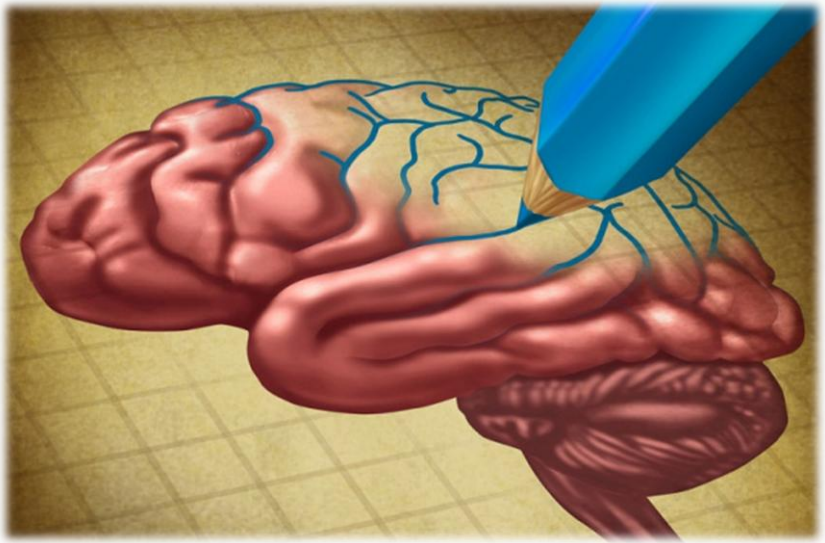
We have to always keep in mind that not only are their brains wired differently than ours, but that the functions of the various structures in their brains might also bear little resemblance to ours.



GO ON TO THE NEXT PRESENTATION