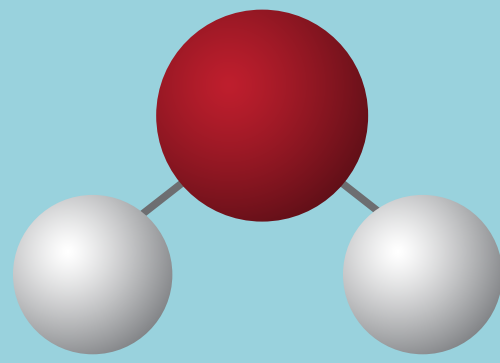


# An MRI measures how molecules are moving in the body using a strong magnet and radio waves. Our study looks at this in 3 different ways.

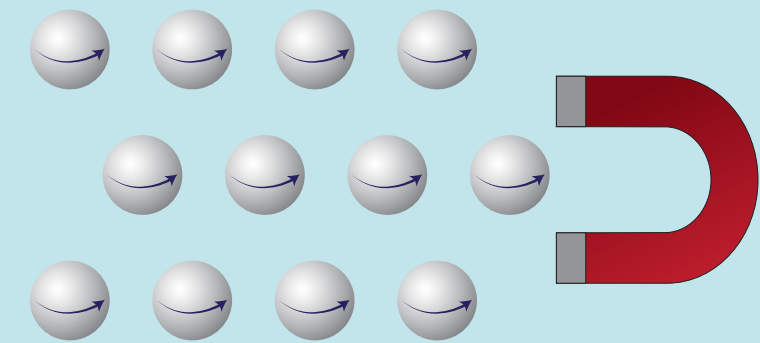
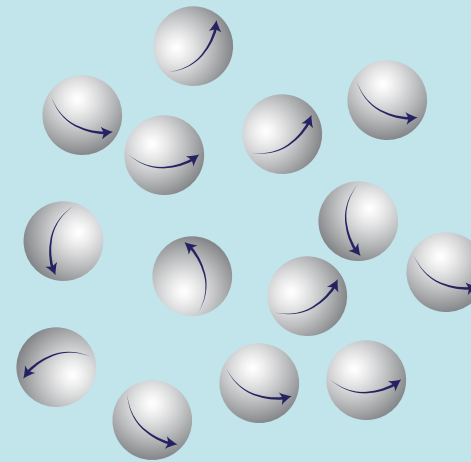
Your body contains a lot of water. Almost **three-quarters** of your brain is water!



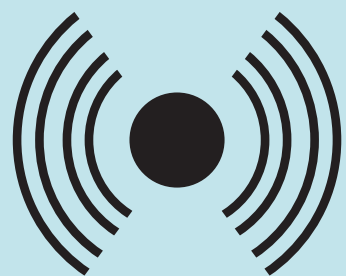
Water is made up of one **oxygen** molecule and two **hydrogen** molecules.

**We can measure the shape of your child's brain by looking at how the hydrogen molecules behave.**

Usually, these molecules are scattered and spinning in different directions.

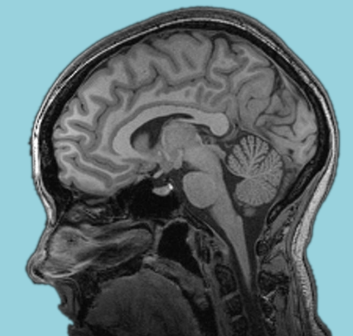
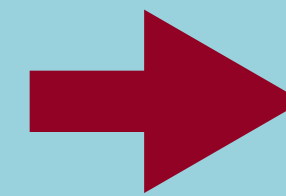
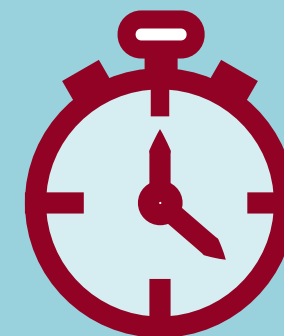


The magnet in the MRI machine gets all the hydrogen molecules to line up neatly.



The scanner sends pulses of radio signals that knock the molecules out of line. But the molecules want to go back!

**Molecules travel at different speeds in different types of brain tissue.**



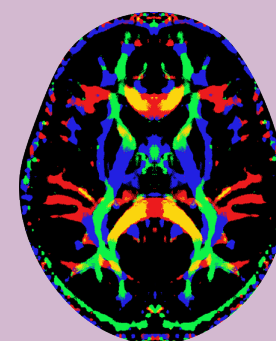
**The machine measures how long it takes for the molecules to get back in line and turns that information into a picture of your child's brain.**

The bundles of wiring that connect different parts of the brain are called

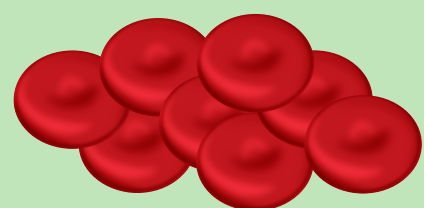


**We can use MRI to get a picture of this brain wiring.**

We can measure what direction **water** molecules inside are traveling and how far they go.



**The scanner turns that into a picture of where the wires are going in your child's brain.**



When one part of the brain is active, the body sends extra **oxygen** through the blood to that part of the brain.

If two parts of the brain get oxygen at the same time, it's likely that those two parts are working together.



Even when your child is asleep, their brain is still active.



**MRI lets us see how your child's brain communicates with itself when it is at rest.**

This helps us understand baseline brain functions and processes.