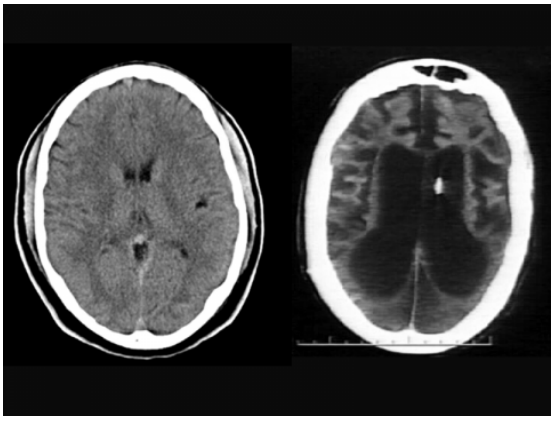
Brain Damage from Lack of Oxygen



A human brain sustains significant damage when it is deprived of oxygen.

This image depicts a normal brain (on the left side) and a brain damaged from lack of oxygen (on the right side).

The white spot, which we see in the damaged-brain image, depicts an implant - known as a "Thalamic Stimulator" - which is used to reduce tremors. Tremors can occur when a person has sustained brain damage.

How does the brain get the oxygen it needs to survive and function? Oxygen is contained in blood. Arteries serve as blood-carriers to the brain.

Without oxygen, brain cells will start to die. That can happen quickly, within a few minutes of an oxygen-depriving event. That is why a person who has experienced a stroke, for example, needs immediate medical attention so that oxygen can keep flowing to the brain.

The U.S. National Library of Medicine - at the National Institutes of Health - specifically tells us why it is so important for the brain to have oxygen:

> *Brain cells are extremely sensitive to a lack of oxygen. Some brain cells start dying less than 5 minutes after their oxygen supply disappears. As a result, brain hypoxia* [lack of oxygen in the brain] *can rapidly cause severe brain damage or death.*
>
> *...Most people who make a full recovery were only briefly unconscious. The longer a person is unconscious, the higher the risk for death or brain death, and the lower the chances of recovery.*

A powerful part of the body, the brain can do many things, but one thing it cannot do is store oxygen. That is one reason why it's so critical for the brain to keep getting oxygen supplies.

The brain is also incapable of storing a nutrient like glucose (another term for "blood sugar"). That is why a person with diabetes must avoid getting too much insulin. Too much insulin can cause a drop in blood-sugar levels.

If the insulin overdose - and resulting blood-sugar drop - isn't addressed immediately (with an infusion of glucose), the impacted person's brain can die.

When the brain, and the brain stem, have lost all ability to function, a person is said to have "brain death."

Click on the image for a better view.

Credits:

Images contrasting a healthy brain and an oxygen-deprived brain are from the Terri Schiavo case. The CT Scan (shown on the right side of the image) was made by Dr. Ronald Cranford in 2002.

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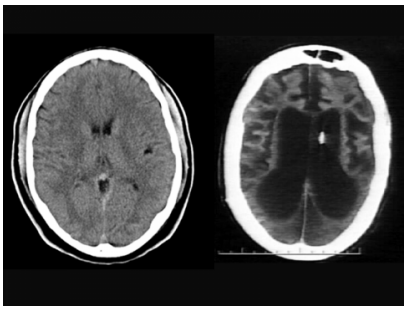
Media Stream



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