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## Does red blood cell shape regulate oxygen supply to the body?

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### DOES RED BLOOD CELL SHAPE REGULATE OXYGEN SUPPLY TO THE BODY?

**Keith C. Afas**

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Capillaries, the smallest blood vessels in your body, are responsible for delivering oxygen to tissues for metabolism. At all levels of oxygen demand, it seems blood vessels know exactly how to increase blood flow to deliver precise amounts of oxygen required! The tiny scale of these blood vessels and surrounding objects makes understanding this process difficult. Therefore, modern attempts to answer these questions have used mathematical and theoretical physics simulation. It has been proposed that the key-player responsible for communicating tissue oxygen need throughout the body, might be your red blood cells! These cells are the subject of our research, where how they might bend, signal, and respond, are explored using geometric techniques! These techniques if successful, might hold the key for understanding how the body is engineered to keep itself regulated, and can potentially explore how this system goes wrong in several diseases including diabetes and sepsis.