Investigating the Effect of Activated Charcoal on the Absorption of Medicines

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Activated charcoal is a chemical that has increased in popularity. It is used in toothpaste to whiten teeth, in face masks to remove ‘toxins’ from the skin and is even taken as a food supplement because it is believed to remove ‘toxins’ from the gut. I intent to investigate the effects of activated charcoal on the absorption of a range of medicines by measuring the conductivity and Total Dissolved Solids (TDS) of medicine solutions before and after the addition of activated charcoal both after 30 minutes and overnight (24 hrs). I created solutions of commonly prescribed medicines with deionized water; either with or without a fixed amount of activated charcoal and placed them in water baths at 37ºC. I then filtered the solutions and measured the change in conductivity in µsiemens of the solution. I was able to ascertain if the drugs were still available to be absorbed by body. To support my findings, I measured the change in TDS (parts per million) of the solutions to show if the charcoal had adsorbed the medicines. My results showed that the conductivity of solutions and the TDS are both reduced after the addition of activated charcoal. This indicates that the activated charcoal is adsorbing the medicine particles and removing them from the liquids, thus interfering with their absorption into the body.