Hello, I am ラージ マカバータイ, associate editor for news and features in the journal Analytical Chemistry.

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The image on the cover of the November 1st issue shows an artist’s depiction of chemical sensor inside the blood vessel.

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Julie Farrar, the Art Director for Analytical Chemistry, portraits biomolecules in cells covering the device one end but not on the other, when nitric oxide stops material from binding.

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The image comes form the feature article in this issue, written by Megan Frost and Mark Meyerhoff of the University of Michigan, who tackled the subject of biocompatibility but implantable chemical sensors.

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The idea of inserting devices inside the body for continuous monitoring has been the Holy Grail in the chemical sensor field.

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Wouldn’t it be great, if doctors could implant sensors in site critically or chronically ill patients, and then continuously track level of important chemical species, like sodium, potassium, oxygen or glucose.

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Well great progress hasn’t made in a past twenty-five years in creating sensors tiny enough to fit inside human arteries or under the skin, there have been problems with these devices that have prevented them from being routinely used.

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The source of most of these problems has biocompatibility.

Biocompatibility refers to the body’s response to the presence of foreign objects.

The body’s response varies depending on the location of the object.

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The response may change the calibration of the sensor, or it may actually change the amount of analyte detected by the sensor because of local changes in metabolic activity.

In both cases the results are the same.

The sensor doesn’t track the true or diagnostically relevant values of the analyte, and doctors can’t rely on measurements to make decisions of body patient treatment.

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In their article, Frost and Meyerhoff describe fundamental biocompatibility issues that researchers have been encountered when trying to make reliable analytical measurements in real-time with chemical sensors implanted under the skin or inside blood vessels.

They also discuss the latest approaches that aim at decreasing the magnitude of these responses and to improve the analytical results from the implanted sensors.

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One option is to apply a coating of releasing nitric oxide.

This reduces the amount of information when a sensor is implanted beneath a skin and decreases the formation of thrombus, also known as blood clot, when the sensors are implanted in any blood vessel.

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We invite you to read more about issues of in vivo chemical sensors in the cover story by Frost and Meyerhoff, and the rest to the content of November 1st issue of Analytical Chemistry.

We hope you to enjoy it.