

The pills that remember if you have taken them

Tom Whipple Science Editor

If you can't remember whether you took your pills this morning, don't worry: soon your medicine will be able to answer the question for you.

A US company has developed a tiny device the size of a grain of sand that sends out a signal when ingested, to record when people take their medication. A significant proportion of the NHS budget is spent on treating people with chronic conditions that require daily drugs. One of the major reasons treatment goes wrong is because they forget to take their drugs.

The technology developed by Proteus Digital Health aims to end this uncertainty. The minuscule sensor, which can be attached to the pills, contains a silicon circuit that transmits a signal to

a patch worn by the patient. Perhaps the smartest part of the device is its power source. The coating of the sensor is copper on one side and magnesium on the other. When these enter the gut, they get wet and, as in a battery, the metals act as an anode and cathode and cause a charge to pass.

The result is that neither patients nor doctors have to rely on the sick person's recollections: the patch contains a complete record of dates and times.

In a preliminary study of more than a hundred people with diabetes and hypertension, researchers found that the device led to impressive reductions in blood pressure and cholesterol. After four weeks, 85 per cent of those using the intervention reached their blood pressure goal compared with a third of those receiving standard care.

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