A HOME ANTIBODY TEST AIMS TO BE LESS-INVASIVE AND EASY TO USE

A new design for home antibody testing kits uses high-velocity microneedles and slight vacuum pressure to rapidly collect small amounts of blood

**Spotted:** With the novel coronavirus pandemic continuing unabated, there is a focus on developing easier and more rapid testing methods. In fact, mass antibody testing is vital to controlling outbreaks and determining who has been exposed. The current testing methods, which involve taking blood, can be uncomfortable and difficult to perform at home. Now Yue Zhaoa, a graduate student at the Muthesius University of Fine Arts and Design has come up with a better way.

Dubbed Testen? Testen! (Testing? Testing!), the home antibody test kit uses high-velocity microneedles and slight vacuum pressure to rapidly collect a few drops of blood from the user’s forearm. Testen comes pre-loaded with the test antigen and once the blood is collected in the device, it is mixed with the antigen at the push of a button. The result appears in the device, such as it does in a pregnancy test.

The Testen device can be easily used one-handed and is simple to operate. After the results are collected, the entire device can be mailed off to contact tracing institutions. Because it uses microneedles, Testen is much easier and more comfortable (and less scary) to use than existing methods, which require users to prick their finger with a needle. After receiving the test kit in the mail, researchers can scan the test results and ID code without opening the package.

**According to Zhou,** “Compared with the current test product, the “Testen?Testen!” test kit provides a safe and comfortable antibody test method. The whole process is needleless and painless,
providing users with friendly and convenient test experience. And it takes into the security and efficiency of data collection.”

The coronavirus pandemic has led to a new urgency for innovations in medicine and testing. Since the outbreak of the virus, we have covered developments such as a cloud lab that allows scientists to work remotely and breathing aids developed through a partnership between Mercedes and University College London.

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Takeaway:

While much of the focus is on developing a vaccine and a more rapid test, the need to make the tests easier to perform has received less attention – until now. Testen can be used not just for COVID-19 too; the same device could be adapted for different types of tests, which could save a lot of time and money in the future. Imagine being able to test for measles, mononucleosis or malaria, easily and cheaply at home. And Testen could also be a huge aid to people who have difficulty accessing medical assistance and testing — no doubt one reason the proposal was awarded a national runner-up in this year’s Dyson Awards.