THE TRUTH ABOUT HOME HEALTH TESTS

Whether you want to check your cholesterol or your fertility, the booming industry of DIY and online health tests means you can do it all in your own home. But how trustworthy are the results? Kate Bussmann investigates

PHOTOGRAPH DAVID CLEVELAND

Once upon a time, if you were worried about your health, you'd see your doctor. Today, you don't need to leave the house to get yourself checked out. You can go online and order one of an ever growing number of DIY kits which test anything from cholesterol to sexually transmitted infections. Some give you the results in minutes.

And, if you spend a bit more, you can even buy online tests that claim to reveal how genetically susceptible you are to dozens of diseases like cancer and Parkinsons. Last year, the genetic test offered by American company 23andme was named *Time Magazine*'s Best Invention of 2008. For just $399 (British consumers can also sign up for roughly £270), it searches your DNA for variants and mutations that have been linked to 87 diseases, either in terms of your personal susceptibility or your carrier status. It also tells you about more than 30 genetic traits, such as longevity and resistance to malaria or HIV/Aids (something described as "nuts" by one doctor I spoke to, who was worried that if someone discovered they were resistant, they may decide not to take precautions – high resistance doesn't equal immunity). On top of all of that, 23andme can also pinpoint ethnic ancestry, for those that are interested.

Fascinating stuff. Or would you rather not know? As someone with hardly any major diseases in my family, I was intrigued. So, ignoring my boyfriend's protests that it would turn me into a hypochondriac, I sent off for 23andme's test kit: a plastic tube you spit in and FedEx to their lab, with results in a couple of months (more on this later.)

It's not just genetic testing getting all the attention. We spend £100million a year on direct-to-consumer (DTC) kits, and it's growing. You can buy kits that test your blood, urine or stools for bowel cancer, osteoporosis, coeliac disease, allergies, bladder infections and the onset of menopause, and many chemists will also perform tests for you.

February, however, saw the UK launch of Milkscreen, which tests how much alcohol from last night's glass of wine is left in a breastfeeding mother's milk, prompting outcry from experts (*see Experts Review The Home Test Kits, overleaf*). And last autumn, a new version of the chlamydia test, Clamelle, marked a major step forward for the industry, because if your results are positive, you can go back to the chemist to buy Clamelle-branded treatment: the UK's first over-the-counter oral antibiotics. In the past, Clamelle took the form of a vaginal swab that could miss infections near the cervix – this new version sends urine samples to private labs for analysis, and uses the same test and antibiotics as your GP. As it's the most common STI in the UK, and one that can cause infertility, it's obviously important that people be treated, but experts warn the test – whether it's done by your GP or at home – is not 100 per cent accurate, although a false result is extremely rare.

"Our worry is that people don't realise the dangers with these tests," says Professor Peter Furness, president of the Royal College Of Pathologists. "People have a tendency to believe a result without stopping to think it could be wrong. Also, the result may technically be right, but maybe they'd be better doing a different test. For instance, if someone with abdominal ➔

EXPERTS REVIEW THE HOME TEST KITS...

BOOTS BLOOD GLUCOSE HOME TEST KIT (£11.49 FOR TWO TESTS)

A finger-prick blood test that estimates the amount of glucose in the blood. High levels can be an early indicator of diabetes. "This has to be done properly," says Professor Furness. "If you squeeze the finger, what comes out isn't just blood, it's tissue fluid as well, and that can affect the results."

BOOTS OVULATION TEST (£15.65 FOR FIVE STRIPS)

Urine test to detect rises in the level of luteinising hormone that occurs 24 to 36 hours before ovulation, helping you work out the best time to get pregnant. Scientists agree these tests are useful. However, they don't actually measure how fertile you are, or whether you may have a problem.

LIVER FUNCTION (£99, YORKTEST.COM)

Tests for elevated levels of two enzymes, ALT and AST (while the NHS tests as many as seven). "In late stage liver disease, [ALT and AST] can be normal – the liver is so damaged, it's not capable of releasing much of those enzymes," says Professor Furness who thinks this test is particularly misleading.

MALE AND FEMALE FERTILITY TESTS (£59.99 FOR BOTH, FERTELL.COM AND BOOTS)

"The female test is pretty useless – it will spot polycystic ovary disease and if you're menopausal, but not most other things," says Professor Catti Moss*. "The male one doesn't do sperm count. Your GP can test these even before you've been trying for six months."

MILKSCREEN (£12.99 FOR EIGHT TEST STRIPS)

Tests levels of alcohol in breastmilk so mothers know when it's safe to breast feed. "There isn't enough good data on the effects of alcohol on breast milk," warns Patrick O'Brien from the Royal College Of Obstetricians And Gynaecologists. "Until then, it may be better for the mother to abstain from alcohol while breastfeeding."

bloating and discomfort starts worrying about bowel cancer, the test could be negative, but it might also be ovarian cancer. They may then delay seeking medical advice as a result of having taken the wrong test."

Even industry experts have concerns. "Boots sells kits in order to provide customers with the opportunity to check aspects of their health within the comfort of their own homes," says Kevin Linthwaite, the company's medical devices advisor. The Boots own-brand range includes cholesterol and bowel tests, but not a liver function test, "because, due to current technology levels, it's best left to medical professionals".

"In the UK, anyone can set up a lab and offer diagnostic testing services perfectly legally, which is a big concern to us," says Doris-Ann Williams, director general of the British In Vitro Diagnostics Association (BIVDA). She advises you check kits for the CE mark – a declaration by the manufacturer that the product meets all appropriate legislation – but worries you still can't know for certain that they abide by regulations. "BIVDA is trying to produce a code for self-regulation," she says, "but it would be difficult to advertise to consumers and unenforceable outside of our membership. The Government should look at this, but it will take something to go wrong before it is addressed."

Companies, for instance, don't have to tell you that, with the exception of some genetic tests, what they're selling is available for free on the NHS. But as we become more educated about health issues, the desire to take back control from doctors grows – especially if you're convinced there's something wrong, but your doctor can't find anything. For example, one in 100 people is estimated to have coeliac disease, but, according to patient group Coeliac UK, the average time between symptoms and diagnosis is 13 years.

The real appeal of genetic testing is the idea that it could give you a glimpse of the future, so you could prevent diseases through extra examinations or a change of lifestyle. And it's a fast developing field. In the two months since I sent off my sample, seven more diseases and traits have been added to 23andme's list, including the breast cancer BRCA gene mutations (note, though, that only three of hundreds of possible BRCA mutations are covered by the test). This is the point at which I get genuinely scared: while most other genetic variants tend to predict a relatively low risk of disease compared with environmental factors like smoking and weight, BRCA1 and 2 mutations can predict a four in five chance of developing breast cancer in your lifetime. And while some DTC genetic testing companies such as deCODE offer the option of receiving your results from a medical professional who will help you interpret the results, with 23andme, you simply go online – something that is of acute concern to experts, who also worry that these tests are made available before being clinically proven.

"It's a science that is rapidly advancing and in its infancy," says Professor Furness. "We've seen examples where the initial scientific publication comes out in a reputable journal, with the intention that other scientists can challenge it, and sometimes within days, companies take those results, put a product on the market and say, here's a test that will tell you whether you're susceptible to this or that." He cites a report that looked at whether subsequent scientific information backed up those early studies: "In a high proportion, there was no subsequent confirmation, and in quite a few of them there was refutation. Different companies operate to different standards, and some of these tests have scientific value, but if you're a member of the public, how do you tell one from another?"

When an email pops up to say my results are ready, I log in and my heart thumps. To be fair, 23andme's website is user-friendly, and results are divided up according to how confident scientists are in the association between the variant and disease – partially addressing Professor Furness's concern. To view the BRCA and Parkinson's results, you have to actively opt in – after a lot of thought, I choose not to. Of the variants they're most confident in (including Crohn's disease and types 1 and 2 diabetes), the only one I show an elevated risk for is psoriasis – a 21 per cent chance of developing it in my lifetime, twice the average. But you can then break down the results by age, and since psoriasis normally shows early symptoms, my risk falls to three per cent. While the website doesn't offer medical advice, it does describe both symptoms and treatment, and, like the packaging on DTC tests, it tells you to see a doctor if you're worried. I also discover that I missed my calling – according to my genes, I'm a sprinter (at this point, everyone who knows me will burst out laughing).

But for the most part, I'm 'typical', which I could have guessed because of my family history. The one effect it did have was to ram home how much my health is in my own hands – experts agree that, in general, diet and exercise have a much bigger impact than your DNA. On that note, I'm off to the gym. ■

STILL-LIFE PHOTOGRAPHS FULL STOP PHOTOGRAPHY. *PROFESSOR CATTI MOSS IS A SPOKESPERSON FOR THE PATIENT PARTNERSHIP GROUP AT THE ROYAL COLLEGE OF GENERAL PRACTITIONERS