

Meet your health superheroes

From the brain scientist fighting the gender gap to the Covid-19 vaccine researcher, these game-changers are making great strides for female health. Their mission? To improve the lives of women everywhere

Interviews: Alex Davies

Allison Jones

CANCER RESEARCHER

Supported by UK charity The Eve Appeal, the team goal of senior research associate Allison, at UCL (University College London), is to revolutionise the diagnosis of four cancers that make up 47% of all cases in women.

'I've loved biology and nature since I was small, so I've built on that enthusiasm. It's a very interesting pursuit: to understand what happens in our bodies to cause cancer and disease and try to make a difference.

We're developing tests for breast, ovarian, womb and cervical cancers. Our work involves looking at different tissue types [from a bank of thousands of women] and trying to find patterns specific to women who've gone on to develop cancer, and those who haven't. Take ovarian cancer, for example. Because the symptoms – persistent bloating, bowel-habit changes and things like that – are so vague, it takes much longer to get diagnosed.

We're hoping to find patterns that tell us more about a person's *risk* of disease. Then women could be tested, around every five years. Those with a particular pattern could be screened more often to make sure everything's OK.

My advice is to get to know your "normal" and be in tune with your body. Get informed about your anatomy – your vulva is not your vagina, for instance. A lot of women don't know the names of the different parts to be able to explain what's going on, which is a sad thing. The Eve Appeal website [eveappeal.org.uk] has amazing resources about different gynaecological cancers. Plus, the Ask Eve Information Service offers free expert advice if you're worried about symptoms.'





Zeenath Uddin

MIDWIFE AND MATERNAL HEALTH ADVOCATE

Not only has Zeenath been bringing new life into the world for more than 20 years but, as head of quality and safety at the Royal College of Midwives (RCM), she also advocates for equality, empowerment and better outcomes for all women in the maternity space.

'My mother inspired my vocation. When I was 12, she was pregnant with my sister and I'd attend her hospital appointments and translate some of the things she didn't understand, as she speaks Pashto. I always wanted to work in a field that helped communities that weren't well represented.

Midwifery is about empowering, defending and being with women during an important transition in their lives. Every experience is unique.

You're almost four times more likely to die during or after pregnancy if you're of Black African or Caribbean descent; three times if you're of mixed ethnicity; and two if you're Asian. The RCM's Race Matters campaign aims to tackle race inequality within maternity services for midwives, maternity support workers and for Black, Asian and Minority Ethnic (BAME) women. The campaign has five key pledges: to empower, listen, support, educate and motivate each other. These inequalities in health really are the defining challenge of our time. We also want to acknowledge the invaluable contribution of the midwives and nurses of the Windrush generation.

I'm still a practising midwife in addition to my RCM role. My week involves working on our projects to improve maternal and foetal wellbeing, then I may do a couple of [midwifery] shifts around that or on the weekend. That time on

'I always wanted to help communities that weren't well represented'

the front line helps to shape our policies. I lead on the Race Matters Task And Finish Group, which is responsible for ensuring the RCM's commitment is delivered. My work includes speaking at events as well as to student midwives. Education and raising awareness are key to tackling racism.

My best advice to pregnant women? I love the acronym BRAIN when it comes to advocating for yourself. Think B for what are the benefits; R represents the risks; A is for alternatives; I is your intuition and what it's telling you; and N stands for "now or nothing" – do you have to make a decision right now, or could you wait a while? Ask questions, be vocal and seek a second opinion.' →



Professor Gina Rippon

BRAIN PROFESSOR

An emeritus professor of cognitive neuroimaging at Aston University, Professor Rippon has studied the brain for over four decades. Her book *The Gendered Brain* (Vintage) uncovers why we need to get rid of the pervading myth that women and men have fundamentally different brains.

'I've always been fascinated by the brain. There are stories of me examining my teddy bears to see if they had brains! When I first started out in neuroscience, I was firmly wedded to the belief that there was male-brain thinking and female-brain thinking. But I discovered what was supposedly a well-supported scientific belief was actually not well supported at all. Historically, women had an inferior position in society, so the

starting point for brain scientists was that men and women were different. Are there big differences? No. If a male or female came into my lab, I couldn't predict what their brain would look like.

It's important to challenge the myths, otherwise you're constantly battling against the idea that the gender gap is really just a manifestation of something nature has determined. A careers advisor might think girls don't have "science brains", for example. It's great giving talks in schools and trying to persuade young girls that science is for everyone, including them.

My proudest achievement is overturning the "biology is destiny" trope. I speak in different venues, from tiny bookshops to the Sydney Opera

"Use it or lose it" holds true... our brains are flexible and mouldable'

House, to get the conversation started. I've also been involved with the amazing L'Oréal/UNESCO Women In Science initiative, which reveals how hidden barriers can prevent women progressing in science. Currently, I'm working to highlight the problem of the "missing girls" in autism – how the idea that it mainly impacts men has prevented the recognition of girls and women on the spectrum.

The old adage "use it or lose it" holds true. Many assume that once the brain stops growing, in your late teens/early 20s, that's it. But in fact, our brains are flexible and mouldable, so it's about challenging yourself mentally and physically to keep your brain healthy. Learn a second language or the tango! And find ways to connect with other people – being social is so important.'

Dr Katrina Pollock

VACCINE INVESTIGATOR

An award-winning researcher on the front line of Covid-19 vaccine trials, Dr Pollock is senior clinical research fellow in vaccinology and honorary consultant at Imperial College London. After a survey revealed a quarter of young women are reluctant to have the jab because they're worried about how it'll impact fertility, she wants to reassure and put minds at ease.

'My job is to run early-phase vaccine studies. I work on the first in-human trials with very



new products – usually across a range of vaccine candidates and infections, such as chlamydia, HIV, Ebola, malaria and now Covid-19. I delivered studies for the Oxford-AstraZeneca vaccine – a great experience and a real privilege to work on – and I'm the chief investigator for the Imperial vaccine study. The technology we're developing [with the latter] is very new, but incredibly promising.

The Royal College of Obstetricians and Gynaecologists and the Royal College of Midwives have stated that there isn't any data to suggest Covid-19 vaccines would affect fertility. The volume of information bombarding us all is unprecedented. Some appears to be scientific, but it's not. And there's lots of misinformation about vaccines, especially for Covid-19. If you're thinking about fertility or having a baby, look at reputable sources – the NHS website, the Royal Colleges – and question what people are telling you.

There are a few diseases we don't see any more because vaccinations have reduced them to being almost non-existent, but there is still plenty of work to do. My proudest moments? I ran a study of flu vaccines for people living with HIV, which won a prize from the British HIV Association. And working on the Covid-19 vaccines, too.

I also enjoy teaching and mentoring. In some ways, the perception of vaccinology as a male-dominated field is lagging behind the reality. There are many eminent female doctors and scientists leading the fight against Covid-19. This signals a much wider change as more women train in these areas and go on to have successful careers.' →



Dr Ghada Mikhail

CARDIOLOGIST

Women make up just 13% of cardiology consultants in the UK, and Dr Mikhail is one of them. A consultant interventional cardiologist at Imperial College Healthcare NHS Trust and founder of the Her At Heart initiative, she champions awareness and research around cardiovascular disease in women.

'I treat people who are having heart attacks. We open up blocked arteries – the quicker you do that, the better the outcome. I also perform a procedure called transcatheter aortic valve implantation (TAVI), which involves replacing heart valves under local anaesthetic in patients who can't have open-heart surgery.

Heart disease is perceived as a man's disease, but one in 13 women dies from it. When you reach menopause, your hormones change and their protective effect decreases. Your risk of heart disease goes up. So start modifying your risk

'We mentor female trainees and try hard to get them to take up this career'

factors at a young age: exercise regularly, give up smoking, watch your weight and diet, get your cholesterol and blood sugar levels checked, know your family history. The other issue is that women with heart problems can present with atypical symptoms. You can get the tightening chest pain going down the left arm, but also breathlessness, jaw discomfort and shoulder, upper back or upper abdominal pain. It's about being aware.

Women tend to be under-represented in cardiovascular research. I'm involved in this and things are getting better – there's been a big drive from the scientific world to include more women



in studies. We're all working together, either designing trials dedicated to the subject of cardiovascular disease in women, or making sure we analyse gender differences *within* studies. Treatment of heart disease in women is improving, too, thanks to the public and medical world being more aware of how women can present with symptoms differently. More research also means we have a better understanding of their treatment.

Cardiology is a very male-dominated field. We mentor female trainees and try hard to encourage medical students and junior doctors to take up this career. The hours are long – you can get a call in the middle of the night and have to be in hospital within an hour to treat a patient having a heart attack. It's extremely rewarding, though.'