

PermaWarfare

Liz Hollis looks at new male contraception, from radio-controlled valves to ultrasound

Men are short-changed when it comes to birth control. Vasectomy is painful and not always reversible. Condoms blunt pleasure, break and slip off. Or there is that Russian roulette stand-by: coitus interruptus.

But science finally may have found an answer for reversible, reliable and easy contraception for men with a new breed of futuristic, non-hormonal gels that promise a high-tech solution to sperm control.

Tears around the globe are developing new techniques that can block ducts in the testes, stop sperm before they come out of the body or even scramble sperm production.

"Men want new contraceptive methods," says Elaine Lizer, director of the non-profit Male Contraception Information Project in San Francisco. "A decade ago demand wasn't there and it was assumed women wouldn't trust men to take charge of birth control anyway. That has changed."

Switching sperm flow on and off

Professor Derek Abbott and his team from the University of Adelaide in South Australia have invented the first remote-controlled key tags that allow men to control a valve that can switch their sperm flow on and off as required.

The size of half a rice grain, the "tertiary control micro-valve" is injected by a doctor into the vas deferens, the duct that carries sperm from the testes, a process that takes only a local anaesthetic. The valve can then open and close to control sperm flow out of the body.

"Vasectomy entails surgery, pain and it might not be reversible. Our micro-valve provides an alternative," says Abbott. Demand for the new valve has been unprecedented. "I've been inundated with inquiries from men from all over the world," he says. The device will now need five years of animal trials before it can be used in humans.

Inject vs device

Meanwhile, the Minnesota-based Shepherd Medical Company is expanding trials of its Intra Vas Device (IVD) key tag which implants in several sites that block the flow of sperm. The implants, held in a polymer, non-scapable, non-reversible sheath, are likely to come on to the market in the next two to five years. Shepherd strategists having European, Canadian and US approval by 2010.

Implantable ring

In California a team is developing an implantable ring that circles the vas deferens. Once it can switch it on to stop sperm other than block their passage, making them unable to fertilise an egg they can also turn it off again.

Injectable to block the sperm tubes

An injectable compound called RISUG that blocks the sperm tubes is likely to be one of the new contraceptive methods to make it into GPs' cabinets. It is already being trialled in India

and may be on the market there within two years. Lauer says that she can see men from the UK or US flying to India to be treated with it.

Sperm protein in ejaculate after RISUG have broken into membranes and cannot attach to an egg. The method starts working in about 10 days and can easily be reversed.

Ultrasound and scandy sperm...

Stopping the sperm while ultrasound is another promising new male contraceptive. It is simple and convenient: a machine applies ultrasound waves to heat the testes painlessly for six months.

Fertility returns gradually, although it is not clear yet how many times men can safely use the method without permanently affecting their sperm count. Investigations are fine-tuning equipment and techniques in small pilot studies and a larger study is planned in rats.

...and can permanently close the sperm tube

A California company, Vitality Medical Products, is developing the HIFU-microne (high-intensity focused ultrasound) to close the sperm tube permanently without surgery. The small transformer is changed round the scrotal skin, guiding the sperm tube after a man's slipping.

Needle to development

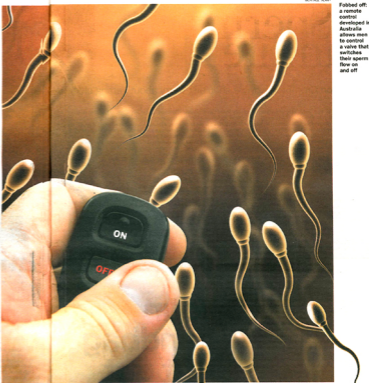
The future of male contraception looks promising, but there is one large hurdle. Most of the new inventions appear to work in the laboratory and in early trials, but they need millions of pounds more investment before they reach the marketplace.

Linder says that if more money is put into these new products "will simply languish in the laboratories. Male contraception is the forgotten stepchild of research. Pharma companies, governments and foundations just haven't invested enough."

She says that risk-averse pharmaceutical companies are put off by the instability involved in research and development, which means many. Many methods are now stalling at the point of animal and human trials. Development should no longer be left to the profit-motivated world of these companies, she says. Instead, the British and US governments and other charitable foundations must step in to fund the early trials.

"There are plenty of new methods in the pipeline. You need someone to take responsibility and control of contraception. The idea that men aren't willing to participate is clearly not true."

Demand for these new devices is so high that Male Contraception Coalition (MCC) has the ability that runs www.malecontraception.com, has been inundated with queries about where men can find it there. But at present they can be accessed only through clinical trials.



Fabbed off: A remote control developed in Australia allows men to control a valve that switches their sperm flow on and off

You could always decide to take your fertility into your own hands and experiment with test methods, says the MCC. This is the rather low-tech option of sitting in a very hot bath for 10 consecutive days, as reported in the 1960s by the Swiss doctor Dr Martin Vogel. Famous for his 'hot sitz' baths, he revealed that the method provided 60 per cent' contra-

ception because heating the testes inhibits sperm production.

Finally, for the truly adventurous, there is always hope that the huckster Wayne T. Walker will manufacture his US patent number 506,909, a battery-powered sperm blocker designed to be worn for two hours each day. Suddery, a simple condom seems appealing.

The long journey

Why no male pill?

The first human trials of a hormonal male pill began in the early Nineties. So why are we still waiting?

Side-effects

The major stumbling block is the risks involved in men taking hormones like testosterone and progesterone to stop sperm production. They may cause mood swings, enlarged breast tissue, hair loss and a possible increased risk of prostate cancer.

Efficacy

Trials have indicated that it can take months to stop sperm production, with regular injections or implants. More worryingly, hormones don't seem to work in up to 20 per cent of men.

Profitability

Drug companies have not piled money into the male pill because they don't see a mass market for it, says David Brown, who runs the charity vasectomyinformation.org.uk (vasectomyinformation.org.uk). Organon, now part of Schering-Plough, the American pharmaceutical company, has closed its hormone male contraceptive programme, and says that future development in this area is unlikely. They say that men are unlikely to accept hormone injectors and implants for extended everyday use.

Outlook

Most research is now in university labs on a smaller scale. Non-hormonal methods, like sperm-blocking devices, are likely to be an offer first.