

Making more of nature

HELEN CROMPTON

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Mention the word vasectomy and if there's a bloke in the room he might feel a little confronted. He might unconsciously and defensively place his hands in front of his manhood. Yes, the idea of "the snip" can cause ripples of disquiet in the male psyche.

But what if science came up with something less challenging to a man's sense of potency, something less invasive and unlike vasectomy, something that could easily be reversed? What if science invented a contraceptive that was — oh male joy — remote controlled?

Well, science has — or rather **Adelaide**-based doctors Said Al-Sarawi and **Derek Abbott** have. Say hello to the electronically operated male microvalve which once inserted in the penis, makes birth control as easy as opening and closing your garage door — not that you'd be taking the car in and out on a daily basis, so to speak.

This nifty little valve is showcased on a New Inventors special: Re-inventing the Body. Or to be exact enhancing the body's function. Host James O'Loughlin, designer Alison Page, broadcaster Bernie Hobbs and futurist and author Mark Pesce are on hand to examine the strengths and weaknesses of each new invention.

Take the EPOC headset that translates the electrical impulses in our brains to control movement, literally facilitating mind control over matter. Then boffins have designed a car that can tell us when danger looms as well as interpreting road signs for us, hoping to reduce road fatalities. And before blokes reject the idea of having a valve inserted into their reproductive organ, this little beauty is half the size of a grain of rice.

The microvalve, says Dr Abbott, a professor at the University of **Adelaide**, is designed to give people greater options. Apart from being less invasive surgically than a vasectomy, it allows for easy reversibility. An electromagnetic chip, it responds by closing two doors that prevent sperm from escaping. Once the "garage is shut" it's your doctor who is in charge of the remote (ruling out squabbles with your significant other on who gets to change channels).

"The problem with the traditional vasectomy is not that the surgeons can't rejoin the tubes but that when they rejoin them the guy is now infertile because the sperm has had nowhere to go in the intervening time," Dr Abbott explains. "You don't stop producing sperm, but you develop an auto-immunity to your own sperm. That's what happens when a man is vasectomised and why he becomes infertile. So the idea of the valve is that a guy goes once a year to his doctor and has it opened in a controlled setting and release the sperm and not build up auto-immunity."

Professor Abbott says he was inspired to create the valve 10 years ago when a close mate, having recently had a vasectomy, was shifting the family barbecue to a new spot in the backyard — when he nearly came undone. Empathising with his pain, Professor Abbott got to thinking of ways to reduce the trauma of surgery, indeed to dispense with it entirely. But the microvalve is not just a new male contraceptive. Small in size but potentially mighty in application, the invention might be used in pathology for cell counting and sorting, in DNA sequencing and something with the colloquial title of lab-on-a-chip, for the "whole new technology" of chemical sensing. Then there's the possibility of it being utilised for finely tuned drug delivery (for example to improve insulin delivery for diabetics). On a completely different note, Professor Abbott says: "We have ideas for using the valve in fine ink jet printing."

The professor, who specialises in electrical engineering, but also deals in mathematics, physics, biology and

medicine, says the microvalve is both “extremely sophisticated and very simple”.

Today the microvalve is still evolving in the lab and must undergo animal testing before it is an option in the market as a contraceptive. A scientific possibility, it's not quite an open and shut case.

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