

**Read all about it...** It can be awkward when a patient asks you about a report in their favourite tabloid detailing an amazing research breakthrough or a 'cutting-edge' new treatment / test and you don't know what they are talking about! So this section fills you in on the facts.

## Taurine deficiency could cause male infertility: Scientists claim a lack of the vital amino acid deforms sperm

The Daily Mail – 11 May 2018

This story in *The Daily Mail* details research carried out between the University of Tsukuba in Japan and Cornell University in New York. Their study, published in *FEBS Journal* (Federation of European Biochemical Societies), used mice lacking cysteine dioxygenase (CDO). It had previously been identified that mice lacking CDO exhibit idiopathic infertility. The sperm of these mice exhibit numerous issues; the most striking of which is a failure of osmoregulation as they transition through the epididymis and into the female reproductive tract.

CDO plays a key role in taurine synthesis. Taurine (so called because it was first isolated from bull bile) is a sulfonic acid vital to

the functioning of various human tissues and it appears to also play a key role in osmoregulation in sperm. These days, taurine is perhaps most well known as an energy drink ingredient.

The research found that supplementing mice with taurine helped to restore fertility and sperm function, indicating that the vital taurine is actually absorbed by the sperm, rather than produced within. It is unclear at this time if this research translates to humans and I certainly don't think consuming large quantities of energy drinks would end well, but if a simple supplement could potentially help men with oligoasthenozoospermia – that would be a very welcome finding.

## Mum's wee miracle: Sitting in this electric chair for 30 minutes zaps your pelvic floor back into shape

The Mail on Sunday – 12 May 2018

This story details a new device which is now available at a private clinic in Liverpool. The titular 'electric chair' (which looks more like an oversized toilet) uses high-intensity focused electromagnetic (HIFEM) technology to stimulate the pelvic floor of women suffering stress urinary incontinence. The manufacturer markets the device as an alternative to pelvic floor exercises. Apparently, half an hour of sitting in the 'electric chair' stimulates over 11,000 pelvic floor contractions and six sessions is apparently similar to several months of pelvic floor exercises, but can be delivered in just three weeks.

I struggled to find any publications detailing the efficacy of this device, but did find an abstract for a pilot study written by a clinician working at The Laser Vaginal Rejuvenation Institute in America. Their study of 30 women with stress, mixed and urge leakage reported 95% improvement in quality of life scores and 67% of the 30 patients reporting decreased pad usage. Clearly, there doesn't seem to be the evidence to back this up yet, however, in the current climate another option for managing incontinence would be useful and this is just unusual enough that it might work.

## Viagra could be history as one little jab offers men growing hope

The Times – 13 May 2018

This story details a presentation due to be made at the July meeting of the European Society for Human Reproduction and Embryology. Researchers at the Danish Centre for Regenerative Medicine are using autologous stem cells, harvested from liposuction, to treat men with erectile dysfunction following radical prostatectomy surgery. Treatment involves injecting around 20 million stem cells into the penis in an effort to reverse erectile dysfunction.

Previous studies in rats have indicated that injected stem cells do not 'grow into new nerves' as many readers may be led to think. In fact, the stem cells appear to act through a paracrine effect in animal studies. Injected stem cells are thought to raise intra-cavernosal levels of IGF-1, bFGF and VEGF and this then improves blood flow and smooth muscle function, reversing the previous damage caused by hypoxia.

In terms of human studies, publications thus far are sparse. In 2016, the results of a Phase I trial were published by the Danish team. In this single-arm study, 17 men who had recently undergone radical prostatectomy were treated with stem cells. Importantly, there were few complications or side-effects and 8 out of 17 men recovered sexual function. Unfortunately, the small nature of this trial and the lack of a control arm prevented any further analysis. In most studies of penile rehabilitation treatments, whether it is sildenafil or alprostadil being used, the control groups receiving no treatment generally have potency recovery rates of 20-66% anyway. The 47% responding in the Phase I trial therefore does not necessarily herald a breakthrough.

I look forward to reporting back later in the year, once further results are available.



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