

Penile Implant Shows Sexual Promise When Turn on the 'Heat'



By *Jamie Wells, M.D.* — January 3, 2017



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[Erectile Dysfunction \(ED\) adversely impacts over 30 million men](#) [2] in the United States to some extent. Medical efforts to combat this considerable personal strain and relationship stressor are replete with various shortcomings.

Depending upon the cause, treatment options can be limited. Traditionally as a last resort when a man is ineligible or has failed less invasive alternatives, surgical insertion of a penile implant is considered.

The common types that exist fall under the inflatable (IPP) or malleable (MPP) penile prosthetic umbrellas. Innovation in this field has been relatively stagnant the last 40 years which is why a team of researchers—whose concept was recently patent-approved—developed a new prototype to expand the options.

This promising technology consists of a novel Nickel-Titanium shape memory alloy (NiTi SMA) exoskeleton that encases a pliable latex cylinder with silastic caps which when exposed to a small amount of heat expands in length and girth. In preliminary testing of their objective, the material was compared to commercially available prostheses and deemed to produce sufficient and comparable mechanical forces of a simulated erection, but without requiring a pump or reservoir.

(1)

The goal of all models is to mimic as much as possible the physiologic penis in all its glory, albeit flaccid or erect. However, the existing products though helpful are no panacea. Depending on the choice of implant, [issues like local erosion of surrounding tissue](#) [3], difficulty and complex nature of the procedure itself, involvement of additionally inserted pump for control and multiple components

in general, mechanical failure and leakage, ability to be flaccid or stable are among the many realistic challenges.

The investigators describe the perfect implant for this population:

“In broad terms, penile prosthetics are used to restore function and make the body ‘whole’ again. As such, the ideal penile prosthetic device to treat erectile dysfunction would mimic a native physiological erection as closely as possible, both in function and appearance. It should perform the mechanical duties necessary for successful intercourse when erect and durable enough to match usage during the lifespan of the patient. When not in use, the ideal prosthetic would mimic the flaccid state of the penis and be discreet... would not interfere with urination and other activities of daily living. As a component of the sexual experience, the prosthetic too should essentially maintain or improve the quality of the experience for the patient (eg, sensation, spontaneity).” (2)

This latest endeavor boasts a thermally-activated implant that lacks added inserted paraphernalia to control it's up and down motion, hence a “smaller footprint in the body.” Far from market use, the starter study performed experiments to assess the material could withstand the same rigor of the existing IPP and MPP devices. The success of this very early initial work prompts further exploration to determine its true therapeutic potential for this often devastating condition.

The collaborators published their findings in the journal *Urology* and are undertaking the necessary efforts to progress toward making this technology a one day proven option for ED sufferers. Next steps will involve optimizing a triggering mechanism whether it be a remote or heating pad and cooling washcloth (for return to body temperature). Conscientious in designing an option that could be surgically placed in a rather similar but simpler manner, the authors would manage to streamline its future use and expand the pool of trained urologists who could readily utilize it for their patients. As it stands, the current implants can be complex in nature to place and the pool of physicians apt to accomplish the task is limited.

Though possibly five to ten years away from market should this NiTi alloy prevail in meeting its milestones, this news puts a necessary spotlight on a common and all too often stigmatized problem. ED is nothing to be ashamed of and, thankfully, has a variety of treatments currently available for those struggling with it. Speak to your doctor if you have symptoms of ED as this might reflect the first indication of an underlying medical issue. There are a number of choices—depending on the inciting factors—that a physician can explore for treatment options to help you restore your sexual health. [About 40% of men between the ages of 40 and 70 have some level of ED](#) [4]. To learn more about causes of ED, review this link: [Banging Out Penile Prowess](#) [2].

As this article conveys, the future is bright as well.

NOTES:

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Educational Grant.

SOURCE:

1. (2) Le, Brian, McVary, Kevin, McKenna, Kevin & Colombo, Alberto. [A Novel Thermal-activated Shape Memory Penile Prosthesis: Comparative Mechanical Testing](#) [5]. Male Sexual Dysfunction, *UROLOGY* 99, 2017.

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[1] <http://www.shutterstock.com>

[2] <http://acsh.org/news/2016/11/25/banging-out-penile-prowess-10485>

[3] <http://acsh.org/news/2016/09/12/penis-urethra-inanimate-objects-orifices-10145>

[4] <http://news.wisc.edu/heat-activated-penile-implant-might-restore-sexual-function-in-men-with-ed/>

[5] <http://dx.doi.org/10.1016/j.urology.2016.09.007>