

Lifestyle habits and idiopathic male infertility: Are men willing to change?

The impact of daily habits and actions on certain chronic conditions such as type 2 diabetes and essential hypertension are well known and have been investigated. When a patient with these conditions asks questions such as “Doctor, what should I eat and what can I do at home to help with this condition?”, the answers are relatively straightforward, with plenty of lifestyle modification options available. However, these types of patient questions are difficult to answer when one is dealing with patients with infertility specifically male idiopathic infertility, for the purpose of this commentary. In these situations, one can review the limited but growing evidence of the impact of exercise, diet, sleep, stress, and vitamin/antioxidant use on semen parameters (1). However, out of all lifestyle factors that may impact semen parameters, one that is likely asked the most about is the effect of scrotal temperature on semen parameters, usually in the form of an indirect question such as “Is my laptop or choice of underwear hurting my fertility?”

Exposure to supraphysiologic temperature extremes where patients report fever or are exposed to hot sitting baths (temperatures up to 47°C) has been reliably shown to decrease sperm quality, usually in the form of oligospermia. More modest elevations in scrotal temperatures, such as exposure to wet heat or the use of tight-fitting underwear, however, have not led to consistent observations on changes of semen quality. In addition, subsequent attempts at cooling the scrotum to improve semen parameters have not consistently shown a benefit, and it is still unclear whether the full benefit from varicocelectomies is derived from the decrease in peritesticular temperatures (2). However, intuitively, scrotal cooling should improve spermatogenesis by providing a temperature that is optimal for this process (2°C below body temperature), particularly in lifestyle and work conditions that can pathologically elevate scrotal temperatures. For this concept to be implemented clinically, both an effective apparatus to cool the scrotum as well as patient adherence and compliance to the use of such an apparatus is essential, particularly when you consider that it takes roughly 2.5 months for sperm to mature from spermatogonia. In this month’s issue of *F&S Reports*, Benidir et al. (3) provide clinical insight into the use of two scrotal devices: Snowballs (Richmond, VA, USA) and Underdog (Ontario, Canada). Both devices offer portable and wearable scrotal cooling pads that are mostly meant to be used in a sitting position. Their main outcome in this study is a key factor when considering

any therapy in men, namely compliance. Commendably, they were able to enroll 40 patients into their study, followed for 3 months. Using follow-up data from 26 of the 40 patients, they found that only 7 out of these 26 patients used the scrotal cooling devices daily. The most common complaints about the devices were that they were uncomfortable and did not maintain cooling temperatures for long. These findings point to the fact that even if it were to be definitively shown that scrotal cooling assists in improving semen parameters, it would be unlikely for most patients to wear them consistently enough to impact significant changes. Ultimately, this may portend poorly to the adherence of long-lasting changes in daily habits in men among couples facing infertility. Although in this study men needed to wear a device, the device was essentially pain-free and posed no risk. However, maybe this is a case wherein patients are not completely convinced that this therapy is effective enough to warrant the inconvenience of wearing these scrotal cooling devices. This is where more definitive studies on this subject would be helpful: not only to show whether scrotal cooling is effective in imparting positive changes in semen parameters but also in the development of less burdensome scrotal cooling devices and potentially measures such as phone applications that can help provide user feedback regarding scrotal temperatures and reminders to improve adherence. In addition, the quality of counseling before the prescription of these devices is important because most men may need more direct motivation when facing a lifestyle change. The motivator here being, unlike diabetes or hypertension, that there is no pharmaceutical that can consistently help in the setting of true idiopathic male infertility and lifestyle modification, as in wearing uncomfortable underwear may be the only option.

Raul I. Clavijo, M.D.

Department of Urology, University of California, Davis,
Sacramento, California

<https://doi.org/10.1016/j.xfre.2021.07.005>

You can discuss this article with its authors and other readers at
<https://www.fertstertdialog.com/posts/xfre-d-21-00126>

REFERENCES

1. Sharma R, Biedenharn KR, Fedor JM, Agarwal A. Lifestyle factors and reproductive health: taking control of your fertility. *Reprod Biol Endocrinol* 2013; 11:66.
2. Jung A, Schuppe HC. Influence of genital heat stress on semen quality in humans. *Andrologia* 2007;39:203–15.
3. Benidir T, Remondini T, Lau S, Jarvi K. Evaluation of patient compliance with the use of scrotal cooling devices. *F S Rep.* 2021;2:289–95.