

## Empiric and lifestyle therapies for male infertility—should we recommend them?



Despite significant advances in reproductive medicine, a substantial portion of men are diagnosed with idiopathic male infertility—abnormal semen parameters with no identifiable cause. We have a good understanding of many of the requirements needed for spermatogenesis, such as a functioning hypothalamic pituitary axis. We also have data indicating that an excess of certain compounds, such as reactive oxygen species, may be detrimental to fertility. For over 50 years, clinicians have used this knowledge as a basis for empiric therapy of the infertile male. The concept is quite simple: if a little of something is good for fertility, more of it must be better. Conversely, if something is bad for fertility, less of it may improve fertility. This simple paradigm has been applied to empiric hormonal medical therapy, the use of antioxidants and vitamins, and recommendations for change lifestyle patterns such as avoiding heat, cell phones, or laptop computers.

It must be admitted that just because we do not fully understand the underlying the etiology of idiopathic infertility does not mean that these “empiric” treatments never work. All of them have some data suggesting they are successful in some men. Just how convincing these data are and what constitutes success (changes in semen parameters or live births) remains quite controversial. This lays the groundwork for this month’s Fertile Battle. We have chosen three categories of empiric therapies used to improve male fertility: empiric medications, nutraceuticals and vitamins, and lifestyle changes such as avoiding tight underwear, heat, and cell phones or laptop computers. Each team has experts to present their summary of the rationale for the therapy and what they feel the data tell us.

Questions about these topics are commonly brought up by couples who often have obtained their information from the Internet or friends. Many infertile couples are under substantial psychological stress. Men may experience erectile dysfunction when their sexual performance is dictated by the clock and calendar and is no longer related to romantic interactions. The appeal of empiric therapies is that, at least

superficially, they sound sensible. Because follicle-stimulating hormone (FSH) is needed for spermatogenesis, more FSH can only help. Because the testes are cooler than the core body temperature, tight underwear or a laptop computer use may raise the scrotal temperature and potentially contribute to infertility. Electromagnetic radiation cannot be good for spermatogenesis—look at the rodent data!—so cell phones should not be kept in trouser pockets. Because reactive oxygen species levels are higher in infertile men than fertile men, oral antioxidant therapy should improve fertility. These are all recommendations that infertile couples are being given by clinicians, friends, and the Internet. Unsurprisingly, there are no definitive data to answer these questions.

The Centers for Disease Control and Prevention and the American Society for Reproductive Medicine endorse avoiding obesity, not smoking, and limiting alcohol and illicit drug use. Although all of these may affect fertility, they also have other systemic health benefits to justify their recommendation. This is not necessarily the case with other lifestyle recommendations. A common reason for justifying empiric therapies is that they will do no harm—but that is not always true. Proceeding through the infertility evaluation and management process is stressful for couples, and offering them therapies that do not work can result in disappointment and delay their success. Asking men to change their lifestyle habits can add even more stress to an already taxing situation. Although there is no doubt that certain lifestyle factors are detrimental to health, it is important to be selective in recommending changes. Hopefully this Fertile Battle will result in a better understanding of the pro and con arguments for these suggested therapies and allow us to better counsel patients.

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