

Do Ice Baths Improve Sperm Health & Fertility? | Dr. Andrew Huberman

So any discussion about heat and sperm and how heat is detrimental to sperm has to raise this issue of whether or not cold is good for the testicle. Ok. Well, now there's a lot of data starting to come out about the positive effects, the positive biological effects of deliberate cold exposure on different aspects of brain biology such as the release of dopamine and norepinephrine and on the biology of the body to some extent metabolism. But more so the impact on brown fat stores which are good for us, so-called brown fat thermogenesis. There's a lot related to deliberate cold exposure and we've done entire episodes on deliberate cold exposure. Again, you can find that at Huberman lab dot com, we did a guest episode with an expert on the use of cold for health and performance with my colleague Craig Heller from Stanford Department of Biology. We also have a tool kit on how to apply deliberate cold exposure for health for both females and for males for sports performance, cognitive performance, mood, sleep, et cetera. You can find all that again, Huberman lab dot com. Totally zero cost. Just go into the menu, go to newsletter and scroll down and you'll find those. When thinking about sperm quality, we want to remember that excessive heat is bad. Now does that mean that deliberate cold is good? Well, it turns out that one of the major causes of lowered sperm count and overall reduced sperm quality. That's quite common is the presence of what's called a varicel, a varicel is kind of like varicose veins of the veins that innervate the testicle. And what it essentially does is it means that blood will pool in the testicular region. It can't circulate back to the body quickly enough and therefore the temperature of that environment increases. There's some other things that varicel cells do which can be obstructive at the physical level. So they're not just temperature related. It's pretty clear that using deliberate cold exposure can be healthy for the sperm because of the ways not that cold directly supports testosterone or sperm quality but rather because cold reduces heat. Ok. So you will find um available online. Um, I think they're actually called um, Forgive Me but that's what they're called. I didn't name them, called snowballs. These are um, uh, they're sort of like gel pack, uh, cold briefs that uh, you can buy and men will wear for some period of time. I don't think you wear them all day. You wear them for some period of time. A lot of people are now using cold showers and ice baths and circulating cold baths or going into a cold ocean.

or lake for any number of different reasons I talked about earlier I myself start every day with either a 1 to 3 minute cold shower or 1 to 3 minute um immersion up to my neck in a cold bath you know cold um water circulating water or a cold shower I do that mainly for the psychological effects related to the long lasting increases in dopamine and epinephrine But there are other data starting to come out showing that that that sort of approach or similar approaches can increase testosterone levels and maybe even sperm counts can reduce cortisol late in the evening if the cold exposure is done early in the day so on and so forth So a lot of interesting data coming out in really good journals that are peer reviewed and so on in humans I should mention those studies are done in humans to support the use of deliberate cold exposure But again if you're going to use deliberate cold exposure to improve sperm quality can it work Yes indeed it can work either indirectly by increasing testosterone or directly by improving sperm quality But both of those effects are likely to be indirect by virtue of reducing the temperature of the testicle overall Not because there's any sort of magic effect of cold on the testicle Now I have to imagine that a number of you in particular females listening to this are going to say is deliberate cold exposure And for that matter is deliberate heat exposure like sauna hot tub good or bad for the ovary for eggs and for fertility Now there there are fewer data to look to unfortunately But what we do know is that deliberate cold exposure done in the way that I just described 1 to 3 minutes a day Ideally early in the day through cold shower immersion up to the neck doesn't have to be an ice bath Could be cold circulating uh water or even non circulating cold water And people say well how cold I should have mentioned that before How cold there is no way I can tell you exactly how cold the water should be because for some people 60 °F will be exceedingly cold for other people 40 degrees is going to be more appropriate How cold should you make it If you're going to embrace these practices You want to according to the literature what you want to do is make it uncomfortably cold such that you really want to get out but safe right You don't want to go into 30 degree water Um immediately you can actually have a heart attack and die if you do that So you want to progress gradually into the cold So you don't want to shock your system too much Although it is the adrenaline evoked by that that quickening or shortening or elimination of the breath for a short period of time when you get into uh uncomfortably cold water that correlates with or is actually the reflection of would be more accurate to say the release of adrenaline and then dopamine and so forth which has been very well documented so

uncomfortably cold but safe to stay in And I cannot tell you an exact number that is uncomfortably cold but safe for you It's going to differ person by person You want to figure that out just like I can't tell you how much weight that you should squat in order to achieve some effective uh resistance training for the legs It's going to differ depending on um your strength and your prior experience and so forth So ease into it be safe But it does appear that both for men for reasons I talked about a few minutes ago and for women that deliberate cold exposure can be beneficial for fertility and for hormone production But in particular for females in terms of regulating cortisol and for hormone production Now you might say ok getting into cold is stressful How can that be helpful for regulating stress Well it turns out when you get into the cold you get a big surge in adrenaline and then dopamine which is very long lasting provided that's done in the early part of the day So I would say you know not too close to sleep Then what you do is you restrict your maximum cortisol released to a period earlier in the day that buffers reduces That is the likelihood that you would have excessive amounts of cortisol later in the day which not only can disrupt sleep but is correlated with a number of other um hormonal effects that are not good for us and therefore not good for fertility So here what I'm describing are positive yet indirect effects of a cold on hormone levels both in males and in females So for men we talked about increased testosterone improved sperm quality That was indirect right You're reducing the temperature of the testicle but it's not that cold itself is positively impacting those things Does that make sense Heat is bad Therefore reducing temperature is good Likewise with females deliberate cold exposure can be good for the overall fertility process Not because cold is good for the ovary or being cold is good for the ovary or for luteinizing hormone or for follicle stimulating hormone or anything else like that But rather that using deliberate cold exposure as a way to restrict stress in a deliberate way to a particular time of day increases the release of cortisol then and indirectly reduces the amount of cortisol that's released at other times along the 24 hour cycle Ok So these are positive yet indirect effects So if you're a woman who really um is interested in exploring deliberate cold exposure or who enjoy or is already doing it and you're wishing to conceive great explore it do it safely of course but explore it and continue to do it However if you're somebody who just hates the cold and doesn't want to go anywhere near it there's no reason to think that you absolutely need it provided that your stress your sleep and other factors are all being carried out properly