

How Bad Is Tap Water for Health? | Dr. Andrew Huberman

Let's talk about tap water And here I have to take a deep breath not a deep gulp but a deep breath Because in researching tap water and what's contained in tap water in different regions not just in the US but around the world I confess the picture is a pretty scary one I want to be clear I'm not somebody who naturally orients towards fear or conspiracy theories However in researching tap water for this episode by way of looking at the peer reviewed research meta analysis reviews specific research articles where specific hypotheses were tested and in talking with experts in toxicology and so on It's a pretty grim picture frankly when one looks at what's contained in most tap water and whether or not the compounds that are contained in tap water are present in sufficient concentrations to negatively impact our health And the bad news is that much if not all tap water believe it or not much if not all tap water contains things that are bad for the biology of ourselves There is a silver lining however and the silver lining is that very simple steps that are very inexpensive can be used to adjust that tap water to make it not just safe to drink but that makes it perfectly fine to drink So that's the good news And we'll get to that in a moment if you are somebody who is interested in whether or not tap water contains things like endocrine disruptors hormone disruptors that can negatively impact reproductive health in males or females or both It's a wonderful review Wonderful because it's so thorough Although the news isn't great it's very thorough which is great which is entitled Endocrine Disruptors in water and their effects on the reproductive system This is a review from 2020 that analyzes water from a bunch of different sources within the world and essentially focuses on a few key components First of all it focuses on the concentration of minerals that is magnesium and calcium within water Many people don't realize this but so called hard water sounds terrible right But hard water is water that contains magnesium and calcium which turns out to be a good thing Some water contains more magnesium and calcium Other water contains less They looked at the presence of magnesium and calcium because that is going to impact the ph of water in general The higher concentrations of magnesium and calcium and water the higher the ph that is the more alkaline that water is and the lower levels of magnesium and calcium the more acidic or lower ph that water tends to be the other thing that this review addresses is the

concentration of so called DB PS dog bulldog porcupines DB PS which are disinfection by-product contained in water So obviously local governments the government wants your drinking water to be clean They don't want contaminants in it They don't want sewage in that water They don't want chemical contaminants that are going to make people immediately sick So they treat water water treatment plants treat water with disinfection products and those disinfection products create things called disinfection by-product and the presence of those DB PS are just disinfectant can strongly impact the ph of water by way of changing the concentrations of magnesium and calcium put differently I do believe that governments are trying to provide people with clean water But in doing so oftentimes we introduce things to that water that are not good for us Now it's very clear that DB PS can cause endocrine disruption in ways that are not good for reproductive health I did a very long in fact 4.5 hour episode on fertility and vitality that was male and female fertility by the way and vitality Um that again you can find at Huberman lab dot com that talks about all the biological processes involved in the generation of healthy eggs and sperm and and um creating a healthy embryos implantation embryos and so forth It's very clear that DB PS have been shown to disrupt ovarian function spermatogenesis and fertility outcomes even at concentrations of DB PS that are present in drinking water that comes from the tap Now does that mean that you shouldn't drink tap water Well the answer to that is a it depends what does it depend on Well it depends on several things First of all I highly recommend to everybody go online and put in your zip code and ask for a water analysis of water that comes out of the tap in that zip code This is something that is readily available online at least to my knowledge And unfortunately there's no specific one site that I can send everyone to to get an in depth analysis of the drinking water that comes out of your tap However I highly recommend that you go online and put in your zip code or municipal area code and figure out whether or not your water contains X amount of DB PS or Y amount of DB PS Now of course you're gonna get a bunch of values back and unless you're a toxicologist probably not gonna know what those values mean But what you're really looking for is whether or not there are high low or moderate levels of fluoride in that drinking water Why do I say that Well there are studies that show that the concentration of fluoride in drinking water is of particular concern for the thyroid hormone system of the body Now thyroid hormone has a lot of different roles in brain and body and thyroid hormone is very important for everything from metabolism to levels of energy When

thyroid levels are disrupted or thyroid receptors are disrupted It can lead to depression When thyroid hormones are optimized it can lead to optimal mood if there is such a thing But in other words it helps keep your mood elevated It relates to everything from sleep to reproduction Thyroid hormone is involved in many many things including bone health and tissue health generally So essentially every biological process in your body is impacted by thyroid hormone And there is a study that I'd like to highlight which was published in 2018 And the title of the study is impact of drinking water fluoride on human thyroid hormones This was a case control study So this is not an extensive analysis of many individuals However what it shows is that fluoride negatively impacts thyroid stimulating hormone and so called T three levels So you have thyroid hormone T three and T four even in the standard concentrations that are present of And here's an important number 0.5 mg per liter Ok So if you can get a hold of the fluoride concentrations in your tap water and find out whether or not the concentrations are at below or exceed 0.5 mg per liter what you will find is that even just 0.5 mg per liter of water can disrupt thyroid function And this is going to be a particular concern for people to have familial so genetically related thyroid issues or that are concerned with keeping your thyroid hormone levels healthy which I think is everybody So I am telling you that you should try and get a hold of some data about the water that comes out of your tap if you intend on drinking tap water And probably even if you don't just know what's in your drinking water your local government should provide that information and or it should be readily available online And in particular I think it's worthwhile to address how much fluoride is present in your drinking water Again I don't want to create a lot of scare I'm not trying to trigger fear here I do think However by way of reading this review by way of reading the paper that I just referred to a moment ago again links to these are going to be provided in the show note captions that there is extensive evidence that elevated levels of fluoride in drinking water are simply not good for us Now that could open a whole discussion of why fluoride is in our drinking water in the first place at all But leaving that aside it seems to me that most everybody should know how much fluoride is in their drinking water And ideally everybody yes everybody is filtering their drinking water Now that raises the question of how best to filter drinking water And that brings an answer of it Depends on a couple of things First of all how healthy or unhealthy do you know yourself to be Ok So if you're somebody who has no health issues you have plenty of vigor You're sleeping well at night you have uh no autoimmune disease

You're not aware of any uh health concern minor or major Well then perhaps you're somebody that doesn't wanna filter your water I would argue that why wouldn't you employ some very low or even zero cost approach to filtering your water There are going to be other individuals who are suffering particular ailments of brain or body or both that absolutely should be filtering their drinking water if they're getting their drinking the water from their tap because it is pretty well established now that tap water contains a lot of these disinfectant by products as well as in most cases exceeding the threshold of fluoride that we know to be healthy for us How should you filter your tap water Well you have everything ranging from the so called Brita type filters So these are gonna be carbon type filters or other filters that um you essentially put over a container or a compartment where we can pour the water over it and goes into the compartment below Will those work Are they sufficient to filter out the disinfectant byproduct's provided you change the filters often enough However it is not thought unfortunately not thought that they filter out sufficient fluoride So what I highly recommend is depending on your budget that you go online and you search for at home water filters that can filter out fluoride There are a number of straightforward and inexpensive tools to do that And here I don't have any relationship to any of the water filters or things that I'm gonna mention Now I wanna be very clear about that There's no uh brand code or affiliation here Um I'm simply trying to direct you to resources that will allow you to filter your tap water for it to be more safe for you to consume in a way that meets your budget with the understanding that people have very different disposable incomes So the range of costs here is going to be pretty tremendous I just want to get that out of the way first You know there are water filters that you can use repeatedly So these are what I'll refer to as pitcher filters that are less than \$100 Now keep in mind that that's a one time purchase except for the uh replacement of the filters which fortunately doesn't have to be done too often So there are different filters I'll provide a link to one that I found that is at least by my read of the lowest possible cost So this is the so called clearly filtered water pitcher with affinity filtration So this is a filter that can adequately remove fluoride lead BPAs glyphosate hormones and some of the other harmful things that are contained in most tap water Again I do realize that for some people even an \$80 cost is going to be prohibitive But do you realize that what you're doing here is you're purchasing a unit that can be used repeatedly over and over Um The reason why it's lower cost than some of the different filtration approaches that I'll talk about in a moment are that you

can't really put all the drinking water that you would use say for an entire week or for an entire month Um In one pitcher you're going to have to uh repeatedly pour water um into uh the pitcher in order to filter it Now as I mentioned before the range on water filter costs for filters that can adequately remove fluoride and all the other things that you want out of your tap water is immense In fact you can find um you know whole house water filters that are you know \$2000 or more Again these are gonna be filters that are gonna be in your garage or in a in a laundry room that are going to basically pull from the the uh piping system of your house and deliver um purified water I technically it's not purified but that's removing these contaminants and fluoride from all the sinks in your house So you could effectively drink from any or all sinks in your house That's what explains the higher cost I think most people are probably not going to have the disposable income or have the opportunity to um include one of these whole house filters Although if you uh do have the means and it's important to you you could do that and then there are going to be what I would call intermediate systems So systems that cost somewhere between 205 \$100 probably one of the more um common ones or uh popular ones is a so-called Berkey filter system These are filter systems that again remove the things that you want removed from your tap water and they can do it at higher volumes and they're typically countertop units Um They don't require any plug-in typically or they only require brief plug in and electricity and they're going to filter out many many liters or tens of liters of water so that you can always have access to that um clean filtered water at any time or day or night without having to pour over into the pitch So I mentioned these different uh options because again I realize that people have different levels of disposable income As far as I know there's no tablet or simple mechanism that can be purchased as a transportable uh you know pill that you can just simply throw in water and remove the contaminants If anyone is aware of one that can adequately remove fluoride and other contaminants please uh put in the in the comment section on youtube that'd be the best place Um So that I and everyone else can see it but hopefully the mention of the different filtration systems that I mentioned um we'll give you some choices that uh I would hope would fall within the range that uh one could potentially afford an important note about filtration Just as in our body There are mechanisms to signal mechanical changes and chemical changes that occur in our gut and our brain et cetera Elsewhere And in general both mechanical and chemical changes are signaled across the body to invoke different changes Whether or

not those are you know a response of the immune system or to make us more alert or more asleep et cetera So too filtration capitalizes on mechanical and chemical filtration What I mean by that is when you run a fluid water or any other fluid through a filter those filters are doing two things They are physically constraining which molecules can go through by creating portals pores that allow certain size molecules to go through and not others And almost always they contain certain chemicals themselves right Those filters have been treated with certain chemicals that neutralize certain other chemicals Ok So you may be wondering how when you filter water you know magnesium and calcium could get through but fluoride doesn't And that's because these filters have been very cleverly designed in order to neutralize fluoride or to prevent large molecules such as sediment and dirt which is kind of easy to imagine being filtered but also to allow certain small molecules like calcium which is smallish or magnesium which is smallish to still pass through into our drinking water And this is wonderful because what it means is that by filtering our water using any of the methods that we talked about before you're still going to get whatever magnesium and calcium was present in that water while still adequately removing the fluoride and other disinfectant by-product Now what if you can't afford any of those options Ok Well here you have an interesting zero cost option It's not as good as the other ones of filtering that water but it is an option And I do think it's important to give options to people who don't have any disposable income for the purpose of filtering their water which is to draw a gallon or five gallons or maybe even more tap water out of the tap and put it into some some container some vessel So it could be one gallon five gallon 10 gallon container and then to let that tap water sit for some period of time to allow some of the sediment to drop to the bottom Now you might say well there's no sediment there's nothing contained in that uh tap water and it isn't fluoride diluted in the water And indeed the answer to that is yes However there is some evidence that letting tap water sit out at room temperature and outside the pipes that deliver that water can help remove some not all of the contaminants in that water If however you are filtering the water using any of the methods that I talked about a few moments ago you do not need to do this Ok I realize there's a whole world out there of people who insist on putting their water in the sun or only keeping it in certain containers and putting it out for a few days before they ingest it That to me seems a bit extreme if you want to do that be my guest but I don't think most people need to do that However I do believe that for people who have zero

disposable income to devote to paying for any kind of filtration system for their tap water that taking that tap water and putting into some container at room temperature and keeping at room temperature for a half day or a day or more and then pouring off the top two thirds of that water into another container and consuming the water from that second container is going to remove some not all of the contaminants that one would need to be concerned about And here I should mention something that I neglected to mention a few moments ago if you're going to do this um zero cost option and and let the water sit out for a bit you would want that water to sit uncapped Sorry I should have mentioned that before Uncapped Of course trying to keep things from falling into that water In fact you could even put a um a little bit of cloth above it So you don't want things falling into that water but you want certain things to be able to evaporate off and you also want some of the sediment to drop down And the reason why this process of letting water sit out would work at all is because many of the contaminants contained within water are not present because of the source of that water or even the treatment of that water But rather because of the pipes of that water arrives to your glass or you the pot that you have from OK And here again there is an infinite number of variables So some people are living in buildings for which the pipes are very very old but very very clean believe it or not some people are living in newer buildings and structures that have new pipes but for which the seals between those pipes contain things that are not good for you to consume So by letting water sit out for a while you were able to remove some of the contaminants present within the pipes of your home and the building and even the pipes that lead to your home or apartment Now some people get really obsessed with this whole tap water thing and really want to find out all the details about the pipes and what sorts of you know hard metals and how much magnesium and how much calcium are present in their water There are ways that you can test your drinking water for those sorts of things Most people I realize including myself are simply not going to do that Um If you want to know what I do I tend to drink water that is filtered through one of these lower cost filters Or if I'm going to be consuming a lot of fluid I will drink um certain kinds of fluid that later I'll tell you Um I've been doing an experiment for the sake of this episode looking at so-called molecular hydrogen water which sounds very fancy and esoteric and almost um a little wacky But it turns out um it has largely to do with the amount of magnesium and calcium in the ph of that water So if you are somebody who has a very low budget or simply just wants to spend a

very small amount of money and try and still drink tap water there is absolutely a way to do that safely but it does require a few of these steps