

What is GLP-1 & How Does It Reduce Appetite & Promote Weight Loss? | Dr. Andrew Huberman

I wanna highlight some recent findings in an area totally separate from mental health that I think are really important for everyone to know about. This is a paper published in the journal *Cell* which is a cell press journal, an excellent journal in fact, one of the three apex journals. So for those of you that are curious, papers published in the journal *Nature*, *Science*, and *Cell* are considered the sort of Super Bowl, Stanley Cup, and NBA Championships of publishing. And this paper, entitled "An inter-organ neural circuit for appetite suppression," illustrates a very important principle that I think everyone should know about. And that's the principle of so-called parallel pathways. Parallel pathways, as the name suggests, are pathways that could be neural pathways or hormonal pathways or otherwise that operate independently of one another to accomplish a common goal. And what this paper really shows is that there's a set of peptides in the body, and the peptide that I'm referring to today is called GLP-1, glucagon-like peptide-1, and some related peptides. I've talked about these on the podcast before for two reasons. First of all, I'm a big proponent and consumer of yerba mate. Yerba mate is a tea that can promote the release of glucagon-like peptide-1. And there are also new prescription drugs that are now hitting the market, and for which there are really impressive clinical trials for diabetes and obesity that are essentially glucagon-like peptide-1 stimulators. So they stimulate the release of that or they are in fact a synthetic version of glucagon-like peptide-1. What is glucagon-like peptide-1? It is a peptide which is a small little protein that can dramatically suppress appetite. So that's why these drugs are being explored and are showing quite impressive results for things like treatment of type two diabetes and other forms of diabetes as well as obesity. So they lead to weight loss. Now, in terms of the yerba mate stimulation of glucagon-like peptide-1, that's gonna be a much lower amount of glucagon-like peptide-1 that's released from drinking yerba mate as opposed to say taking a drug that stimulates GLP-1 or taking a drug that is GLP-1. Nonetheless, I should also point out that yerba mate comes in a bunch of different forms. There is some concern about certain smoky flavored forms of yerba mate being carcinogenic. So that's why I avoid those forms of yerba mate. But for me, yerba mate is one of the preferred sources of caffeine. For me, I like the way it tastes. It does provide that sort of caffeine kick that I like to have early

in the day for focus and for work and for exercise And yet I actively avoid the smoked varieties of Yoruba mate because of the potential carcinogenic effects of the smoked varieties Glucagon like peptide one as I mentioned earlier can suppress appetite But what this paper shows is it does that by at least two mechanisms through parallel pathways What this paper shows is that glucagon like peptide one acts on receptors in the body in a portion of the nervous system called the enteric nervous system Enteric enteric nervous system This is a component of your nervous system that you don't really have control over It's autonomic or automatic GIP One binds to what are called intestinal fugal enteric neurons You don't need to know the name but those neurons do two things First of all they cause some gut distention So they actually make you feel full This is incredible right A peptide not actual physical food but a peptide that stimulates neurons that cause changes in the so called mecano receptors of the gut of the enteric nervous system and make people feel full So it can lead to actually mild or I suppose if levels of GIP one are very high to major gut distention Ok I think that the levels of GIP one that would come from drinking ya mate and hopefully from appropriate dosaging of the synthetic forms of GIP one or drugs that stimulate GIP one would cause mild not major gut distention because major gut distention would be uncomfortable So GIP one is acting at the level of gut to increase gut distention And by way of a pathway that goes from the gut up to the hypothalamus This little cluster of neurons about the size of a marble that sits above the roof of your mouth is also suppressing appetite through brain mechanisms So this is really beautiful right You have a peptide a small little protein that's released in the gut And that release within the gut causes gut distention which makes you feel full And by way of neural stimulation of the hypothalamus also activates neural pathways within the brain that trigger satiety the feeling of having had enough food So to me GIP one is both impressive and important Why Because this recent category of drugs that's now hitting the market seems to adjust obesity or can help people with weight loss in order to help their health And it's doing so by at least two mechanisms one is within the brain and the other is within the gut and communication through the so called gut brain axis Because again these inter neurons are communicating to the brain the hypothalamus by way of this what's called the sympathy gastro spinal reticular hypothalamic pathway you absolutely do not need to know all of that That's a mouthful that's enough to make your mouth feel distended But at the same time things like Yorba Ma and I'm sure there are other compounds out there as well But

certainly Yoruba mate can stimulate the release of G LP one So for those of you that are looking for some mild appetite suppression and want to accomplish that while also ingesting caffeine Yoruba mate might be a good option for that And just know that it's operating through two mechanisms on the body through mild gut distention to make you feel full and on the brain to increase satiety or make you feel less hungry And then for everybody not just those that are interested in appetite suppression I think it's important to understand that these parallel pathways are fundamental to how we are organized Another good example of this would be when we are excited by something positive or negative So it could be stressful or we're positively aroused There is a parallel activation of epinephrine adrenaline both from your adrenals and from an area in the brain called the locus ceruleus So again and again we see this in biology and in neuroscience that your brain and your body are acting in concert they're acting together through mechanisms that either are independent so separately in the brain and separately in the body but directed towards a common goal or through communication between brain and body And almost always that communication is going to be bidirectional body to brain and brain to body So I think these results are really interesting and really important for the sake of weight loss for sake of appetite suppression And just generally for the way that they illustrate this very important theme of the way that we are constructed at a biological level which is parallel pathways