Understand Cancer & Reduce Cancer Risk | Dr. Peter Attia & Dr. Andrew Huberman

What about cancer Again Nobody wants cancer Uh We've all known people have died of cancer um or have had cancer What can be done to reduce one's risk of cancer Well you asked earlier about the numbers Let's throw some numbers out there right So globally we're talking about 1112 million deaths per year about half the number of uh A S CV D still a staggering number Um at the individual level put it this way somewhere between one and three and one in four chance Anyone listening to this or watching this is gonna get cancer in their lifetime But what's the probability they will die from that About a one in six chance of dying Ok So is it true that every male gets prostate cancer Most in other words every man will die with prostate cancer and some will die from it You you and I have prostate cancer right now Thank you for informing Yes Uh hopefully we will not die of it We should not die of it Prostate cancer Colon cancer are cancers that no one should ever die from because they're so easy to screen for They are so easy To treat when they are in their infancy Um that it's totally unacceptable that people are dying from this other cancers for which I can't really say that breast cancer much more complicated pancreatic cancer much more complicated glioblastoma multiform a much more complicated So there you know as you said a second ago cancer is not a disease It is a category of diseases Each it's not just that each organ is different and breast differs from pancreatic It's that within breast cancer er pr positive her two new positive is a totally different disease from the triple negative breast cancers those with BRCA mutations or non BRCA mutations Even putting that aside just looking at the the hormone profile of the individual breast cancers they're totally different diseases So it's not just that breast cancer is different from prostate cancer It's that all breast cancers are quite different Maybe I should frame the question a little differently than given the vast number of different types of cancers and categories Your question is still a fair one I just wanted to throw that caveat out there So now to your question OK So what do we know It turns out that we can very comfortably speak to um several things One is the role that genes play So um maybe I'll just spend one second on a a gene 101 thing for for the for the viewer we want to differentiate between what are called germline mutations and somatic mutations So um your germline and my germline are set when we were born our germline

mutations uh any mutations we have in germline genes are inherited from our parents It so non negotiable non negotiable You you you got those things So question one is how much of cancer results from those types of genetic mutations And the answer is very little less than 5% So very Now you mentioned one a moment ago BRCA OK So so mutations in BRCA are germline mutations A woman will get a BRCA mutation from one of her parents And we will often have a sense of that just from the family history You know when mom and sister and aunt and grandmother had breast cancer you've got a breast cancer gene Now it might be BRCA it might be another gene that's not BRCA but there's no ambiguity and we test for these genes mostly just for insurance purposes frankly But there's no ambiguity that that was a germline transmission of a gene that is driving cancer But 95 plus percent of cancers are not arising from germline mutations They are arising from somatic mutations or acquired mutations So the question then becomes what is driving somatic mutation and the two clearest indications of drivers of somatic mutation are smoking and obesity smoking We've talked about let's put that aside for a moment I'm so surprised about obesity I don't know why I'm surprised but I've um never heard this I'm probably just naive to the literature Yeah So obesity is now the second most prevalent environmental driver of cancer Now I will argue and I think I argue this in the book hopefully pretty convincingly I don't think it's obesity per se I think obesity is just a masquerading proxy What is obesity Obesity simply is defined by body mass index Well first of all uh I don't think I'm obese but I'm I'm way overweight on BM I you probably are too So you know let's just I'm clinically diagnosable as obese Are you Oh no Well not clinically BM I over 30 I don't think I'm probably there No but if I if I measure my weight by height um my BM I is probably 27 or 28 Ok It's been a little while since I've checked I I can I only know body fat percentages and things like that So so so basically like BM I is a far from perfect proxy but at the population level it's what we use Um I wish we would get off it by the way I think it's really crap because it doesn't take into account lean versus no we could I think we could get better data if we looked at waist to height ratio That's a way better metric So this is just a quick test for everybody It's I don't I I'm gonna argue your BM I is less relevant to me than your eye color But if your waist circumference is more than 50% of your height you should be concerned Ok Well then I'm ok Yeah you're fired by that Patrick right But that's important So if you're 6 ft tall your waist better be under 36 inches And if it's over I would argue that's the definition of obesity not your BM I being over 30 So

um back to this issue because we're using such a crude measurement it basically is catching a whole bunch of stuff But the question is what's driving it And I think if you really look at the physiology of cancer I don't think it's obesity I think it's two things that come with obesity insulin resistance which is you know two thirds to three quarters of obese individuals are insulin resistant an inflammation And I think those two things with the inflammation and the immune dysfunction with the insulin resistance and the hyper basically tonic growth stimulus that's coming that's what's driving cancer So again is it because a person is storing extra fat you know and their love handles that that's driving the risk of cancer No that that's those are just two things that are coming along for the ride So beyond those two things and A along with C we there are also certain environmental toxins We absolutely know we're doing this right So we understand that people who you know have exposure to asbestos have a much higher risk of certain types of lung cancers and things like that But for the most part um those are our big risks beyond that We talk about alcohol in certain cases Absolutely Um alcohol is a carcinogen Um it's the dose part still isn't clear to me I don't know is one drink a day moving the needle much on cancer risk per se It's not clear and it might depend on those uh genetic predispositions So so yeah if step one is don't get cancer you have no control over your genes you have control over smoking you have control over insulin sensitivity I wish I could sit here and tell you that there is a proven anticancer diet or that if you do X amount of exercise per weak you're gonna not get cancer We just don't have a fraction of the control over cancer that we have with cardiovascular disease We we don't understand the disease well enough So we don't understand kind of the initiation process and the propagation process Um And we you know we we have to rely much more on screening Are there good whole body screens for cancer Uh In other words can I walk into a tube and um or a cylinder rather and get screened for the presence of tumors any and everywhere in the body outside the brain because the brain is a little harder to to get to right Believe it or not the brain is actually pretty easy to screen for So is so fatty and floating in water and also the head when you put the head into an MRI scanner there's no movement Uh it's the least motion artifact is in the brain So when you use something called diffusion weighted imaging with background subtraction in an M Ria technology that was actually pioneered in the brain for stroke identification Um It's also really good at looking for tumors as well Um So let me make the argument for why screening matters because this is again kind of an area where I go far down a rabbit hole in a

way that I think traditional medicine would argue against So my argument for screening is an argument at the individual level and it goes as follows to my knowledge there is not a single example of a cancer that is more effectively treated when the burden of cancer cells in the body is higher than when it is lower Uh So the two examples I think I talk about in the book are colon cancer and breast cancer So when you take an individual with stage four colon cancer that means that the cancer has left the colon and is now outside of the colon So it's usually in the liver at a minimum potentially in the lungs or in the brain That person's five year survival is very low Their 10 year survival is zero We will treat them with a very aggressive regimen of multiple drugs And again you'll get a five year survival of you know maybe 10 to 20% And by 10 years nobody's alive if you take a person with stage three colon cancer so the colon cancer is big and it's even in the lymph nodes around the colon but at least grossly you can't see colon cancer cell you can't see those cells in the liver microscopically Of course we know they're there because if you don't treat those patients they still die of colon cancer But you whack them with the same chemo regimen that you were gonna give the metastatic patients 80% of those people are alive in five years So night and day difference in survival What's the difference in the person with metastatic cancer You're treating a person with hundreds of billions of cells in the adjuvant setting which is what we we call we call it adjuvant When you treat people who have only microscopic disease you're you're treating billions of cells The same is true with breast cancer So we have the clinical trial data to put them side by side So rule number one is don't get cancer Rule number two is catch cancer as early as possible if you're going to get it which brings us to your question of how do you screen for it Um We basically screen the first line of screening is is imaging is is is is is a sort of visualization So you have cancers that occur outside the body that you can look at directly So skin cancer you can look directly at the skin uh esophageal gastric colon cancer are those are outside the body right mouth to anus embryologically is outside the body So you can put a scope in and you can look directly at the cancer But for all other cancers that are inside the body yeah you have to rely on some sort of imaging modality Um Although now we're starting to look at these things called liquid biopsy So blood tests that are looking for cell free DNA and the cell free DNA gives us a sense of based on the epigenetic signature of what you're looking at Hey is there a cancer in the body And if so what tissue is it potentially coming from based on these epigenetic signatures So the problem with relying on any one modality is a is a problem

of sensitivity and specificity optimization Now with MRI scanners which are in some ways the best way to do this because they don't have radiation So you don't want to be incurring damage as you do this The irony of doing a whole body CT scan to screen for cancer is your you know whole body ct scan would be close to you know 30 to 50 milli sieverts of radiation staggering some radiation So does that mean that people should uh sorry to pull you off this but um I was going to ask about this anyway Uh avoiding going through the whole body scanner at the airport Um noise solo solo Yeah Uh you know going through a whole body scanner at the airport or even getting a Dexa scan I mean these are trivial amounts of radiation What about flying You know you hear that pilots get more get more cancer If you're a pilot who's flying over the North Pole back and forth and back and forth you're probably getting you know 5 to 10 millisieverts a year The NRC suggests that nobody should get more than 50 millisieverts a year So uh you and I both travel a fair amount Uh but typical travel for the busy person let's say um two round trip flights of uh more than two hours per month and an international trip every three months Um probably still less than a millisievert a year Yeah Uh living at sea level one millisievert a year living at a mile elevation If you lived in Denver you're at two millisieverts a year But you have to ask standing in front of the microwave I'm just yeah Well we've got friends They they they ask and with or without testes on the counter that's an inside joke that uh unfortunately unfortunately deserves no description Um And Peter's not referring to me um but people worry about other sources of radiation So it doesn't sound like the microwave is a concern um what are the other major sources of radiation Uh I mean outside of sort of nuclear stuff where things go live near a plant or there's been a there's been a uh it's mostly it's mostly at the hands of medical professionals Right It's the CT scanner and the pet scanner are hands down the biggest source of radiation What about the X rays at the dentist when they go they scurry behind the wall under the lead They they're very low relatively speaking uh fluoroscopy is very high Um They tend to try to cover up all of you that So for example if you if they were doing a fluoroscopic study of your kidney because you had a stone or if you were getting an injection into you know if they were doing a a fluoroscopic guided injection of one of your discs in your neck that would be a locally pretty high dose but they're gonna cover the hell out of you elsewhere Um And again if if if you if you get one of these things it's not the end of the world But boy I wouldn't want to be getting one a month and and back to the point about screening you know a

chest abdomen pelvis CT scan is probably I mean look there's probably a scanner out there now that's moving fast enough that it's much lower But I'll give you an example Ok Remember how I talked about we do CT angiograms on all of our patients for coronary artery disease Um an off the shelf scanner for this is 20 mills of radiation OK So calibrate calibrate me because 40% of your annual allotment Oh wow So the medical uh practitioners really are the uh the major culprits here That's right So what what we say is and I think most doctors are now realizing this is no no it behooves you to pay a little bit more to go to a really good place that can do that scan for two millisieverts meaning they have a much faster CT scanner much better software and they're better engineers So they have better engineering that they can do on the scanner to get that done So so I if someone listening to this here's my take do not get AC T scan or any imaging study without asking how much radiation am I seeing And if a person can't tell you how many millisieverts of radiation you're being exposed to then just say I'm gonna wait a minute until somebody can tell me that I realize and keep in mind 50 If you you know if 50 is the most you should ever be exposed to in a year uh There better be a damn good reason why I'm gonna get 25 in a day Now there are some people who have to do this if you're a cancer patient and they're scanning you as a part of your treatment I mean you know you have to pick and choose between those two those two opportunities So I don't wanna I don't also don't want to create some fear mongering Where oh my God If you hit 50 in a year your hose No it's just I wouldn't want to hit 50 a year every year for my whole life and I certainly wouldn't want to be hitting hundreds a year for any period of time And I think we're just trying to raise awareness and and also calibrate people to you know what the sources are and and so they make can make good choices not um to place them into his chronic state of fear