Introduction: Are Ultra-Processed Foods to Blame?

obesity, diabetes, and chronic diseases are rising. Is it something in the water, or the air, or something in what we eat? Many blame ultra-processed foods as the source of the problem.

Is that so? What does the evidence tell us? Dr. Bobby, what should we do? Listen, and I'll share with you what I've learned, what I do, and what you might consider.

Welcome my dear listeners to episode 53. Ultra-processed foods. How harmful and why? Well, today there are fast food opportunities awaiting us on every corner.

Could be a Big Mac, a Big Gulp, Domino's Pizza. And then when we go into the market, there are processed foods on every aisle. Hamburger helper, Froot Loops, frozen pizza, canned soup, and even protein bars are ultra processed foods.

I love some ultra-processed foods. I love donuts, I love Chick-fil-A's, biscuit breakfast sandwich, I love pretzels, I love croissants. Today, 60% of food in the American diet is ultra-processed, and we do have an epidemic of obesity and diabetes.

Did the ultra-processed foods get us here, and if so, Well, like many of our episodes, it's a mixed story, but there'll be something for everyone on this topic.

All right. Let me begin with a caveat. Clearly it's preferable to buy food at your local farmer's market or shop the market periphery for whole fruits, whole vegetables and meat and cook all those meals at home.

and use ingredients that you can pronounce and you understand. Now that approach, which is ideal, is likely to be costly and take a lot of time to prepare.

Then of course, there are the ultra-processed foods, the breakfast cereal, the bacon, the chips, the sodas.

Personal Context and Why This Topic Matters

They're often inexpensive and they're quick to prepare for a meal. The question really is, how harmful are ultra-processed foods and why? And what's the evidence I see that either frightens me or reassures me, and evidence that I don't see?

Now, as always, I'm gonna share my view of this. I'm looking at studies, I've been thinking about this topic for years, so this is really a synthesis of what I take from all the literature and all the discussions.

Clearly, if you have GI problems or chronic inflammation, talk to your doctor because what I say might not fully apply to you. If you like this podcast, if you like my podcast in general, Recommend the podcast to others.

I'm about to put together a survey to you, my listeners, about ways that my podcast might have changed your life and your approach to health. Please send me some notes, give me suggestions about what I ought to put into that survey about what changes in life you might have done.

If you're going to text me through your app on podcasting, please include your email as part of that text so I know how to get back in touch with you because otherwise I can't.

Why now? I always try to put this in perspective. Why would I be talking about ultra processed foods? Now, now I've been talking and thinking about this for a lot of years.

But when I was in medical school and Gail and I were together and she was in college, we would go because we didn't have much money to the local market, the giant brand in Baltimore, Maryland when I was at Hopkins and she was med school and she was at Hopkins undergrad.

and we would buy the market brand mac and cheese, not the craft brand, that was more expensive. We would buy the market brand for 25 cents a box, and it was cheap, it was yummy, it was quick to make, and we would eat that a lot.

Now later, when we had a little more money, we started making real macaroni and cheese. But what we found was we didn't actually like the real macaroni and cheese.

We still craved that ultra-processed chemical version. So I definitely understand the appeal of ultra-processed foods. Second, in addition to being a podcaster, I'm also the host and tractor rider and kangaroo alpaca and antelope guide at Madrone Springs Ranch, Gail and my exotic animal ranch and bed and breakfast location.

How Food Processing Evolved in America

Well, I'm also the chef, so I do enjoy cooking and I do want to prepare healthy foods for our guests. I personally don't eat a lot of ultra processed foods, but I will eat anything in moderation and that includes those kinds of foods.

Alright, let's begin our journey. Part one, how did we as Americans get to having 60% or 70% of our diet due to ultra-processed foods? Well, to answer that question, you and I need to climb in to our food time machine.

And we're gonna go back, say, 150 years. Historically, back then in the early 1800s and for thousands of years before that, food spoiled if it wasn't eaten right away.

Vegetables were seasonal and there wasn't meat available all the time. So this was a problem. You had food, you had no food, but no way to keep the food around as easily as you might for times when there was scarcity.

In the Civil War era, they invented tin cans that you could put food in and keep the food for long periods of time. But that was expensive and only the well-to-do soldiers had access to the tin can food.

Now things got better around the time of World War II and there were a lot of foods available for our soldiers. After World War II, there were concerns worldwide and in the US about not having enough food.

At the time we spent about 22% of our budget on food. That's a lot of money that we spent. But around that time, There was a revolution in food, and that was that we learned how to grow crops in new ways that made the yields much higher.

We created new fertilizers and pesticides, and there turned out to be now an explosion in the amount of grain and corn that was available in the 1950s, 1960s, 1970s with all of that grain and corn that led to a glut of cheap white flour and the production of high fructose corn syrup that's basically a sugary substance built from corn and since we had so much corn there's a lot of it around.

And all of that flour and high fructose corn syrup led to many tasty sodas and drinks and pastries and cookies. Also during the 1950s, there was a real focus on convenience.

Could we help the American homemakers make meals more quickly and easily? So there were a lot of canned soups that became sauces and frozen dinners. Some of you may remember in the 1960s there was a Stanford professor by the name of Paul Ehrlich and he wrote a book that was incredibly popular called the population bomb.

Basically we were going to outgrow the planet too many people being born and living on our planet not enough food. Well, here's the good news now nourishment which was about a third of people in the 70s globally has now fallen to about 8% and food which was 22% of our budget.

It's now about 10%. So we solved the scarcity and food cost problem with better engineering, higher yields, cheaper calories, and ultra convenient foods.

And that was built around what I just said. So we had the flour, we had inexpensive sugar, we had plentiful vegetable oil and salt. So, as I said, today's ultra processed foods make up about 60% of the American diet.

And today, those foods don't spoil as quickly. They look good. They have a pleasing texture. They're often inexpensive and really convenient.

What Counts as Ultra-Processed Food?

But they're also dense, lots of calories, easy to eat fast, and they nudge us to consume more. Like the commercial for Lay's potato chips many years ago, you can't eat just one.

Alright, so that's how we got here. So we can get out of our time machine and now go to part two. What are ultra-processed foods? Justice Potter Stewart, who was a justice on the Supreme Court in 1964, wrote about obscenity.

I will know it, he said, when I see it. Well, it's kind of the same thing for ultra-processed foods. We know that Big Mac, Doritos, a Krispy Kreme Glazed Donut Oreo Cookies are ultra-processed foods.

But what about lean cuisine or healthy choice lasagna? Would that be considered an altered processed food? How about if you make that lasagna or cookies at home with ingredients from your kitchen?

Clearly that's processed, but when does it cross the line into ultra processed and is crossing that line critically important? Okay, this is a relatively new area of study and there is no formally agreed upon definition of when a food becomes processed food, which becomes ultra processed.

There is the Nova classification system, and it's been widely discussed. It's what people tend to refer to, but it isn't a perfect definition. I will walk through it with you just to give you a flavor of how people think about this idea.

Now the Nova system came out in about 2009 and there were four different groups from one to four, four being the ultra-processed. Initially that system was built around processing, that's the definition or the name, ultra-processed.

It wasn't as focused on the ingredients, it was focused on how did you create that food and was there sort of engineering and mechanical processing in the Now, things have modified a bit, but that was where it originated.

So group one is basically food, just raw fruits and vegetables. So you might have an apple, you might have an egg, clearly there's been no processing.

That is group one. Group two is some processing. So obviously you have olives, but to create olive oil, you gotta squeeze them. Butter is churned cream, but you gotta turn it from cream to butter.

So that's group two. You might call it just a bit of processing. Group three combines some of the original group one with group two. So you might have canned vegetables, so canned beans or fruits in a tin with some syrup or tuna in a can or fresh made bread.

So these group threes process a little bit and then add to it salt and sugar often and oil. And now we get to the most worrisome one for most people, which is group four, which is the ultra-processed.

Like a potter's steward, we know things like Pepsi or Chips Ahoy cookies or Stouffer's or Marie Callender's meatloaf or other frozen dinners might fit into that category.

And what's happened in the group four NOVA classification is you've taken kind of pieces of food, raw food, and you processed it. And then you put it all back together.

And when you put it all back together, it's engineered to meet the goals of cheap, stable, and desirable.

Why Ultra-Processed Foods May Be Harmful

And they often have the unique and craving combination of fat, carbs, or sugar, and salt. And if you look on the labels of these things, you may find ingredients that don't sit in your kitchen.

You don't understand where they came from. So that's the classification. Again, it's not perfect, but it's a way to begin to think about the topic. The all-important part three, why ultra-processed foods might be harmful.

And there are three different aspects that I will walk us through. The first is, if you look at the ingredients the ingredients themselves may be harmful.

Now there's lots of fear around this. There's not a lot of compelling data, but there are four ingredient types that people focus upon. The first are what are called stabilizers.

So when you have ice cream, you want it to hold together. You don't want it to be icy. Your yogurt, you would like it to be velvety and soft and a uniform consistency.

stabilizers are added to those foods to make that happen. And there are things like guar gum or carrageenan. Now people are like, oh my gosh, these things that are added to the food, they must be bad for us.

Well, a lot of this stuff is from vegetables or fruits. So carrageenan is from seaweed. Obviously, it was extracted from the seaweed. Now, there are some stabilizers that are kind of manufactured man-made, but a lot of this stuff is stuff that originated in fruits and vegetables.

The second of these additives are what are called emulsifiers. Basically, you want to keep oil and water together. You would like a salad dressing that doesn't separate.

You'd like peanut butter where it's all uniform and there's not the oil on the top and the other stuff on the bottom, which is difficult to stir up. So emulsifiers are things like lecithin, which may sound like a big deal, but it comes from soybeans.

They're also mono and diglycerides. Now those are manufactured, but they come from hydrogenated fats. So again, some of this is natural, some of this is not.

There are concerns that maybe the emulsifiers, because they're kind of bringing the oil and the water together might have an impact on our microbiome.

Again, the data is not all that clear. And the third thing that is an additive are preservatives because we want a long shelf life. We don't want our food to get rancid or spoil.

And so you'll see things like sodium benzoate or ascorbic acid. Well, a lot of this stuff comes from berries or it comes from citrus fruits. So again, just because it's an additive doesn't mean it's necessarily dangerous.

And I talked in my bacon episode about nitrates, but nitrates are also in celery and kale. But there are things that are manufactured like BHA. And the last piece of the puzzle are various colors that are added, various flavorings that are added.

The real question is, are these additives dangerous in and of themselves? Well, they are basically referred to as something called GRAS, generally recognized as safe.

Now there aren't large randomized controlled trials that really tell us these are absolutely safe, but they're generally recognized as safe. But clearly the quantities of them might matter.

Now again, there are no thresholds scientifically derived about when you have too many of these additives in your diet or not. For me, the additive issue is probably not the biggest concern about ultra-processed foods.

They're there, and as I said earlier, yeah, go to the farmer's market, make all your stuff together yourself at home. But in and of themselves, they're probably not that dangerous.

The second issue to be potentially concerned is not what we add to the ultra-processed foods. It's what's removed from the ultra-processed foods. So when you make enriched white flour, you're taking away the fiber from the wheat.

And that slows down, fiber would normally slow down absorption. So if you remove some of the fiber, then maybe that flour and sugary substances will go into your body quickly.

That could be problematic. Also, in the processing, there's a lot of heat involved, and that destroys vitamins. But do keep in mind, when you cook at home, you're also applying heat, so it can happen there as well.

Now for some ultra processed foods, we do add back some of the removed ingredients. So we fortify wheat, we fortify milk with vitamin D. So some of this is added back, but clearly not all the fiber and all the other wonderful nutrients.

If you had a small amount of ultra-processed food in your diet, and yes, maybe it was nutrient poor, eh, might not matter so much. But when 60 or 70% of your diet is ultra-processed food, and each of those items may be removing nutrients that could be important to you, that could be a problem.

So it depends upon how much of the ultra-processed foods that you eat, and this probably gives you an inkling of where I'm going to net out on all of this.

Now we get to the third aspect of potential concern, and this is the one that I believe makes us all should be worried about ultra-processed foods. And that is ultra processed foods are calorie dense.

Every bite has a lot of calories more so than eating an apple or eating a cucumber. And they are engineered to be yummy. Of course, they want to sell more of their food.

So it is the perfect blend of carbs or sugar, fat and salt. That's why we love pizza.

What the Evidence Says About Overeating

That's why we enjoy eating chips and we want to eat more and more of them. And their texture is perfect. As I said earlier, there was that commercial for Lay's potato chips.

You can't just eat one. So theoretically, this food will make us want to eat more and more. But the important issue is there are actual scientific studies that have been reproduced and for me anyways, make it very believable.

So one of the classic original studies was by a scientist by the name of Hall, and he had some people that lived in a metabolic ward so they lived in a place in the hospital, they could measure exactly how many calories they ate.

And it was a study to look at how many calories did people choose to eat when they had regular food or when they had a diet that was full of ultra-processed foods.

So in this study, when people were on the ultra-processed food part of the study, they ate over 500 calories more per day. probably because again they were energy dense and they were engineered so you just wanted more and more and more of them and you ate faster because there probably wasn't as much chewing involved.

So that was a study that looked at people of normal weight but there's been studies of people that are overweight Again, if you give them normal food for a week, then you give them ultra-processed food for a week.

In this study, the overweight folks ate 800 calories more when they had the ultra-processed food diet. And then Dickens in 2025, had a study where, again, they crossed over between a normal diet and ultra-processed or an ultra-processed to normal diet, and they had about 300 calorie more per day during the ultra-processed phase.

So multiple studies suggesting that an ultra-processed food diet, you eat more, three to 800 calories. That means in a couple of weeks, you might have an extra pound of body weight, and you do the math over the course of a year, it could be 10 or 20 pounds more, because again, these foods, you love to eat them, and it's hard not to eat more.

Not that you can't stop eating them, but that you naturally tend to eat more. This is of the three aspects of ultra-processed foods, this is what I worry about most, because the weight leads to potentially diabetes, heart disease, cancer, cognitive decline.

Okay, part three. What do I think, and perhaps for some of you wondering, what do I actually do? Well, Whole Foods really are best. Remember our time machine.

We wanted to have foods that could last longer, they were inexpensive, and they were convenient. Now it's true, some of the ingredients aren't ideal, although I'm not personally that worried about the additives so much.

The removal of nutrients, as I talked about, that could be a problem if you're not eating much normal food. If all you're eating is ultra-processed food, you are probably missing out on important ingredients and nutrients.

Would a multivitamin help? It might, but you still would be missing other things.

Practical Takeaways and Dr. Bobbyu2019s Approach

As I said, what worries me the most is ultra processed foods can easily lead to weight gain, which puts you at risk for all those diseases of chronic illnesses that are happening over and over and more and more in the United States.

So if you have a weight problem, do think carefully. These foods are calorie dense, they're inexpensive, and they are engineered to be desirable or irresistible.

Look, if you want to have a bowl of Froot Loops, a small bowl of Froot Loops, but the rest of your breakfast, the rest of your day is really healthy foods, I don't think that's a problem.

But when it's 60 or 70% of your diet, it might. If you're a normal weight, then that issue of ultra-processed foods making you eat more and more may not be a problem.

Sure, the calorie, I mean, the fact that there might be removal of vitamins, that's important. But again, for me, the big issue is the weight gain. So what do I do?

I eat anything in moderation. I drink alcohol in moderation. I have my bacon mostly in moderation. So for me, I don't get frightened by most of these food concerns.

But when I go to the market, I do shop around the periphery by and large. I get my whole fruits and veggies and I go to the meat counter and get my meats.

But I love to cook and I do buy canned tomatoes or canned black beans. And some of these clearly have salt added to them. They may have calcium chloride added to them, which is again part of the preservatives.

I might buy coconut milk to put in an Asian recipe, which has guar gum. And as I said, there may be preservatives, but I buy these. They are basically healthy ingredients, and maybe there's a little bit of other stuff added to them.

I don't eat frozen pizza, I don't eat frozen lasagna, the only frozen foods I really eat are I'll buy frozen fruit for

smoothies and I'll buy frozen peas for cooking for dinner.

I don't eat hamburger helper, I don't eat packaged easy to prepare items. Look, as I said earlier, Gail and I love artificial flavored mac and cheese, even though there is actual cheese supposedly in them.

And I love Jif peanut butter. I love the taste, the texture, and yes, it has hydrogenated oils, it has sugar, and it has some salt. But like those episodes on bacon and alcohol, I enjoy things in moderation.

My weight is fine, but if it were not, I would be more careful about some of those items in my diet. If I had diabetes or uncontrolled high blood pressure, I'd also be careful about the salt and the sugar.

And if I had unexplained illnesses or inflammation, I might try a diet without ultra processed foods using the end of one approach. So are ultra processed foods truly the evil that we hear about?

I think it's a mixed story like so many others. Let me know what you think. Have I confused you or has this been helpful to you? And again, tell others about the podcast.

I hope you live long and well and that you eat healthy, but also give yourself a chance to truly enjoy foods that you love. A few ultra-processed food indulgences shouldn't be too big of a problem.