Kelly Brownell:

Hello everyone. This is policy 360. I'm your host Kelly Brownell, Dean of the Sanford School of Public Policy at Duke University. I'd like to welcome you to the second of my conversations with Professor Barry Popkin. Barry is the director of the Nutrition Transition Research Program at the University of North Carolina at Chapel Hill, where he serves as distinguished professor in the School of Public Health. Barry has spent his career as a food science researcher. He's an economist by training and he's helping all of us understand the clauses and potential solutions for the worldwide obesity epidemic. Barry, given that your background is economics, let's talk about soda taxes, cause you've been deeply involved in this issue. Why would one think about taxes as a means of healthier nutrition?

Barry Popkin:

The major reason is, one that you certainly understand very well, is that we began in the 1890s with our first food research station on sugar. One in New Orleans. I mean one in Louisiana, one in Jamaica. Over that history from the 1890s to the present, we have worked to make sugar cheap. Later on we made grains and refined carbohydrates cheap, and we made vegetable oils cheap. And the process we made it easy for industry to create cheap soft drinks, cheap non-essential foods, chips, all sorts of different kinds of things we might call junk food. And in contrast, we put literally no infrastructure and no money into creating cheap, healthy food. Cheap little goons, beans as we might want to call them. Cheap fruits and vegetables so that the relative price of the healthy foods have gotten have gone up just since 1950, around 400%. In contrast, we've kept equal or gone down in the price of what we think of as unhealthy foods.

Kelly Brownell:

So the majority of the emphasis around food taxes in the world is around soda taxes. We're taxing sugar sweetened beverages. What's the rationale for that as opposed to other foods?

Barry Popkin:

The rationale is one that we learned only over the last 20 years, which is essentially that when you drink something, it doesn't affect what you eat. Your mind thinks you're being filled by drinking that smoothie, that soft drink, that fruit juice, that whatever beverage with calories, but somehow it doesn't affect your hunger. You think you're being satiated, but you're not. So that hundreds of studies so far, clinical studies long-term experiments of all sorts. Random control trials have shown that when you drink a beverage it's not compensated by what you eat, so that you don't reduce your food intake for that day. Even if you drank a smoothie, which you think fills you up, or you drank a latte with full of cream, it just doesn't do it somehow because it's an historical, it's an evolutionary issue.

And I'd like to take one digression and explain why from an evolutionary point of view, we might think this way. When we drink something we live. If we don't drink water within three to seven days, we die. In contrast, you can live for two months without food. Now, if you consider our ancestors who were seasonal eaters, they were hunter-gatherers. If they found a deer, or they found a wild boar, or they found some animal, they killed it and ate it before it spoiled. Unless, they were sophisticated enough to know how to dry it. But they had to eat in a very seasonal way, but they have to drink water every day. And if somehow that drinking water had filled them, when they found all that food to eat they might not have filled up. So for some reason, we don't understand biologically what we drink doesn't affect what we eat.

Kelly Brownell:

So you and I were authors on a paper with others that was published in 2009. They called for a penny per ounce tax on any beverage with added sugar. And it would be an excise tax. What do you think is the optimal form of taxes and what is the optimal amount of taxes on sugar-sweetened beverages?

Barry Popkin:

The optimal amount of the tax is at least two cents an ounce, if not three or four cents an ounce in our country because we're higher income. Although I must say, and we'll come back to this, that with even the Berkeley tax, a one cent in a low consuming area, we've seen some effect. But the reality is that in a higher income country, you need a two or three, which is about a 20 or 30% tax to truly make an impact on something that, which people really become habituated to.

In contrast, as you move to lower income countries, you could get by with a 20% tax, but that's a tax just based on volume of anything that's a soft drink. There's another approach that people talk about, but we haven't really tried any place in the world, which is taxing the sugar in beverages. Taxing for every gram or every teaspoon of sugar in a beverage. We give it a certain tax level and an UBIT, which would create an enormous incentive to cut sugar by the industry and also educate the public more on sugar. And we don't know because we haven't tried that yet, any place in the world, whether that will be effective, but economists simulate that might be a more effective tax.

Kelly Brownell:

Well, Barry, you, more than anybody else in the world have studied the outcome of these taxes once they're put into effect. And then you publish some data relatively recently on the experience in Mexico. And I know you were evaluating the tax in Berkeley. Could you tell us what you've learned from those?

Barry Popkin:

Yeah. Let me talk about the Mexican tax. There are actually two taxes and I'll talk about each. So we've already published one paper on the Mexican tax, which showed in the beginning, there was a small effect, but by the end of the 12 months the effect had quadrupled. So that over the year, this 10% tax led to a 6% decline in overall consumption purchases of beverages, but the soft drinks and a 4% increase in water consumption. But what happened was by the 12th month, the total effect was 12% for the whole Mexican population and 17% for low income, which meant that low-income people hardly paid much of the tax. Most of the tax was paid by the high-income Mexicans who didn't change their consumption. Which is perfect because they're the ones that get treated for their diabetes or it's the low-income get undiagnosed diabetes and die or have many complications.

So, that's one aspect of the tax. The second part is something that we'll be publishing this summer. And it will show that for that same tax, the high consumers cut their consumption by far the most significantly more. Four to six fold more than the low consumer so that the tax again had the perfect effect. The ones who consumed the most are most liable to the diabetes, they're overweight. The cardiovascular problems then the cancer problems related to drinking that sugar are the ones who are benefited the most. We also had an 8% tax on non-essential food in Mexico.

Essentially what we would think in this country is junk food and that tax had identical effect. We'll have in plus medicine paper coming out within weeks or months that will show the same kind of effect for the junk food tax. And we've had essentially the same kind of effects on high consumers versus low consumers. So the good is people are substituting healthy beverages for unhealthy beverages. The poor are not paying much of the tax and they're being benefited by cutting the sugar. The rich are paying for the taxes. So it's a win-win in many ways for public health.

Kelly Brownell:

One thing that was impressive is that it was a relatively low increase in price. So there was at least I had some concern that it wouldn't be high enough to have an impact. So it's very impressive that it has. And in one question I wanted to ask you is I know tobacco taxes had an especially beneficial effect on youth who were price sensitive and therefore didn't take up the habit of smoking because of the prices were too high and they couldn't afford the cigarettes. Is there any indication that this might be having a special impact on youth at a time when they might be developing preferences for these beverages?

Barry Popkin:

We have studied that only qualitatively so far. We're doing a next national diet survey this summer and we'll be able to get a sense of the changes in that. But the qualitative work suggests that around the schools, the kids are not buying the soft drinks they did before. Which is really where they bought most of them during breaks and after school that has had an effect, but we don't have the quantitative analysis yet.

Kelly Brownell:

So if you use a crystal ball and project ahead about what will be happening with these taxes five, 10 years from now, what would you expect?

Barry Popkin:

Well, I'll tell you this year, over the next 12 months, we'll probably have three to five countries with a 20 to 30% tax. And we may have one country with a 40% tax. So that this is beginning the Mexico experiment, which is really an experiment because the first time we did it, and then we wanted the 20% tax in Mexico. And with the conservative government, we got a 10% tax. We expect that as these taxes get larger and when the effects are shown to be significant, that countries will realize they both need revenue. They need money for public health, and it has both the revenue benefit and it has a benefit on health and it educates the population about the problems with sugary beverages. So it's changing the culture of eating as well by kind of creating this mass public debate that's going on in country, after country, as they propose the taxes. So the benefits, even if the taxes aren't passed, are enormous and getting people conscious about the costs of sugary beverages.

Kelly Brownell:

I very much appreciate you joining us today Barry. Barry Popkin is distinguished professor of nutrition and director of the Nutrition Transition Research Program at the University of North Carolina at Chapel Hill, and has written a book called 'The World is Fat'. As I mentioned, this is my second conversation with Barry. You can listen to previous conversations either at iTunes or on SoundCloud. Until next time, I'm Kelly Brownell.