

Welcome. You are listening to UC Davis center for poverty research conference podcast. I am the center's deputy director Marianne Page. In January 2014, the center hosted the War on Poverty Conference. The conference hosted top poverty experts from across the country to discuss the U.S. Safety Net on the 50 year anniversary of the War on Poverty.

In this presentation, David Frisvold discusses his research on how the School Breakfast Program has impacted student achievement. Frisvold is an Assistant Professor of Economics at the University of Iowa.

>> So first I'd like to start off by saying thanks for the opportunity to, to speak. And, and thanks to all the conference organizers for, for organizing this great event.

So I'm gonna talk about the school breakfast program. And, and so first, so all of my interests now underlies this idea, that better nourish, better nourished children perform better in school and so this is an idea that has been around for quite a long time. There was a lot of research to support this idea and this was my idea that was important in the 1960s and was important in terms of underlying the School Breakfast Program.

It was also important, in terms of, underlying the design of the Head Start Program where it was actually a pediatrician who took the lead in, in terms of figuring out the the design of the program. And it underlies the development of, of food assistance programs where there's this link between poverty and nutritional deficiencies.

And so food assistance programs are trying to re, reduce some of the nutritional deficiencies. And so, I'm gonna talk about the school breakfast program. Well, it's a that provides subsidized breakfast to low income children. And most of the research on this has been related to nutritional quality. And so we have some good evidence that the availability of the school breakfast program does improve the nutritional quality of diets and meals consumed during the during the morning.

Now, when the school breakfast program was launched in 1966, President Johnson launched it with the phrase good nutrition is essential to good learning. Now so that's kind of the, the launching point of the program. It turns out, though, there's really been very limited research on the ac, academic or achievement outcomes of the school breakfast program.

So there's been a lot of work in developing countries, a lot of work just related to the idea of breakfast consumption in general. There's been some recent work on changing where students are eating breakfast. But in terms of just expanding the availability of the program, the, the extent of the literature is, is really there was a, a paper in that, that focused on a few schools in Massachusetts in the 80s.

And, as I'm trying to kind of, go, a more of an understanding of, is it really the case that the school breakfast program influences achievement outcomes? And so just to give kind of a sense of where the paper is going I'm going to provide a little more background about food assistance, or school meal programs.

So I'm gonna try to leverage some state mandates that, that require some schools to offer breakfast and, and others are not required to. And, the results are gonna be that the availability of the program is well at least I think it achieve, increases achievement and it seems that it improves nutrition.

So let me just give some historical context of, of U.S. school meal programs. Right. So this has been primarily in the late 1800s, early 1900s it was city programs. And so, a lot of the early starters that you hear a lot of about are Philadelphia, Boston, Milwaukee. It expands to a handful of other cities then.

Throughout the early 1900s into the 1920s. In coming out of or I guess in and coming out of the depression federal assistance starts to begin so the school lunch program and the school breakfast program are not the first times that you hear about school meal programs that's really just when it becomes more formalized in the federal system.

And, so in, so federal systems takes off after the depression in 1946 after World War II, the national school lunch program begins. And so I just wanted to, to show you this is kind of how they thought of it in 1946. So, in the

beginning of the School Lunch Act it was designed as a measure of national security.

Right? So the concern was about the military and whether or not people were basically able to serve. So national security to safe, safeguard the health and well being of the nations' children and to encourage the domestic consumption of nutrition agricultural commodities. So that's, there was, there was many things that school lunches were trying to do.

Then in 1966 it was a little bit different. Right. So when, when the school the child nutrition act of 1966 was launched what they started the discussion with was what they had learned through the school lunch program. And the idea that they've learned about the benefits to, to children and the, the idea that it could improve our student outcomes.

Now when it was launched there was no discussion of national security at the time. They did mention safeguarding the health and, and well-being of the nation's children and they actually did mention higher agricultural programs as well. That's actually a little bit less. So, currently that's, that's less of, of an issue for breakfast.

In fact, you actually don't have entitlement foods and bonus foods on the school breakfast program. And so then, I just wanted to contrast the difference, the one we started in 66, the idea that there was going to be some influence on learning. And then just to give you more sense of some of the sch, sch, school meal programs.

1966, the Special Meal Program begins and this is for schools that don't have either of the other two programs. And then we have the Summer Food Service begins in 68 and what is now called CACSP, Child Adult, something food program. Yes thank you and that starts in 68.

And so I just wanted to show you some sense of the signs of these programs. And how they changed over the last bit of time, right? So here we have the school breakfast program in terms of the amount of schools participating across the country. So, it's gonna go from less than 10% up to about 90% of children participating.

It was less than a million to 13 million. Less than a billion meals were served to now two point two billion meals served, and it cost almost \$11 million in 1970. Now it's a \$3 billion program. This number's not quite right. I, I don't know what the exact number is.

But the, the school lunch program is now basically in almost every school. If you have a cafeteria, you, you, you participate in the school breakfast program. I'm sorry, the school lunch program. That's not necessarily true for breakfast. School lunch is much bigger and the expansion from 1970 forward, is much smaller.

Just from the we're talking about 30 million children versus 13 million. It's a much bigger school lunch program, but the increase over time much smaller. So I'm gonna be focusing most on the school breakfast program. Now the way the breakfast is structured is as long as it's available in schools, everyone's entitled to a meal.

The difference is just what you pay for that meal. And so the reason why there's the difference is in terms of how much the federal government reimburses the per meal cost. But also they put a cap on how much you can charge reduced price st, students are receiving a reduced price meal.

And so if your family household income is 130% or below of probably, then you see the free meal. 130 to 185 is a reduced price, where, for breakfast, you can't pay more than \$0.30 per meal. And then, even above 185 you still, there's still a small subsidy that the federal government pays on a per meal cost.

And so it's now \$0.26 although this is, the 2010, the 2011 just cuz it's still a cleaner. So it's just got a little bit slightly more complicated because of the latest reauthorization of the Child Nutrition Act, and this was just a cleaner version to show. And so then just to sh, contrast the difference, so this is going to be some in cost is just lunch is more expensive than breakfast.

So, I wanna just to give kind of some example of what to think about breakfast, when I say I think that we all have some kind of different notion of what school breakfast looks like and so, I grabbed the menu. For, for one of these

talks, so I, I was going to talk a while back, and I grabbed this menu.

And it's the worst week possible in the entire year. And so, it's, it's kind of useful to, to kinda just see this. And this is also. It's not really the best district. So this is gonna be a large urban district, that just to give you kind of some sense of, of what meals could look like.

And so this, the idea is gonna be the same kind of give you some sense of how this has changed over time. But the idea, you're gonna have a choice of milk. You're gonna have some type of fruit related item. Right? So you know I'm here it's gonna be some type of juice or some, some type of fruit and then you're gonna have some type of entree.

Now, what's gonna stand out here compared to how it was when it launched, is there would have been very limited proteins back then, right? So the idea when it was launched was, you know, again, we had 15 cents per meal. And 15 cents per meal actually didn't pay for protein.

So the, the, I think the official language was something like, serve protein as you could. Or, or it was recommended. But no school could ever actually have the resources to do it. So, this has come, in some way, that this has changed. And so one of the, I just wanted to give you kind some sense of, of what to think about.

And so the story is not gonna be that, so, although there are set USDA guidelines and there have always been set USDA guideline for what the meals should consist of. The story is not necessarily going to be that, you're going to school and, you know, you're walking in to a giant you know smorgasbord of fresh fruits and they just came off the farmer's truck.

It's gonna be the idea that it's a relative improvement, right? So it's better than what you would have had otherwise. And so that's kind of the story with the nutritional aspect.

>> And so there's this question of why might the availability of breakfast then improve nutrition. And so, I'm sorry, improve achievement.

And first, I think nutrition comes to mind, and that was actually why it was launched, right? Why was this idea of nutrition? And so there's been a lot of work underlying nutrition and breakfast consumption in general, and the idea is, it can enhance memory, mental concentration, and cognition.

And so there's gonna be differences. And some aspects are gonna be more focused towards long term cognition and some are being more focused toward short term cognition. And so, this is just gonna be an example of some of the different mechanisms through which nutrition can influence cognition. So we're gonna have things like iodine, iron, are gonna be more in terms of influencing long term cognition.

Things like glucose are gonna be short terms spikes. Although one of the things is that as you switch from say simple carbohydrates to high fiber items you're gonna get basically more sustained glucose response. So it's not as much of a short term spike in, in terms of cognition benefits.

So besides nutrition though, it could just be the case that students showed a school more often as a result of breakfast consumption. Now that could be a couple of mechanisms that could drive this. It could be the case that breakfast provides some incentive to get to school. Or for parents to get their children to school cuz you know that they're at least getting a meal at school.

That could be the case that if, if they're just gonna be late. What? So maybe you're just always 15 minutes late? Well maybe it's better to be 15 minutes late than 15 minutes late for first period. You know, it also could be the case though, that they're fewer illness related absences.

And attendance so it, it could have this interesting affect of, it changes the peer composition of, of, so if there's increase in tens, this can change the peer composition of who either who was on the bus or who was in school. And so the peer effects, it's actually not clear which way it would go.

Now there's also a potential income effect, right? So, if it's not the case that it is increasing breakfast consumption, then there's an income effect because, what it's doing is it's just changing which resources are, are used to pay for for breakfast. So it's switching it from household resources to school resources.

And just to kind of ballpark some of this, so if you take the federal reimbursement rate and, and make the, you know, assumption, which is you know, an assumption that the federal reimbursement rate would be the same as when the household would pay for breakfast. That would be about \$26 per month per child.

So for a family at 100% of poverty, that's 3% of gross income, and just to ballpark what \$26 per month per child is, now that's about 70% of the average monthly food cost per person for a week. Now so, you can think of it either a couple ways.

One maybe you can think of it as the school breakfast income effect or, or school breakfast amount maybe is not as small as you would have thought. Or you might think of it is, the, the week payment is actually quite small. So, and now then, what happens with school breakfast is, it's also earlier.

All right. So the timing could play a role in terms of how this influences starting times at school and, and sleep time. So how does the school breakfast program differ from the lunch program? So timing can be an important role, and timing, what it's gonna do here is, it's gonna influence which schools participate, but also which students enroll.

So, this is something that the national school lunch program is different in the sense that you're already at school. And so when with the school lunch program, the per meal costs are reimbursed. And so if you're gonna provide a cafeteria for students, then it's, it's generally worth it for the school to accept the per-meal reimbursement rate and to provide school lunch.

For breakfast it's a little bit different because it's prior to the start of the school day. So that can involve rearranging transportation systems. And that can complicate transportation for families' transportation for the school district. You also have to have additional staffing prior to the start of the school day.

Depending on the school district, that could involve changing some of the union contracts that have start times. So there's a little bit more involved in a meal that's prior to the start of the school. Now, since it can influence which students participate. There are different demographics from the school lunch program to the school breakfast program.

So, just to give you some numbers. 82% of meals for the school breakfast program are either served free or reduced price. So, they are served to students that are less than 185% of poverty. And that's just 2004 numbers, but basically since 2000, since 1973, it's been at least 80%.

Now that's been changing a, uh, quite a bit for school lunch. So school lunch, it's actually been increasing over time, but is still only in 2004's only 59%. All right. So, it's a different demographic of the student that's going to show up to school early for breakfast than it is for the student who is going to go to lunch.

And so that, you might think that that influences basically like the counterfactual of what students would be consuming in the absence of the program. And so, school breakfast is not available in all schools and it's actually expanded dramatically in the last 20 years. And so that's gonna be similar.

That's gonna be a lot of what I'll focus on in the talk. And so I'm gonna talk a lot about the availability of breakfast. So one, I think that's the policy lever. And that's been the policy lever throughout most of the time of the program? Now there's been policy attention recently to changing breakfast from the cafeteria to the classroom.

But in, in general, most of the discussion's been on increasing access to the availability of the program in schools. There's also a nice benefit. There's less measurement error. Right? So what happens is, in information that, that I can observe schools are asked, do you participate in the USDA's school breakfast program?

Which is gonna be a little bit different than when you ask parents, does your child have breakfast at school? Right? So

you can have breakfast at school through many different areas. You can have breakfast at school through vending machines. You can have breakfast at school through other types of competitive foods.

Or you can have breakfast at school through the school breakfast program. Or you can actually have no idea what is going on in the schools and you might think you're sending your child off with money that is used for something else. >> And there's one other way that they differ is was in the very start of the program it's like 66.

You could have entitlement foods through the school breakfast room and bonus foods. And what I mean by these are these are agricultural supports, basically. And so, now the entitlement foods and bonus foods are actually supposed to be just for the lunch program. Although, you know, you'll talk to people and and there's fungibility, right?

So as you might expect. So let me give just some kind of context of the availability of the program and how's it changed, right? So in 1966, the school breakfast program was launched as a pilot program. Funds were targeted towards the, the poor schools and our rural schools.

So schools where our students had to large travel distance. That was the idea of the targeting. It doesn't seem to be the case that that's necessarily actually how that occurred, but that was the idea behind it at the time in 66. Now, one of the things that occurred was that funding was not actually sufficient to cover the cost of food, and it wasn't actually designed to be, so first they will just provide a set amount per meal, it wasn't covered in the cost of food, but even then they have these higher poverty schools where it was just 80% of the costs of the food.

So they actually did not even intend it to completely cover the cost of food. So that is gonna keep availability down. Further expanded in the early 1970s to cover the cost of food, but not labor. So that's further gonna increase our decrease the, the incentive for schools to participate in the program.

And so one of the things that happened was schools at least from the the, the histories that are written during this time was that schools reallocated 10-01 funds to make up the gap. Now that wasn't minus that, that wasn't actually legal but that was what happened. At, at least from some of these, these histories of the program.

And then the school of breakfast frame was permanently authorized in 1975. So, I just wanna give you kind of some sense of whether this is premium authorization in 1975 and on the y-axis you have the percent of schools serving breakfast that also serve lunch. Right, so these are gonna be schools that have cafeterias.

So, it's, as 15% in 1965 and, or 75, and then right after authorization you see the increase. Right, and so there's gonna be a a large increase up until 1980 and then it plateaus. Funding's basically a constant. And then it increases again, late 80s to early 90s. And that's gonna be the period that's gonna kind of they're focus on why that increase occurred.

And so the expansion of breakfast program stagnates in the 80s. And the concern was that, although the federal government was providing the per-meal cost, they were not there were still upfront start up costs that the schools would have to face that made it so that they were reluctant to, to begin participating in the program.

So along comes the Child Nutrition Act of 1989. And so what happened was when the Child Nutrition Act of 89, let's kind of set aside funds for specifically for start up costs. And so those started in 89 all the way up until welfare reform in 96. And so, what these start-up costs were, the way that they were allocated was Congress said we're gonna allocate these funds to states.

The states can demonstrate that the funds were gonna be allocated towards high-poverty schools, all right. So then, what you see, and this is just focusing in on that same graph, but from 1991 to almost current. And so there's this large increase that's occurred and right after that from just below 50% to about 75%.

And then it's slowly increasing a little bit after that. And this period of startup funds being available, you get a substantial increase in schools that are offering breakfast. And so, what happened was that, when states had to allocate funds to high poverty schools, what they did was, they created these mandates.

And these mandates are being based on de, defining which schools are required to offer breakfast, and they did this based off of the percent of reduced price eligible students in the school. And so, most of these have this range of 10 to 40%, except Connecticut has an 80% threshold.

And what I mean by these, thresholds, is just to take them as an example of Ohio. So Ohio has a 33% threshold. So what that means is, when you look at the student body and who is eligible for free or reduced price meals. So if the, if the school's gonna have a school lunch, you're gonna have good information about this.

And, once at least 33% of the student body is eligible for the free or reduced priced meals. Then you're gonna be required to offer breakfast in in Ohio. But at 32% you're not required to. That doesn't mean you can't, it just doesn't mean, it just means you don't have to.

And, so I'm gonna try to some of these state mandates and just to give you a sense of what the, wh, what, where the distribution of these mandates. Looks like is seven states just require all schools to participate, 16 states require some schools to participate, and 28 don't have a requirement.

All right, so just to show you what this, this map looks like across the country right so here we are. There's actually no mandate here, because the way it's set up is that schools are required to offer one meal, so that basically is saying you're not required to offer breakfast since the, the easier option is lunch.

So, one of the things you'll notice is that, so this is so the, the darkest states are going to have no requirement on breakfast. The lightest states are going to require all schools to offer breakfast. And the shades of grey are going to require some schools to offer breakfast.

So, the grey states are the right half of the country and the Pacific Northwest. So this is actually gonna be different than, right. This is, this is the idea that school breakfast is different than in agricultural support program, right? So this is not, this is actually where I live now and this is not grey or all white, right.

So this is not an agricultural support program. So, what you see, is that it's the south and northeast that is requiring schools to, to offer breakfast. And it's somewhat of a switch. Right. It's a kinetic of how you maybe you might think about this working? Kinetic has an 80% threshold.

So, that means basically, almost the entire school has to be eligible for work free or reduced price meals before the school was required to offer breakfast. The other end of the spectrum is Texas has a 10% threshold. All right, so it's actually much lower than, than, than maybe you might think or at least that, that might prior would've been going into this.

But so what I'm gonna do, is I'm gonna try to leverage these gray states and. Where the idea is that even, within the states, some schools are going to be required and some schools are not. And the idea is that within those states, I'm gonna then be trying to compare.

Schools that have those set poverty lines, where one school's required and one's not. To another state where at those same poverty lines, both schools would be on the same side of the threshold. So that's kind of the idea of what I'm gonna try to do. And I'm gonna do it through two, two ways.

So first I'm just gonna give a, I'm gonna look at the biggest data set I can find. And I'm gonna try to get a sense how these mandates influence achievement and I'm gonna focus on fourth grade on 2003, just like we compared to this other data set. And I'm gonna look at public school students cuz the mandates apply to public schools.

And I'm gonna have information on 50,000 plus students. The downside is it's really just getting a sense of the mandates. So there's not information on which schools are required to offer breakfast. So then, I'm gonna try to get a better sense of the, how the availability of the breakfast program influences achievement by turning to the early childhood longitudinal study that has just 3000 observations.

But it has better information, as information from the principals on whether or not the school participates in the USDA school breakfast program. It has information from the students about food consumption to give me some sense of how this influences nutrition. And it has information about attendance. So one of the things that's gonna come up is schools are, are.

So, when these mandates were created and the startup funds were established, the idea was that the per-meal costs are, once, once schools are required to offer breakfast, or they're incentivized to offer breakfast with these school startup fund, or, startup fund grants, then the per-meal costs are covered, so schools will continue to offer breakfast.

All right. So then, there's this issue of once the mandate binds, students are, or schools are, are unlikely to stop offering breakfast. So, one, the startup costs are already are already born. But also, it's not the easiest thing to do, for a principal to say, you might have though you had a benefit last year, but we're takin' it away from you this year.

So it turns out in the ECL's K data, we don't see any school that stopped offering breakfast once the mandate binds. So what I'm gonna do is I'm gonna get information off of the percent of free and reduced priced eligible students in the school, going back to 1999 and the common core of data.

Which is a data set from the U.S. Department of Education that covers the universe of public schools. And so, I'm gonna link that to these other data sets to get a sense of how the percent of free and reduced price eligible students in the school has changed since, since 1999.

Now and some of this is the maximum percent, so basically the idea is once this mandate kicks in, then, it's effective. Now I'll say, these are elig, this is eligibility counts based off of October 1, so this is not gonna be reflecting students who are deciding to consume breakfast in school or this is whether or not you're eligible.

And so, this is gonna, this is gonna be the, the basic story of the paper. And this idea. So what this is, is you're trying to compare schools that offer breakfast to schools that don't and understand how that influences academic outcomes. Well, the problem is gonna be that, as you might expect, there's gonna be lots of differences between which schools offer breakfast and which schools don't.

And it's gonna be difficult to, to try to control for some of these differences. And so if we look at, these, this is just gonna be, in general schools that are above the state threshold. Right. So these schools are all required to offer breakfast. This column is gonna be schools below the threshold, so they're not required to offer breakfast.

So students 98% of students attend school that offers breakfast when they're required. Then 46% attend school that still offers breakfast even if it's not required. And the math scores are much lower in schools that offer breakfast. All right, but of course, these are much higher poverty schools. All right?

So, you wouldn't wanna necessarily jump to this conclusion that, well, a school with breakfast is available and scores are lower. So instead, what I am gonna do is, just to kind of give you some sense of where this is going, I'm gonna just focus on schools that are clo, close to these state thresholds.

So plus or minus 5% points of the threshold. And so this is going to be 93% of schools above these thresholds are going to offer a breakfast versus 52%, so big increase. But now the test scores signs are reversed. Right. So, these are still higher poverty schools. By an average 5% points higher, percent free on this price eligible students.

But the signs of the difference in, in test scores is, is foot.

>> Students. So this is small. And that's why I'm gonna focus on math first. Nate first, sorry. So these are gonna be really small. And, and so that's basically gonna be the story though. Oh, perfect.

So these are actually quite. Large, right. So this is gonna be this difference is gonna be about a third of the standard deviation. So just to give you a sense of what happens if you just look at the distribution of student achievement of students above and below these thresholds.

So this is gonna be the distribution of soon it's just above the state threshold where you're required to offer breakfast for math achievement and this is gonna be the distribution of, of students just below the state threshold where you're not required to offer breakfast. And so there's gonna be a large increase at the left tail of the distribution, but also all throughout.

So this is gonna be kind of the idea. Ignore this up here except I wanted to give you a sense of, of the specific thresholds, right? So these are gonna range from 10 to 40%, and there's lots of different thresholds that states have used. What I'm gonna try to do is, this is the idea.

I'm gonna compare two states. Where both states have some requirement that students participate. One state's gonna have a 25% threshold, but another state is gonna have a 35% threshold. And so the idea is gonna be, if you compare a state, a school that is at 20% and a school's at 30%.

You're gonna take the difference across the threshold in the state with the 25% and the difference between 20 and 30% in the state where neither would be required. So there, the threshold's still higher. So I'm just to difference with in-states and then across our, our our, across poverty levels.

And so what I'm gonna find is that crossing these thresholds, is gonna lead to an 8% point, oh sorry, an 8% standard deviation increase and math achievement scores and a 5% increase in reading achievement scores. And if I try to then focus on schools that are closer to the threshold the results are gonna be reasonably similar.

So, just gonna do one other thing, and that's gonna be. I'm gonna try to focus a little bit more on schools right around the threshold through a regression discontinuity design. And I'm actually gonna find similar, reasonably similar estimates for math. All right, so we have 9% of a standard deviation, compared to here.

The estimates range from 8 to 9%.

>> For reading, it was about 5%. And now, the estimates are gonna run up to 12%. So I'll show you some graphs, they're kinda ugly. But, this is the, what, basically what these estimates are, and so there's an idea that right at these thresholds, there's gonna be an increase in review and achievement, and then increase in math achievement.

Now, you might worry about all sorts of things, I'm just gonna briefly go through that, right? So one of the things you'd be worried about is, is these threshold or notes, so students or school administrators could do all sorts of things. They could say, oh, the deadline for turning in your paperwork is October 2nd.

Well, turns out, you missed the threshold, so then we're not required to offer breakfast. Well, one of the things that's actually happened recently. And during this time so that there's not state they turn to figure out who's eligible. They turned to the state administrative rules for tennis and and snacks.

So there's direct certification for who is eligible and who is not. And the idea behind that is that it reduces the paperwork that parents have to go through to determine if they're eligible for school meal programs or not. And that's gonna try to reduce some of the sort, sorting around the threshold.

But just in the interest of time, I'm gonna skip, skip most of that. And what I wanna, do is I wanna show you these kind of ideas and the ECL's K data. So this is a s, much smaller data set. One of the ideas is gonna allow me to try to get some more information on whats occurring.

And so, this is just these difference and difference specifications where previously I found that having crossing these state mandates mandates increases math achievement by at least 9% of the student deviation and reading achievement by at least 5% of the standard deviation. So what I am gonna find is that for math, actually a very similar estimate, so what 9% of the standard deviation, and for reading 12% of the standard deviation.

And that's gonna be driven by a, one third increase in the likelihood of offering breakfast as a result of these state requirements right? So then your gonna scale these up to about a third of a standard deviation increase in reading and math. These are actually quite large, and so what I want you to keep in mind is that this is not a one year effect.



Like because, once the breakfast program goes into place in the school, it stays. Right. So think of this as a through out elementary school effect. You might be worried about all sorts of things. I just wanna show you that there wasn't increases in school entrance tests. And what I wanna do, is, I wanna focus on, so, a little bit of why this might be occurring.

Right. So this, this is kind of a busy table, but so let me just show you what this is trying to do, is it's trying to say, is this really coming about because of nutrition? Is it coming about, and, and then I'm gonna try to get a sense of attendance?

Why might there be an, an a influence on academic outcomes, or, or these cognitive measures. So parents are reporting how often the students are eating breakfast at home. And it doesn't seem to be the case that this is actually changing whether or not you eat breakfast. So this is actually consistent with some of the prior work that this isn't actually at least in the, the last 20 years, this is not changing not reducing breakfast skipping.

So the story's gonna be, what it's doing is it's actually changing just what you eat for breakfast. So, it's all about relative gains. Related to consumption. And so, what you see are these increases in things like milk consumption. So students are asked, how many servings of milk do you have per week?

I, ideally, not the best information, but it's information that we have available, and it's actually better than parent reports. So, what we see is we see increases in milk consumption, we see reductions in soda consumption. We see increases in fruit consumption, so this is actually consistent right. So the menu I showed you and that's across the board, you're a choice of milk is offered.

You're not allowed to offer soda. So, so soda consumption's about one soda per day. So that reduces it quite a bit. And fruit consumption increases. Not really a change in solid consumption. All this is consistent with the idea that you're influencing nutrition at school and, and a way that is, is improving nutritional content.

And so I'm just gonna go through that in the interest of time to, but to say that it doesn't really seem like it's, it's an attendance effect. All right. So, I'm able to look at information on unexcused and excused absences and unexcused and excused tardies, it doesn't really seem to be the case that it's driven by absences and tardies.

It seems to be more of a nutritional story, with the limited nutritional information I have. And so the idea you know, just to kind of summarize some, some key points. Breakfast has become increasingly available in schools. So since 1966 particularly since permanent authorization of the school breakfast program in 1975.

Breakfast has increased quite a bit, especially relative to lunch and particularly after additional funding and state mandates that occurred in the early 1990's. So then this question of do these state mandates actually do what they were intended to do? And do they influence whether or not the school breakfast program is offered.

The answer seems to be yes, and, and by at least 33% points. There's actually quite high compliance. Which I, I think is, is, is just interesting in itself. So many other things have quite low compliance. So then, does the availability of the breakfast program influence cognitive achievement? The answer seems to be yes.

And the results, I think, are most robust for math. Evidence supports the story for reading and science. The large results due to this is the impact throughout elementary school. And there's suggestive evidence that it doesn't change this in the last 20 years. The story's that are, are ten years.

The story's that it doesn't change whether or not you eat breakfast, it just changes what you eat for breakfast. And so I want you to think about the, so the anecdotes that I hear all the time that are never gonna make it into a paper, are the idea that what it's doing is it's changing, you're not having Coke and Doritos for breakfast.

You're having milk and some fruit substance.

>> So, that's kind of the idea. And I can't rule out income or peer effects as well, but that's kind of the story of, of

what I think has been happening to the school breakfast program. And with that, I'd like to say thanks.

>> I'm Ann Stevens, the Director of the Center for Poverty Research at UC Davis and I want to thank you for listening. The center is one of three federally designated poverty research centers in the United States. Our mission is to facilitate non-partisan academic research on domestic poverty, to disseminate this research and to train the next generation of poverty scholars.

Core funding comes from the US Department of Health and Human Services. For more information about the center, visit us online at [poverty.ucdavis.edu](http://poverty.ucdavis.edu).