

Welcome. You are listening to a UC Davis Center for Poverty Research Conference podcast. I am the center's deputy director, Marion 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, Hilary Hoynes discusses her research on the Food Stamp Program in the US, and its impact over the past 50 years. Hoynes is a professor of Public Policy and Economics, and past distinguished chair in Economic Disparities at the University of California, Berkeley. She is a research affiliate for the UC Davis Center for Poverty Research, and is co-editor of the leading journal in economics, American Economic Review.

>> It's great to be here, thanks for inviting me. I am super happy to spend some time talking about the food stamp program. I'm also gonna be, I'm gonna try to accomplish a couple of things today in the, in the time that I have. And much of the work that I am gonna be talking about today is joined with two of my co-authors, Diane Schanzenbach who was going to be here, but is not.

And as a discussant on the Gender paper, and Doug Almond. So I, I wanna start with in my presentation some context for the food stamp program which is the, the, the, the topic of my, of my talk today. And in particular, I wanna try to convince you about the central element that the food stamp program plays today in the U.S. safety net.

So in, in prices nice long history of social insurance versus public assistance, you're now talking to public assistance. My talk is me very much thinking about food stamps within the context of the public assistance safety net primarily in my, in my talk today. And one of the interesting features about the food stamp program is that.

It's a, it's a federally run program that exhibits very little variation across space, which is very unusual for a public assistance program in the United States. And also is experienced very little in the way of reforms over time that have, that have been featured so heavily in other elements of the safety net.

And so that has made it a bit vexing for trying to evaluate what food stamps does. And so what I'm gonna be talking about today is a research program. Although I'm gonna primarily focus on our most recent paper in that research program. Which uses the historical roll out of the Food Stamp Program in order to evaluate what it does.

And so we have a series of papers. This is with Dianna and Dunn that looks at the effect of the Food Stamp Program on family consumption decisions labor supply, as well as what I want to talk about today, and that is health outcomes. And this is part of some greater interest of mine with different collaborators including Doug Miller, who is here today.

An interest in looking at the effects of programs that are not designed to be health programs and using and trying to understand whether those programs lead to benefits on health. And so this work I'm going to be talking about today sort of fits into a broader research agenda that that I'd been involved in.

So what I wanna do is start by telling you about what food stamp program is. Talking about how it fits into the safety net. Giving you some context on that. And then I'm gonna sort of briefly review some work on, that we've done on the effects of the food stamp program on, on infant health outcomes.

And then spend the bulk of the time talking about the most recent work we have, which relates availability of food stamps in early life to early adulthood, or middle adulthood. Now that I'm the age of the people in my study. in, in terms of their health and economic outcomes.

So that's the plan. So I wanna start by providing some context and the state of the safety net if you will, and how food stamps fits into it. So, this is kinda zeroing in one piece of the latter parts of some of the graphs that, that Price presented in his comments.

So what I want to kind of have you thinking about in terms of what the main elements of the safety net are, and I

should say that I am sort of particularly interested in non-elderly families. So moving grandma aside for the moment. And I'm interested in just narrowing down the safety net to consider the cash or near cash safety net.

And so these would be the main elements today in, in that food stamps, I'm gonna be talking about the earned income tax credit which is way post the war on poverty. Cash welfare unemployment compensation and maybe to a lesser extent but increasingly importantly disability benefits. So I'm not really gonna say much more about these programs at all, other than just letting you know sort of how food stamps fits into that.

So, starting in 1980, what I've plotted here, for the three main programs for families with children, this is just per capita real expenditures. The gray periods are periods of contraction national recessionary contractions. And what you can see, the point of this is simply to show that, you know, there's been a lot of change in the safety net in this time period.

The EITC which is the black line is really, has really entered into maturity AFDC TANF has really, which is the blue line, has become much less relevant today. And food stamps the red line has, has, has become more important and, and one of the things that I want to sort of argue with just at the beginning of my talk is that food stamps really is in my mind the fundamental safety net in America that's sort of left.

And so I wanna talk about that a little bit before going into the, the specifics of the historical context of the roll out of the food stamp program. So to step back a little bit and to talk a little bit more broadly about the elements of the safety net.

There's a lot of lines here, it's a bit busy. I don't wanna get into too much detail, but I do wanna put in context the fact that returning to that same notion of per capita expenditures in real terms over this time period. The same programs that I had before, but plus adding in the social insurance programs and employment insurance and, and the disability programs.

You start to see just how important the social insurance programs are, and we are not even going down the health road. So the reddish lines here. the, the disability programs Social Security Disability and SSI. And the black solid line here is unemployment insurance, which of course you see really prominently in the Great Recession.

So I just wanted to sort of start with that as a context for thinking about what I'm gonna be focusing on, which is largely going to be, I guess, in this line. In this graph now, the food stamp program is where I'm going to be focusing on. Although, of course, all the action from my analysis is gonna be in the, in the mid-60s to mid-70s prior to this sort of modern day picture of the, of the safety net.

So, with that sort of context. What, what are food stamps, what were they, what are they? Originally food stamps were the, was a paper based currency system. It now provides benefits through debit cards. The structure of food stamps is like a traditional welfare program in the sense that you are eligible for the largest benefit if you have no income.

And as your income increases, the benefit is tapered off. Although food stamps is always had a much lower taper off rate than say AFDC TANF. And so as a consequence, it brings in a lot more of the working poor than AFDC ever did. That's kind of important, I think, for the political context and for the fact that food stamps is what survived all of this.

With the food stamp voucher then, or the debit card now, or the currency then and the, and the debit card now. You essentially can go into any authorized retailer, which includes pretty much anywhere you would have food to purchase in the grocery store and buy pretty much any food product in the grocery store with a few exceptions, alcohol, if that's food.

Technically, I'm not sure. And also ready to eat foods are excluded, are not allowable to be purchased. And, you know, back in the day, in th 60s and 70s, that was a pretty small part of the grocery store. Certainly that is something that has grown. So, food stamps is means tested, you need to have low income and assets in order to be eligible.

And as I have said before, it's a program that is very much run centrally and federally out of the USDA, and has been

through this entire time period. So what, to my mind, as a scholar of the public assistance safety net in the modern era, what makes the food stamp program so unusual, is that it's essentially the only element of our, of our safety net that's universal.

You don't need to be in a preferred group to be eligible. You don't need to be a mother with children. You don't need to be disabled or elderly. If you're income and asset eligible, you're eligible for, for food stamps. There's some, you know, nuances on that in today's world with some of the able bodied restrictions.

But for the most part, this is the fundamental safety net in the United States specifically because it's universal. And I think that's really important for thinking about the program. So today we've got a little under 50 million people on food stamps. You can see there what the average benefits and so on, and, you know, it is kind of at the top of the list of, of things that are, there's interest in reforming, and maybe in the common period we can talk about that.

So, just to close out this initial conversation about, about food stamps, I just wanna show you some evidence about what I would consider the two main definitions of what a safety net is. Number one, it increases income at the bottom of the distribution. And number two, it provides some kind of insurance for times of need.

So when you have a shock to income it provides some protection. And so let me just show you a few things about that. So number one how, how important is food stamps as a kind of redistribution program. So what I've got here is based on calculations from the new census supplemental poverty measure, we'll be talking more about that later on today.

To what extent do each one of these social programs reduce the poverty rate for children? That's what this is. And so, what you can see here is Snap, what, the name, current name for our food stamps, reduces the poverty rate for children by three percentage points. And the only program that's more important than that is the Earned Income Tax Credit, for children.

If you step back and talk about the population at large and not just children, the most important anti-poverty program in the United States is Social Security, for sure. That's the, that's the third set of bars. But you can get a context of how important the various suite of public programs are for poverty in the United States.

So, using the most recent data from 2012 the food stamp program removes about 5 million persons from poverty and about 2.2 million children from poverty. So, it is the second most important anti-poverty program for children in America, or the third most important for people overall. So it's an importantly distribution program.

Number two, does it respond in times of need? Yes. And much more so than other elements of the public assistance safety net such as TANF, which's essentially responded minimally in the great recession. So this just shows you that by illustrating the response of the food stamp case load to the entry into the great recession.

Just looking at state by state each one of these dots is just a state between 2007 and 2009. So areas that saw larger increase of unemployment experienced a larger increase in the food stamp case load. And that's just sort of an illustration that in fact the program was reacting in places where there's, there's need.

So by this I just wanted to sort of give you a context for, for what I see to be a really central element of the safety net today. So now, for you know, moving into the war on poverty, let's talk a little bit more about where our food stamp program came from.

So, very much, you know, building on some of the conversations in the last in the last talk. Food stamps predates the War on Poverty. And in fact it was one of President Kennedy's first executive orders upon coming into office, was to establish a series of pilot programs for the modern day Food Stamp Program.

And then there, there was sort of a period of, of experimentation on these pilot programs in the early 60s, that culminated in the important passage during the War of Poverty era of the Food Stamp Act in 1964. Which really launches the beginning of food stamps in the United States.

Now what's kind of interesting about this context is that, it wasn't because of you know a political cooperation among, among opposing parties towards the passage of, of the Food Stamp Act. We ended up with a policy that was not require, a requirement from top down. So it was a interesting thing about food stamps and its origin, and what kinda creates the possibility for the research that I've been engaging in, is the fact that this food stamp program was created.

It wa, the program was set up very much as it is today. And it was the, the, the federal government says counties, if you want this program, apply for it, and we'll fund them as we have appropriations for it, but you aren't required to have this program in place.

And so that led to this sort of rollout of the program which took place over the next ten or 15 years when the next important legislation was passed that said, okay, now everybody needs to have these programs in place. So what that generated is a sort of rich setting for the rollout of the food stamp program.

So what this gives you is just an idea of how quick that rollout was from a kind of aggregate perspective. So, this is just the percent of individuals who lived in counties that had a food stamp program in place year on year, as well as demarcating the main policy apps that took place over this period.

And so you can see between 1964 and the, the 1975, this remarkably sort of linear period of increase and exp. Expansion of the program as it was rolled out across areas. And so, and, and what also seems to be the case from some of the earliest data we have on county level participation in the program, is that that roll out seemed to get to scale pretty quickly.

That's what this second graph sort of illustrates. So what we end up leveraging in our, in our work is a kind of geographic variation by county, which are small administrative units in the United States, of which there's about 3,000. And year, in terms of an individual's exposure to the food stamp program.

And so, in much of our research, we essentially relate some economic or health outcome to a county by year measure of whether or not food stamps is available in your county. Either in a contemporaneous way or at birth, which is gonna be the, the focus of, most of my talk today.

So, of course, in this sort of context where you're using this incredible variation in the availability of this policy. You need to do your due diligence and convince yourself that, that roll out is not endogenous and that is, we might be concerned that the areas that implement earlier might be on a different sort of trend path than areas that implement later and we could falsely attribute to the policy what's really having to do with underlying trends across areas so.

I don't have a lot of time to talk about that. But we, we did a lot of work, trying basically sort of wrote a second paper trying to understand the determinants of, of passage of, of, of, of adoption of food stamps across counties. Looking at the political context, the economic context, the underlying characteristics of the population living in these areas.

And there's certainly, it's certainly the case that that we know that areas that adopted earlier, it's a little bit hard to, to see on this graph, tended to be Northern, urban, poor, and more minority based urban populations. And areas that, that implemented later, later were more rural, more southern, more agricultural based in terms of their economic system.

If these differences, which are significant, are sort of fixed differences across areas, we'll be okay with that. Cuz in that, in our research methodology, we can control for fixed differences across areas. It's all about whether or not these areas are on different trend paths. And so, we spent quite a lot of time trying to convince ourselves and the readers that, that indeed there, there seems to be a lot of randomness in how the applications from counties got translated and the timing of when the adoption took place.

So what I'm gonna talk about is, is some result, results that essentially use this variation across this 15 year period, across these areas. In sort of very reduced form sort of exercises, using different, some difference type comparisons, comparing areas across space and over time. And then also zeroing in to look at event-study style analysis of the same sort of information.

So in order to some of the things that we explored about the endogeneity of food stamp adoption led us to considering adding many different controls to our analysis and there's been a kind of sharing going on from many of us in the room. Martha, myself Doug exchanging the data that we have at the county level to try to make sure that our analysis of food stamps isn't contaminated by Head Start or community health centers, and so on.

It seems to be remarkably robust, and they seem to be really doing different things in different places at different times, which I think is a lot about the administrative bureaucracy of how these things were being implemented across areas. But we also explored and controlled for measures of other spending that's going on at the county level as whether, as well as in some of our richer data settings.

a rich set of state by your fixed effects which are really helpful cuz a lot of the action that's going on is at the state level, not at the county level. So that's sort of an advantage for these kinds of analyses. So you know, there's a lot this, this paper and the, the work that I've been doing fits into this much broader set of papers written by many people in this room and involved in this conference that use these kind of roll out designs for looking at the effects of these programs which have been a really rich setting for analyzing the war on poverty.

So, so now let me zero in on the topic at hand which is this evidence about how food stamps affects health. So that's the idea. I've sorta talked about what food stamps is. I've talked about the sort of right hand side variables, the policy environment which we're gonna be looking at in terms of to try to identify what food stamps does.

But now let's get to, to talking about some of the results that we have for this for this analysis. So I'm gonna start by talking about the results that we have for a contemporaneous health effect and that, and what we're gonna be looking at there is the idea is that a woman is, is pregnant and a disadvantaged woman and, and by accident of the food stamp role out some women are going to live in counties given when they're.

Pregnant and where they lived where they have exposure to a food stamp program and, and other women don't. And so we look at that variation in the exposure to a potential additional nutrition treatment and relate that to the health of the, of the baby at birth using vital statistics data.

And then I wanna go on to spend the most of my remaining time talking about, our most recent work, where we relate the same kinds of exposure to food stamps, potentially in utero, but also post nately, through early childhood. And relate exposure, and now we are thinking about the child as being exposed, as opposed to the mother.

And that we then relate the exposure to food stamps through early childhood to adult economic and health outcomes and so that's, that's sort of a game plan for moving forward. So we focus in the birth weight paper primarily on the incidence of low birth weight being below 2,500 grams as our measure of of of infant health.

And just, you know, why would we expect food stamps to affect birth weight? In earlier work, Dianne and I, in the first paper we wrote using this roll out examined how the roll out of the, of the Food Stamp Program, how exposure to food stamps affected food spending in households.

And what we what we'd identified in that paper is that food stamps, in terms of how it affects food consumption, looks very much like what we would expect if food stamps was not a voucher but also just cash income. And, you know, a very simple, you know, economic principles kind of diagram can give you some insight into that.

So what we have here is food on the x axis, and other goods on the y axis in thinking about your preferences for food versus non food. And we've got the families, the budget constraint that they faced. And what food stamps does, is shifts out the family budget constraint.

It is a new program. But what it doesn't provide for is the possibility of reaching this, I guess that's a pink triangle up there. So it's not cash. So it doesn't allow you to increase your non food spending above what your cash income can support. But if you look at this and think, well food's kind of a necessity and food stamp's really not that generous a program.

We would most reasonably expect that most folks would be sort of interior to this area. And, therefore, if we had a cash transfer instead of food stamps, at the same value, we might get a very similar result in terms of food spending, compared to what we would get in the context of a, a cash transfer.

So, one of the things that I've just been sort of trying to remind people about in the bigger context is that food stamps is an income transfer program, and it ships out the budget set and that's gonna lead to more spending on things that are desired by the household.

And a lot of that's gonna come through increases in food, and we know that, because low income individuals spend more on food. It's a big part of the spending budget. But that, you know, controlled in other areas as well. So, you know, we talk about why we would expect food stamps to affect health outcomes, and the thing that is the most direct to think about is it affects food nutrition.

But at the same time, I think it's kind of useful to step back from this and say that this paper and this research agenda might say something a little bit more generally about how income affects health. But it's absolutely the case that my policy manipulation is, is, is this food stamp program.

So, what do we find? So, using this variation across counties and over time in a sort of standard, sort of empirical setting, where we've got fixed effects for counties, fixed effects for time. These other control variables and just a dummy variable for whether food stamps is available in your county we can then convert that and, and looking at effects at the county by year level on the incidence of low birth rate.

What we find is that a \$1,000 in 2009 income leads to reduction in the incidence of low birth rate. Okay, so low birth rate is, is, is bad and it's reducing the incidence of low birth rate is an improvement in health outcomes. By about 4% for whites and 2% for blacks.

So even though our design has just the availability of food stamps on the right hand side, we can take our estimates and adjust them knowing what we do about food stamp take up in the counties to adjust the estimates which are intent to treat estimates from a regression into a treatment on the treated estimates.

So this \$1,000 is a \$1,000 of, of treatment on the treated. Some individuals who get the benefits in terms of their effects on low birth weight outcomes. And what we find is that those results stepping back a little bit, not just looking at being less than 2500 grams show that all of the gains in health occur at the bottom of the, of the, of the health distribution.

So, the lowest birth weight infants are, have better outcomes which makes a lot of sense. And when we stratify our analysis based on the county level poverty rate in 1960, we find that most of the act, the action is taking place disproportionately in the high poverty counties, which makes a lot of sense.

So, you know, we conclude from this that food stamps has an important effect on this health outcome. Which, you know, no one really thought to even look at before in terms of thinking about what the safety net does. And one of the things I'm really trying to do in my work is to move beyond what economist have often focused on, which is sort of the moral hazard of safety net programs and that's important for measuring the kind of cost, the real economic cost of providing these benefits and also thinking about to what extent are outcomes better in a society that has greater incomes at the bottom of the distribution.

That's the sort of motivation for my interest in, in this work. So for the, for the, the, the, the long-run outcomes, where we're now gonna do something very similar. Although, instead of just looking at health at birth, which is certainly a very important marker of long-term health, we wanna sort of think a little bit more broadly about how this important food and nutrition program can affect health in a broader context.

And so we're you know the the roll out everything is, is very much the same as what you've already seen but we're now gonna look at individuals who are in their 40s and early 50s, and look at their economic and health outcomes and

relate that to this knowing where they were born.

And in what kind of family there were born into, more disadvantaged, or less disadvantaged. Relate their exposure to the Food Stamp Program in early life to their adult economic and health outcomes. That, that's the idea. And given this incredibly rich roll out of the food stamp program we can, we can let the data speak about when it is that exposure to the safety net program makes a difference.

And that's kind of interesting and, and something we, we haven't had much evidence about in the context of thinking about oh, what these kinds of programs do. So I want to just spend a little bit of time talking about, you know, what is the mechanism by which we think greater exposure to food stamps and better nutrition and, and higher income in early life might lead to improvement in later life outcomes.

So there's you know, the, the, the results that we have that are the most statistically precise, have to do with the health outcomes. But we, you know, we went into this looking and having ideas that we might expect to see effects on, on both economy, there's arguments we can make, there's theory we can talk about that would, that would suggest that we would be looking for effects on both heck, economic and health outcomes.

So. You know, there's a lot of important theory and research about the importance of investments in, in early life. And the effects of those investments on later life economic outcome. So our work sort of easily fits into that context. We're thinking about the economic outcomes. With respect to the health outcomes you know, our work actually comes a little bit more to be an extension and, and motivated by the skilled origins hypothesis.

Which you know, derives much more from developmental biology and, and public health. That argues that there is an important connection and, actually this was the, the topic of the last conference that the poverty center that I was out here in this room about six months ago was very much all about these early life exposure and the effects that they, they, what we know about coming from this incredible multidisciplinary setting was really great conference,.

You know, this literature very much has this strong theory about the relationship between exposure to better nutrition and later life chronic conditions in adulthood. So, the basic storyline is as follows. I'm developing in early life, and literature is not so clear about, you know, there's a lot of work on in utero exposure but there's a little bit less clarity on when post-natally, this early life period ends.

And, the amount of data, I think, has something to say about that. But, during this early life period, the body, the, the metabolic system is being developed physiologically. And, if, in fact, the metabolic system is existing in a context where there's nutritional limitations and deprivation, the system becomes very efficient.

It's like, okay, I'm not gonna get a lot of nutrition, I'm gonna be very efficient. And that metabolic system seems to be sort of, plastic and not adjust when it, when it's kind of complete in its in its maturing, which happens in early life. If then you go out into the world and have exposure to normal nutrition and not deprivation, what happens?

Well, what happens is you experience the sweet of metabolic syndrome outcomes which is as I list up here, obesity, cardiovascular disease, high blood pressure, Type II Diabetes. And so, and interestingly, these negative consequences don't show up until later in life and as I said, it's a little bit unclear from the theory, when this early maturation period ends.

so, what does this tell us? This theory tells us about what we expect from food stamps. So, the idea is, we now provide more possibilities for nutrition in early life. Then what we expect is, in adulthood, these metabolic syndromes would have a lower incidence. So, lower obesity, lower cardiovascular disease and so on.

So, that's what we are looking for in this analysis. It's also true, and this was also a big topic at the Davis conference in the spring, is stress as a potential alternative pathway. And, and I myself have been learning a lot more from reading recent papers about the importance of stress as part of this whole process.

I'm not going to be able to get at that what exactly the mechanism is, but hopefully I can convince you that there's

something here. So, you know, there's a lot of papers that test this feudal origins hypothesis literature. And, I think what our paper just contributes to that more broadly, besides the, you know, I'm here to talk to you about food stamps, and that's what I'm talking about.

Is that, most of the literature, especially in economics is very much about really bad things, like you know, like radioactive. You know, outcomes and famines and droughts and so on. So, they tend to be really bad, negative and severe. And, what we're looking at is something positive and modest or moderate, but not extreme, right?

We're providing a new public program, and we don't have a lot of em, evidence about this. So, that's in fact, a priori unclear, whether the results that we, you know, know about from the existing literature are something that are, you know the things are non linear enough that it really has to be something really bad for this to show up.

Or, or whether a policy manipulatable thing like this can actually lead to the same kinds of, of results. So, I think we provide something a bit to the literature more broadly besides the, the important analysis of this, of this program. So, what we do is we use data from the panel study of income dynamics, which is appealing in many ways because in the latter years there's some good detailed data on health.

And, because of the longitudinal nature of the data we know about where individuals were born and what, and what kinds of families they were born into. The main downside of the data is, it's not you know, it's not I'm not Raj Teddy up here telling you about the universe of of taxpayers in the United States.

So, you know, where, I think we're pushing the data pretty, pretty far. And, I hope, and actually, Mia and I have had conversations about to what extent could we do more on the economic side, using these same kinds of designs to use some better data from administrative sources.

So, that, that's that's what we're, what we're looking at here and so we are going to be looking at cohorts of folks born in the period before starting in 1956. And after in order to have a sort of whole period of, of before and after, leading into the food stamp expansion between the mid-60s and the mid-70s.

And, these folks are still pretty young. If you do your math quickly here, you know, we're talking about folks in their early fifties at this point. So, it's very, a big caveat to our audience that only time will tell, is whether or not the results that I'm gonna show you, which are kind of large showing an improvement in metabolic outcomes, aren't themselves shifting backwards a few years in the incidence of some of these things.

And, in the long run, maybe the results, as these folks age further into the life cycle whether the results that we're finding now will, will look smaller as time passes on. And, only time will tell on that. So, our base models because we're looking at folks in adulthood, and we want to relate exposure to food stamps.

And, and we start with a kinda parametric model, where our q right hand side variable is the share of time between conception and age five. That the food stamp program was available in your county of birth. And, I'm going to then unpack that and, and to try to say something like well, can you tell me a little bit more about when exposure matters?

But, this is our starting point, and this is very much informed by the existing literature that tells us that this metabolic period is, is potentially most important in early life. Now, when we're looking at economic outcomes, it's a little bit less clear why you would wanna stop at age 5.

For example, there is some work from other contexts that, you know, better nutrition. Even like, going to school with breakfast you perform better on tests. And right, we know that these kinds of things might be much more long lasting for looking at the effects on, on the economic outcomes.

And so, well you know, we'll have something to say about that. So, we're gonna look at different measures of health outcomes. We're gonna look at those measures of metabolic syndrome. And, because we're looking at different measures of outcomes we follow an approach in the literature to combine these elements together to create and index of these different outcomes.



And so, what we do is just take averages across the five elements of a metabolic syndrome, obesity, high blood pressure, diabetes, heart disease. And take, and basically just Z score them, so subtracting out the mean in the population, and dividing by the standard deviation. And, just averaging out those outcomes for each individual, and that's what we're going to relate in our.

One regression estimates and then I'll show you the individual components. And, we do the same thing for economic self-sufficiency. Create an index of different measures of economic self-sufficiency, high school graduation, employment, et cetera participation in the safety net. So, our main estimates, we limit the sample to those who grew up in a disadvantaged household, as those would be the folks most likely to participate in food stamps.

And, we define that as being having your head of household less than a high school education which is really low today, but in that period was less low than it is today with education levels increasing. And, I should point out this is not your own education, which of course is endogenous and an outcome of interest, but your parents' education level.

So, the main results for the health outcome are as follows. This is the main regression estimates. And so what this what these results show is that going from no food stamps exposure, to full exposure through age five, leads to a reduction in the risk of metabolic syndrome by 0.3 standard deviations.

Okay, that's what that coefficient tells you. And, if we unpack that and look at the different components of that index. We could see that, and these are all just individually zero one you know, just simple linear probability models with the dependent variable being a zero one. What we can see is that the only individual component that is individually statistically significant is obesity.

So, that's the thing we seem to have the most confidence about. It also has the highest incidents of the outcomes in the population, probably not surprisingly. But, all of the signs are all the same. They're all suggesting an improvement. But they're not individually statistically significant, but when we pull them all together into this index they are.

So these are, of course, intent to treat estimates. This is just relating exposure to the program to the health outcome. So we need to scale these up by the participation rate in the program. And because we're looking at exposure over multiple years we're using a, a, a participation rate that is, do you, are you ever participating in food stamps?

And, we can use it, the, the PS ID to get a decent estimate of this over this time period, and that's about a quarter. So, you wanna think about multiplying these estimates by four. Which are really big. And I, you know, we've thought a lot about how to try to explain this.

And, what to connect it to, and there's just not that many estimates in literature to connect it to, which make it difficult. But, suffice it to say they're large if they are to be believed. Which I wanna show you some more evidence about. So, before going to the events study results, which is what I'll conclude with let's, talk about the economic setting outcomes as well.

And so, what we find for the economic outcomes is positive effects on economic outcomes. Again, in a self, self-sufficiency index that we have. But the results don't read statistical significance. If you want to look at the results category by category again, we find consistent positive effects of the program on on economic self-sufficiently, self-sufficiency.

And, some of those estimates are negative, but those are bad outcomes, so everything is pointing towards a positive effect, except employment. The only thing that's individually statistically significant is whether or not you reach high school education or more. So, overall we have less, you know, certainty about what's happening with the economic outcomes.

Interestingly, we break it out by gender, what we find is, nothing going on for the economic outcomes for men. But we do find statistically significant improvement in economic outcomes for it, for women, which is interesting, and is you know, is. There's many other studies that seem to be finding these kinds of results in very different kinds of

interventions, in terms of affects for girls and not boys.

And, I list a couple of those here. So, let me just conclude in the last few minutes with trying to, to show you some evidence about number one, are these estimates to be believed at all? And I, and I'll just do my best to show you that, that I think they, they should be and I'll tell you why.

And, number two, probably you know equally important, is there something that we can learn here where I can have, provide some evidence about when exposure matters? And so, what we do is, we relate, we take that, you know, what I have been showing you so far has the right hand side measure of the policy.

The percent of time between conception and age five that food stamps is available in your county. There's a lot more variation to use there, than just that summary measure. So, what we do is, we estimate the same model, but on the right hand side replace that one summary measure with a series of dummy variables indicating how old you were, when food stamps was implemented in your county.

And so, this is the results of that event study. So, let me just, for, for people who have seen event study diagrams before, you usually just see a zero, positive and negative years around when the event happens. The tricky thing here is, I need to time the event it doesn't matter at age one, age two, age three, I want the data to tell me that.

So, I'm showing the same kind of event study, but with a different lens. And so, here's the way you wanna read this event study. Someone out here is the results for somebody who's exposed to food stamps starting at age ten, and I, and this outcome is the metabolic syndrome, the health outcome.

As we move he to the left, we move towards cohorts that are exposed a little earlier in their childhood, at age eight, or a little earlier at age five or six, a little earlier. And what you can see is throughout this period, getting exposed to food stamps for a few more years doesn't seem to have any effect on the metabolic syndrome outcomes in adulthood.

Yet once you move to this sort of toddler and preschooler period, you find that, as you get exposed to one more year or two more years of the program, that's moving to the left, your incidence of metabolic syndrome goes down. That's good. So, as you get more exposure to food stamps, your health improves.

And then, this is sort of the, the classic pre-trend test. Once you get to the point where everybody here is fully treated. And, here we're looking at whether or not food stamps was implemented a year before you were born, or four years before you were born, or five years before you were born, it doesn't matter, which is good.

If this trend kept on going down, we'd be worrying that this was just capturing some trend across areas. So, this is really the best evidence we have that, number one, this seems pretty solidly connected to the theory, and number two, it seems to be suggesting, and you know, honestly, if I put confidence intervals on here, I'd have to increase the scale by five.

They're not precisely estimated. So, it, it is what it is. But, the qualitative results are, are quite suggestive that early childhood matters. That's kind of interesting. And, you know, it looks as though this is not just explained by trends across areas and that made us a little bit more confident about the results.

So, let me just conclude and say that, you know, here we are today, food stamps is on the chopping block. There's a lot of attention to what food stamps has been doing in the Great Recession. Has it created, I think the new term is a hack? The safety net is just a hammock.

We can all just, like, kick back in the hammock and, enjoy some food. and, what we're trying to do through a series of papers is trying to, to, quantify. What health benefits there can be from income redistribution by providing more resources to the bottom of the distribution. And, and much of these estimates, which I think this is really just the tip of the iceberg on are, are quantifying things that, you know, people hadn't really thought might be quantifiable or worth quantifying in terms of thinking about what the safety net does.

So I will leave it at that. Thank you very much. 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.

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