

What does the prior literature tell us about the potential impact of cash transfers for families with young children in the UK?



We are Nesta. The UK's innovation agency for social good.

We design, test and scale solutions to society's biggest problems. Our three missions are to give every child a fair start, help people live healthy lives and create a sustainable future where the economy works for both people and the planet.

For over 20 years, we have worked to support, encourage and inspire innovation.

We work in three roles: as an innovation partner working with frontline organisations to design and test new solutions, as a venture builder supporting new and early stage businesses and as a system shaper creating the conditions for innovation. Harnessing the rigour of science and the creativity of design, we work relentlessly to change millions of lives for the better.

Find out more at nesta.org.uk

If you'd like this publication in an alternative format such as Braille or large print please contact us at: information@nesta.org.uk

Authors

Patricia J Lucas and Simran Motiani

Click the **Nesta** logo on any page to return to the contents

Acknowledgements

We express our appreciation to those who played a vital role in backing this project. We extend special thanks to every member of the Nesta team who contributed to this review, including Stefan Kelly, Mary-Alice Doyle, Sarah Cattan, Moria Sloan and Rachael Glover. A particular acknowledgment is reserved for Jenny Gibson, whose support and advocacy were pivotal in advancing the study within Nesta.

Contents

Executive summary	4
1. Background	5
1.1 Conceptual framework	5
1.2 The gap in the existing literature	6
1.3 The review at hand	7
2. Methods, approach and activity	8
3. Results	12
3.1 Location and design of cash transfers	12
3.2 Estimating the size of effect	21
4. Conclusions	26
4.1 Strengths and limitations of this review	27
4.2 Implications of our findings	28
5. Endnotes	29
6. Appendices	37

Executive summary

- Given the relationship between family income and child development,¹ we at Nesta believe that [financial support to families](#), beginning early in a child's life, may be an important tool for closing the early attainment gap.
- This review set out to establish if there is sufficient evidence for the effectiveness of cash payments for improving outcomes in early childhood, and if that evidence is likely to apply to the UK context. Our aim in undertaking this review was to inform how we should approach research and policy, and whether there was sufficient evidence to start designing a cash-transfer trial in the UK, in line with [our mission](#) to close the early attainment gap.
- We undertook a systematised search and review for randomised controlled trials of regular payments to families in high-income countries with a child under five years old. We reviewed findings for all studies where child development, education or behavioural outcomes were reported.
- We found that the experimental evidence is limited. There are no experimental studies from the UK, and very few from other high-income countries that give us a sense of the likely impact of higher value cash transfers to families in the UK.
- A total of eight trials were identified. Of these, three were ongoing and four have no published results. The trials delivered cash transfers in different ways, some with conditions around the payment.
- Among studies with published findings, the developmental outcomes reported for children whose families received the payment before age five are, for the most part, marginally better than those in the control group. However, these differences do not reach statistical significance. In addition, as the studies all look at different outcomes at different ages, they do not allow for the calculation of an average effect across studies.
- The three ongoing studies provide the best opportunity for estimates of the effect of cash payments on child development. However, these studies are

being conducted in the USA and findings may not directly translate to the UK context.

- Based on this review, we cannot yet establish the effectiveness of cash payments for improving outcomes in early childhood. Nonetheless, Nesta will be pursuing further work to better understand and design effective interventions to tackle the link between family income and child outcomes, including analysing available non-experimental data.

1. Background

1.1 Conceptual framework

There is consistent evidence of a link between family income and early childhood development outcomes.^{1,2} But does this mean that low family income causes poorer developmental outcomes for children and, by extension, that giving low-income families more money is a good way to level the playing field?

On the one hand, this would make sense. Family poverty is thought to impact child development through family resources and family stress,³⁻⁵ as articulated by the family stress model and the investment model.^{6,7} Families living in poverty have less money to spend on the material resources that provide the foundations of good cognitive growth, such as nutritious food, educational materials or extracurricular activities. The stress and poor mental health caused by poverty may mean parents are less available to engage in the rich interactions that drive early learning.

On the other hand, those living in poorer neighbourhoods may also be less likely to have access to community assets such as libraries, green spaces or high-quality early education and care. If access to these assets is a key driver of childhood development, then providing direct cash payments to families, without investing in these community assets, may not necessarily improve child outcomes. Similarly, parents with more education, who live in wealthier neighbourhoods and have good mental health may be better able to provide a home learning environment

conducive to early learning, regardless of their income (though these parents are also more likely to be in higher paid work).

As these examples illustrate, the link between poverty and early childhood development is complex. Providing direct cash payments to families early in life is unlikely to eliminate the disparity in developmental outcomes between children living in disadvantage and their better-off peers, and other ways of improving outcomes for disadvantaged children, such as through parenting support,⁸ or the provision of quality early-years education⁹ are important. Nonetheless, it is possible that providing cash to families may reduce the gap substantially.

1.2 The gap in the existing literature

A large body of evidence tells us that money itself does make a difference for children. But does that mean that cash transfers would be an effective way to improve early childhood development and close the gap in early attainment in the UK?

Some of the strongest evidence for the effectiveness of cash transfers in improving child outcomes comes from low-income countries. Both conditional and unconditional cash transfers to families with children can reduce child mortality,¹⁰ increase school attendance,¹¹ and in the case of conditional programmes, improve cognitive and language development.¹² However, this evidence does not help to inform UK policy because of large differences in the context of these trials and the UK. For example, low-income countries have a lower average household income, and cash transfers may therefore constitute a larger percentage of household income when compared to households in the UK. Additionally, the outcomes measured in cash transfer trials in low-income countries may not be as relevant in the UK; for example, trials that measure effects on child mortality provide useful evidence in low-income countries with relatively high child mortality rates, but are less applicable in the UK where child mortality rates are low.

Focusing on higher-income settings, Cooper and Stewart (2017) reviewed research from OECD countries and concluded that the “overwhelming majority of studies find significant positive effects of income across the range of children’s outcomes, including cognitive development and school achievement, social and behavioural development and children’s health” (p27).⁴ Their review includes a mix of

experimental and observational evidence. As set out in the conceptual framework above, income itself may not be the only reason for the link between poverty and child development. Experimental studies are best able to isolate the effects of income itself.

On this basis, Lucas et al (2008) conducted a systematic review of child health, education and wellbeing outcomes associated with experiments of increasing cash payments to families living in high-income countries. They did not find significant effects, but attributed this to the low value of payments combined with strict employment conditions in many welfare experiments.¹³ Families were receiving small increases in income, some of which were conditional on taking up full-time employment.

In addition, although the review records an impact on some cognitive outcomes before age five, the majority of the outcomes assessed in both of these reviews are for school-aged children. Evidence of impact in the preschool years, a critical period of development, is less clear. Given that growth and development are most rapid and sensitive to change during infancy and early childhood, we have good reason to expect that if cash does improve child development, interventions very early in life might have particularly large effects.^{14,15}

1.3 The review at hand

In summary, given the strong relationship between family income and early childhood development, there is some reason to believe that cash transfers to families early in life may improve children's development in the UK.

In this review, we began to test this belief by building on the current evidence base for the impact of cash transfers on early developmental outcomes in high-income countries. Specifically, we systematically reviewed more recent experimental evidence of cash transfers provided in early childhood, where we expect effects to be largest. We aimed to establish an estimate of the likely effect size of cash payments on child development outcomes in the UK, if possible, and to better understand evidence gaps to inform our further work and research in this space.

2. Methods, approach and activity

In this review, we asked about the effect (assessed in randomised controlled trials) of regular cash transfers delivered to families with children under five years (including antenatally) living in high-income countries on the following outcomes:

- a) child development and early educational outcomes
- b) parental stress, distress, mental health and wellbeing
- c) parenting behaviours, parent-child interactions, and the home learning context and activities
- d) severe financial hardship.

Literature was collated by searching for relevant studies in PubMed, registers of randomised trials ([Central](#), [Social Science Registry](#), [Clinical Trials](#)), and Google (Scholar and Google Search). Structured searches were used, adapted to each source, looking for studies using terms such as 'cash or money or financial' and 'benefit or cash transfer or income guarantee, universal basic income', in their title or abstract, combined with terms for families and children¹. The search was extended by using reference lists of known reviews in the field (for example, that of Cooper and Stewart,^{4, 16-18} and through our network of internal and external experts (for example, GiveDirectly's [Cash Evidence Explorer](#)) along with the AI search tools [connectedpapers.com](#) and [Elicit.com](#).

We included studies if they were published since 2008 (the search date for a previous Cochrane Review¹⁹) in English and met the following criteria.

Population:

- undertaken in a [high-income country](#)
- at least 50% of participants (or a separately reported subsample) were families with a pregnancy or child under five. We excluded studies of children with significant existing health conditions (such as babies in NICU who had

¹ Full search details available on request

been born very prematurely) where the payment offsets healthcare or health access costs.

Intervention:

- regular (defined as a minimum of three occasions within a year) cash transfers were provided to families. We excluded one-off and emergency payments on the basis that longer term changes to income may stand to have lasting impacts on parental stress and, consequently, child outcomes, as described in the family stress model⁶
- the cash could be conditional (received when some behavioural or spending condition is met), or unconditional. We excluded studies using earned income disregards or tax credits only from our main analysis, because in these studies there is no cash transfer element for those who cannot or do not find employment. However, we summarise this evidence in Box 1.

Comparison:

- usual care or alternative interventions (such as parenting programmes).

Outcomes (primary outcomes for the review)

- We included studies that measured outcomes either as:
 - standardised measures of any of our stated key outcomes (outlined in a-d above) or
 - routinely collected records of child health, development, child welfare, or educational outcomes.
- However, we excluded studies where only health outcomes (for example, birth weight, immunisation record) were recorded given our focus on development and early education outcomes.
- Within a study, if we decided to include it, we extracted:
 - the standardised or routinely collected measures
 - changes in family income, when reported

- we recorded outcomes for children under five years of age. Sometimes this included children grouped into age bands, which included those over five as well
- outcomes are also recorded for the first post intervention follow-up period (after cash payments had ceased) when this was available.

The work of searching and screening studies for inclusion was undertaken by the first author. The authors together extracted data from the included studies, along with another member of the research team. Both authors reviewed study quality using the [Cochrane Risk of Bias \(RoB\) tool](#) for randomised controlled trials. Risk of bias assessment is a standard process in systematic reviews, allowing readers to judge not just the strength of relationship but also the strength of the evidence in each case. See section 3.2.2 for the results of our assessment.

Box 1. Evidence from randomised controlled trials of earned income disregards and tax credits

Background

In many countries, one approach to boosting the income of families who are relying on welfare payments is to encourage take up of paid employment. A common policy tool to achieve this is to allow parents to retain a higher proportion of their earned income if they take up employment. This offers an employment incentive and should, in theory, substantially boost family income if families are able to find suitable employment opportunities. In the early 1990s, these approaches were tested in a series of trials in the USA and Canada.

Population

There are four examples of this approach that are particularly relevant here, because they have reported findings for families with younger children.

Connecticut's Jobs First was tested in a study with 4,680 single parents claiming welfare in Connecticut, 60% of whom had a child under five years old.²⁰

Minnesota Family Investment Programme (MFIP) was rolled out for all long-term welfare recipients, and reports outcomes for a subgroup of 2,639 single mothers with children aged two to nine years at the time of randomisation.²¹

ABC was subject to a trial in Delaware, USA, with nearly 4,000 participants, all of whom had children and 46% had a child under five years old.²²

The Self-Sufficiency Program (SSP) was subject to a trial with all single-parent welfare recipients in New Brunswick, Canada, and reports outcomes for a subsample of 2,487 applicants of a child aged under five years at the time of randomisation.²³

Intervention

Connecticut's Jobs First (intervention period 1996-1998), MFIP (1994-1998) and ABC (1995-1997) all used an earned income disregard compared to standard welfare. All three included mandatory employment-related or training activities, although the Minnesota programme included an arm without this requirement. Each included other benefits, for example childcare subsidies, or health insurance expansion for those who took up work. However, provision was time limited, for example families could only receive ABC assistance for 48 months in total.²²

Additionally, families only received financial assistance relative to their earned income, and they were obliged to take up employment regardless of whether this resulted in a substantial overall increase in household income. For example, families in the ABC earned an additional \$446 but lost \$155 in welfare payments over the first year (an increase of just \$5 per week).²² SSP Canada (1992-1995) was more generous in providing a wage supplement (with an average increase in total income of around CAD\$120 per month over 4.5 years), but this was also contingent on taking up full time employment.²³

Findings

These studies were all included in the previous review. Across child physical health, child mental health, emotional state and behaviour, and psychomotor and cognitive development, there was no consistent significant effect. The review concluded that, "It is plausible that studies reviewed here did not offer a significant 'dose' (an intervention of larger value or longer duration)...this review has not found significant benefits associated with low-value, strictly conditional welfare reform" (p17).¹⁹ In other words, what was tested in these studies was a narrow version of earned income approaches. In studies of earned income disregards used with lone parents with young children, with strict conditions of welfare entitlement, including full-time employment and with modest income increases, no changes were observed in child outcomes. Other models may have different results.

3. Results

3.1 Location and design of cash transfers

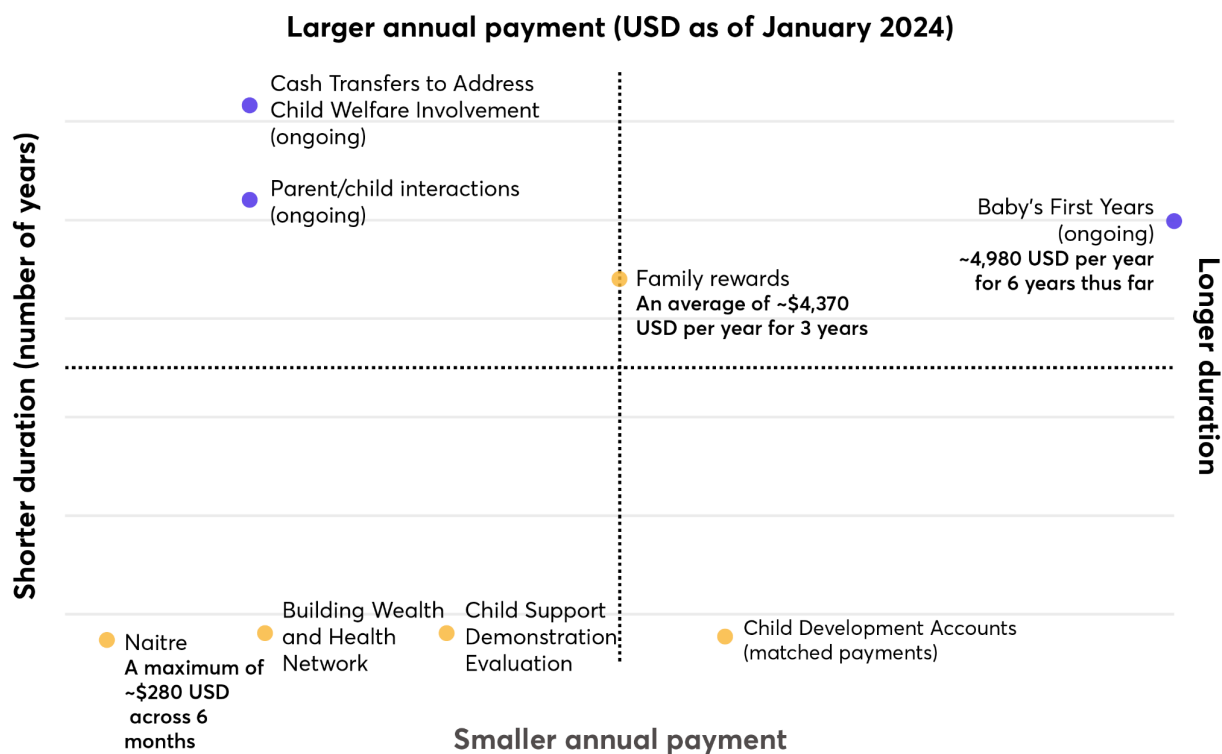
In total, while more than 2,000 titles and abstracts were screened, and over 120 articles read in full text to decide on inclusion, only eight randomised controlled trials of interest were identified and only four of these trials had published results. One study was based in France, where expectant mothers were paid to attend antenatal appointments, all others were based in the USA.

The trials delivered cash transfers in different ways, some with conditions around the payment. Four of the trials specifically enrolled families during pregnancy, at birth, or in the first few years of life to support during these developmental stages. Two trials were also open to families with older children. For the remaining two trials, the ages of children at the time of study enrolment is unclear.

Figure 1 below shows a comparison of each trial's cash payment size and duration. Table 1 describes each trial in further detail.

Figure 1. A comparison of interventions by cash payment size and duration

Conditionality of payments ● Unconditional ● Conditional



Note. Payment amounts are inconsistently reported across studies and are not directly comparable. For Naitre, Building Wealth and Health Network and Child Development Accounts, the maximum annual payment amount a family in the intervention group could receive is plotted. For Family Rewards, the maximum average annual payment a family received is plotted. For the remaining interventions, the average annual payment amount to families is plotted. All payments have been adjusted for inflation and represent the value of payments in USD as of January 2024.

Note 2. Child Development Accounts also included a payment of 1,000 USD to families in to a state owned account at the start of the intervention. Only matched payments in to family-owned savings accounts are plotted above.

Table 1. Characteristics of randomised or quasi-randomised controlled trials of cash transfers to families with young children in high-income countries (ordered by recency)

Study/intervention name	Location and participants	Intervention summary and comparison/control condition	Study timings	Availability of results
Cash Transfers to Address Child Welfare Involvement ²⁴	<p>RCT in New York State, USA. Aims to recruit 450 participants who have been assessed as eligible for alternative child protective response (in response to some form of child maltreatment).</p> <p>Ages of children when payment begins is not known, although secondary outcomes include outcomes related to childcare attendance from ages 0-5.</p>	<p>Intervention: unconditional \$500 USD monthly, totaling \$6,000 USD for the duration of the programme. Funds are disbursed via a debit card.</p> <p>Control: no direct cash transfer.</p>	2023-2024 Payments are to be disbursed for one year.	No published results available.
Parent/child Interactions ²⁵	<p>RCT in California, USA. Aims to recruit 100 households, but limited further information available as yet.</p> <p>Ages of children when payment begins is not known, although primary outcomes focus on early language development.</p>	<p>Intervention: unconditional \$400 USD monthly. Funds are disbursed via a prepaid non-reloadable electronic debit card.</p> <p>Control: not reported at this stage.</p>	Planned to be from 2022-2023 with payments disbursed for one year.	No published results available.

Study/intervention name	Location and participants	Intervention summary and comparison/control condition	Study timings	Availability of results
<p>Baby's First Years (BFY)²⁶⁻²⁹</p>	<p>RCT in USA. 1,000 mothers of newborns below the federal poverty line, across four metropolitan areas.</p> <p>Payments begin shortly after child's birth and outcomes have been collected at ages one, two, three and four, as of 2023.</p>	<p>Intervention: unconditional \$330 monthly, amounting to \$4,000 each year. Funds are disbursed via a debit card.</p> <p>Control: nominal cash monthly gift \$20. Funds are disbursed via a debit card.</p>	<p>2018~2024 Payments have been disbursed for six years so far.</p>	<p>Published results available.</p>
<p>Naitre³⁰</p>	<p>Cluster RCT in France, across 40 obstetric centres.</p> <p>Aims to recruit 4,000 pregnant women (420 clusters), but limited further information available.</p> <p>Payments begin during pregnancy at the first scheduled prenatal appointment visit after an initial inclusion visit taking place before 26 weeks of pregnancy.</p>	<p>Intervention: €30 conditional on attending monthly prenatal appointments, up to a maximum of six visits/€180. Women are given a payment card at inclusion visit, and are credited with payment after every appointment attended.</p> <p>Control: usual care.</p>	<p>2016-2019 Payments were disbursed for three years and across approximately six months for each participant.</p>	<p>No published results available.</p>

Study/intervention name	Location and participants	Intervention summary and comparison/control condition	Study timings	Availability of results
Building Wealth and Health Network (BWHN) ³¹	<p>RCT in Philadelphia, USA. 145 parents of a child under six years who have been on Temporary Assistance for Needy Families (TANF) for <u>four or fewer</u> years and are 'mandatory for work', meaning that they have no documented illness or caregiving responsibilities which might prevent them from working.</p> <p>At the time the payments began, the mean age of participants' youngest child (child under six years) was 30 months.</p>	<p>Intervention: 1:1 deposit matches of up to \$20 per month in a savings account (to encourage asset building), financial education, plus trauma-informed empowerment classes for 12 months.</p> <p>Alternative intervention: 1:1 deposit matches of up to \$20 per month in a savings account and financial education for 12 months.</p> <p>Control: usual care for TANF families plus modest study incentives.</p>	2014-2015 Payments were disbursed for seven months/28 weeks.	No published results available.
Family Rewards ^{32,33}	<p>RCT in New York City ~4,800 families.</p> <p>The intervention was targeted at families who had one child in either the 4th, 7th or 9th grade in 2007. However, a sizable number of families participating had very young children and outcomes were recorded separately for the</p>	<p>Intervention: conditional payments of varying amounts for a range of behaviours (related to health, employment and education). Payments for an activity ranged from \$20 USD per month to \$600 USD per month. On average, families received just over \$8,600 across three years. Families either received money</p>	2007-2010 Payments were disbursed for three years.	Published results available.

Study/intervention name	Location and participants	Intervention summary and comparison/control condition	Study timings	Availability of results
	youngest children, ages two to seven years old.	electronically via bank transfer or on stored value cards. Control: usual care.		
Child Development Accounts (CDA) ³⁴⁻³⁶	RCT in Oklahoma, USA. 2,704 caregiver/infants pairs. Saving accounts were open for infants two to three months after birth.	Intervention: 1) state-owned savings account of \$US1,000 opened for children at birth towards future college costs. Participants could not make deposits into this account and withdrawals would be paid directly to post-secondary institutions. 2) Opt-in participant-owned savings account with \$US100 opening incentives and matched payments for contributions to these by lower income families. Withdrawals were more easily made, and could be done for personal reasons. Control: savings accounts with associated tax benefits available to all.	2007-2011 Deposit matches in participant-owned bank accounts were made for four years (beginning of 2008 to end of 2011).	Published results available.

Study/intervention name	Location and participants	Intervention summary and comparison/control condition	Study timings	Availability of results
Child Support Demonstration Evaluation (CSD) ³⁷	<p>RCT in Wisconsin, USA. 13,529 mothers receiving welfare payments (Temporary Assistance for Needy Families; TANF).</p> <p>Ages of children in the sample when the payment began spanned between 0 and 16. 78.8% of the youngest children in families were between ages 0 and five.</p>	<p>Intervention: if mothers are receiving child support from a non-resident father, they can retain the full payment, no claw back through the welfare payments system.</p> <p>Control: mothers can retain only \$50 or 41% of payments, whichever was the greater.</p>	<p>1997-1998 The evaluation tracked families in the programme for two years.</p>	<p>Published results available.</p>

We discussed at length whether some of the interventions met inclusion criteria. The Child Support Demonstration (CSD) evaluation seemed similar to the earned income disregards in that only a subset of families benefited from it: the treatment only increased income for mothers receiving child support from non-resident fathers – around 60% of the target population. However, on balance, we considered this was not the mothers' own earned income and operated quite differently. We similarly considered whether the Child Development Accounts (CDA) should be included, since families did not receive this money immediately (it is retained until children are 18), and it is not clear how many families receive multiple payments within a year. We included it on the basis that it met our criteria and contributing to long-term financial stability is a plausible mechanism in the family investment model.⁷

The cash payments are described in brief in Table 1, and in greater detail in Table 2 (see appendix). They vary in size between \$20 and \$500 per month, but it is notable that the most recent trials in the USA are providing families with a sizable uplift in family income of \$330-500 per month, amounting to approximately 5%-8% of the annual median household income in the US as of 2022. None vary by household size, so larger households receive less money per person. Only one study (CDA) places any restrictions on spending, although Building Wealth and Health Network (BWHN) only provided funds into a savings account and Baby's First Years (BFY) labels the money provided as "4 My Baby".

BFY is a particularly important study in this field, as it will continue for several years and collects data across a wide range of child development domains. It is described in greater detail in Box 2.

Box 2

Baby's First Years (BFY)

BFY is one of the first programmes to secure funding to run a large-scale randomised control trial of monthly, unconditional cash transfers to families in a high-income country. The researchers want to fill the gap in evidence, across both neuroscience and social science literature, on the causal impact of poverty reduction measures on children's outcomes, particularly during the earliest years of brain development.³⁸

Overview of the study

The study began in May 2018, with recruitment ending in June 2019. The study recruited 1,000 mothers whose household incomes were below the federal poverty line and gave birth in an eligible hospital in one of four metropolitan areas: New York City, greater New Orleans, and Minneapolis–Saint Paul and the Omaha metropolitan areas.³⁹

The evaluation uses a mixed method design. Quantitative data collection has taken place with the entire sample. Baseline data was collected just after children were born, from May 2018 to 2019. Data collection at age one, two, three and four was completed in June 2020, June 2021, June 2022 and August 2023 respectively. Qualitative data collection has taken place with a random sample of 80 mothers from two of the four research sites, when children were 10, 19, 27 and 40 months. Mothers were interviewed about a variety of topics, which mostly focused on the meaning and experience of the cash gifts.^{39,40}

The cash transfer

All participants are mothers of newborns, with the treatment or “high cash” group receiving a generous \$330 per month.⁴¹ Initially, this monthly payment was to last for 40 months; it was then extended to 52 months. Researchers chose the cash amount for the high cash group for two reasons: 1) previous literature has linked an additional \$4,000 in annual income to better academic, employment and health outcomes; and 2) this amount resembled benefits families could qualify for, allowing the study findings to potentially have policy relevance.³⁸ The cash is disbursed via an electronic debit card, and the use of this card, together with other important implementation lessons, were explored in an early mixed methods study.⁴²

Planned outcomes

The research team comprises half-a-dozen neuroscience, economics, psychology and social policy researchers, all experts in poverty and child development.³⁸ The interdisciplinary nature of the team is reflected in the range of primary outcomes chosen for the study. Researchers have pre-registered a number of these, while also stating that these outcomes will evolve over time given the long timespan of this study. The investigators planned to assess experimental and control group differences in family expenditures, food insecurity, housing and neighbourhood quality; family routines and time use; parent stress, mental health and cognition; parenting practices; and childcare arrangements at child age two and age three, and a subset of these measures at child age one.⁴³

With the study now into its fifth year of cash transfers, some results have already been released pertaining to topics such as infant brain activity,²⁸ parental substance use,²⁹ parental employment,⁴⁴ and time and financial investment in infants.²⁷ In the coming years, Baby's First Years will also be able to evaluate the effects of extra cash since birth on early education academic outcomes.

What can we learn from this study?

Emerging results suggest that spending on household goods and child-specific goods has increased. To date, some findings suggest brain activity may have increased in the intervention group (this change was not statistically significant).²⁸ However, improvements have not been shown in child development outcomes. Parents themselves speak powerfully of the impact:

"I could have just cried because it was a total relief. Because first of all we went in the hospital flat broke. We was flat broke in the hospital." With the first payment loaded onto the card, "We got food, a lot of food. We put food in the house."²⁷

Differences in the health, education, welfare and social context in the UK means that while the learnings from this study will be valuable to understand the causal impact of cash payments, the exact findings may not translate directly to the UK context.

3.2 Estimating the size of effect

As mentioned earlier, only four of the included studies had reported outcomes of interest available to us at the time of writing: Baby's First Years (BYF), Family Rewards, CSD and CDA. While BFY has results available, these are for early outcomes (at ages one, two and three), whereas their pre-specified primary outcomes (at 36 and 48 months) are not yet available. Cash Transfers to Address Child Welfare Involvement, and Parent-Child Interactions, are ongoing and have not yet reported any findings. From these and BFY, we anticipate that more evidence will be forthcoming. Two studies are complete, Naitre and BWHN, but we did not locate any published findings.¹⁸

Although an aim of the review, it was not possible to calculate an average effect size across studies for cash payments in early childhood on any outcomes of

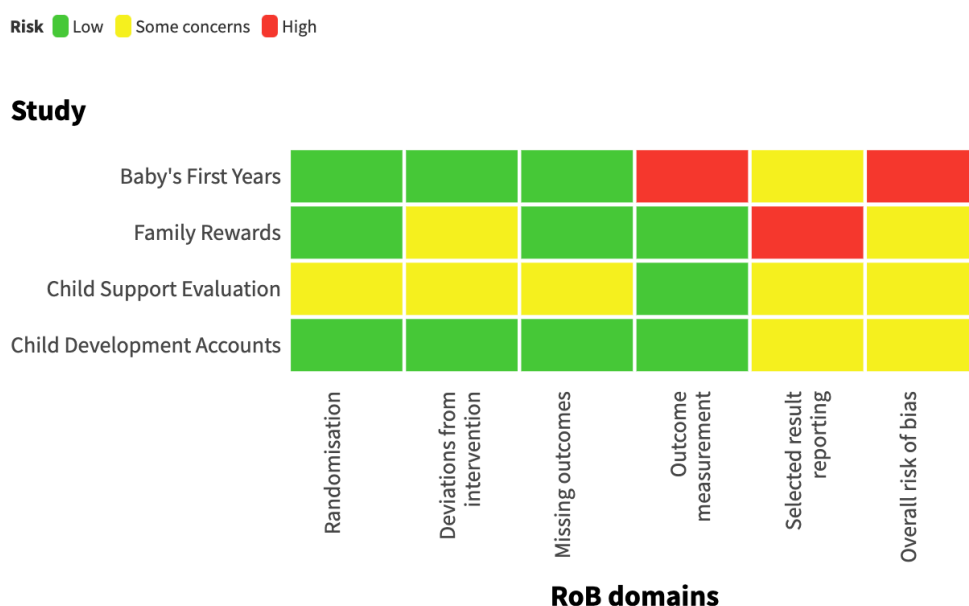
relevance. This is because the evidence from the studies we identified is insufficient – data is reported in inconsistent ways, or in insufficient detail to allow for a calculation of effect size (a mean and standard deviation for each condition or a t-value and degrees of freedom), even when outcomes of interest are reported. This is further discussed for each outcome in sections 4.2.2–4.2.5.

3.2.1 Risk of bias assessment

We assessed risk of bias for the four studies where outcome data of relevance to this review was available. For each study we judged risk of bias in the first post-intervention child education or development outcome, but in the case of BFY (which is ongoing) we chose maternal anxiety as this was assessed using a standardised measurement tool.

Our assessments are summarised in Figure 2 below and are further detailed in Table 8 in the appendix. All studies have some level of concern. This is partly because, in these studies, all participants know if they are receiving an intervention, and outcomes are often self-reported, thereby introducing possible bias to the findings. The report for CSD lacked key information needed to make a full judgement in some areas. BFY was judged to have a low risk of bias in all areas except reporting bias; this is related to the early reporting of outcomes which are not the pre-specified primary outcomes.

Figure 2. Risk of Bias (RoB) assessments for trials assessing the impact of additional income on children’s early developmental outcomes



Note: outcomes assessed include: maternal anxiety (Baby's First Years), English language abilities at year 6 (Family Rewards), child welfare system involvement (Child Support Evaluation) and socio-emotional development (Child Development Accounts).

3.2.2 Child cognitive and educational outcomes

Table 3 in the appendix provides a detailed summary of the impact of the programmes on child cognitive and educational outcomes. BFY, Family Rewards and CSD all report early cognitive or educational outcomes of interest for our review. The only outcome that was common across these studies (specifically Family Rewards and CSD) was school attendance, but it was reported differently between studies.

Only one outcome showed a statistically significant difference: CSD mothers were less likely to report that their children had missed at least 10 days of school in one of the two years in which it operated.

BFY reports infant brain activity at 12 months, and authors report higher rates of activity. However, we note that this is not a planned primary outcome; the difference was not statistically significant when adjusted for multiple analyses; infant brain activity measured is not, itself, a developmental outcome; and a single assessment of brain activity may not be sufficient to demonstrate individual differences.

Family Rewards reports proficiency in English and maths and school attendance for those aged two to seven at the time of randomisation. There were negligible differences in attendance 9-11 years post randomisation. The proportion of children reaching proficiency in both English and maths was higher in the intervention group, although this did not reach statistical significance.

While BFY does report an effect size, Family Rewards does not, and the data is not reported in a way that allows a calculation of effect size. Thus, we cannot provide an estimate of the effect of cash payments in early childhood on child cognitive and educational outcomes from this data.

3.2.3 Child health outcomes

No studies report health outcomes. However, Family Rewards, CSD and BFY all report some indicators of child healthcare use for the youngest children. These are reported in Table 4 in the appendix. The types of healthcare reported largely represent preventative care, and therefore we may assume that it is possible –

though not measured – that children receiving preventative care may have better health.

Family Rewards reports several outcomes related to healthcare use, in line with its conditional rewards for preventive health behaviours. Eighteen months after the intervention began, among children aged under five at study launch, there were slightly (but not significantly higher) proportions of children receiving a physical health examination, dental examination or having been seen by a paediatrician within the last 12 months. These were incentivised behaviours within the study. Although these behaviours changed during the period families were receiving payment, it does not look as if these changes sustained beyond the period of payment. It is also important to note that outcomes are parent-reported, when it would be more reliable and accurate to collect data from health services. The data reported does not allow calculation of effect size.

Family Rewards and CSD both report child coverage by health insurance, an important outcome in the USA context. Again, both studies use parent-report. These are reported in different ways in the different studies: Family Rewards reports the proportion of families where all children have health insurance, and CSD the number of children uninsured at any point in the last year. These are different measures and cannot be combined. Both see slightly higher, but non-significant, insurance rates in the intervention groups. Again, the data does not allow calculation of effect size.

Finally, BFY reports sleep disturbance at ages one, two and three years using a standardised tool and finds no differences between the two groups.

3.2.4 Child socio-emotional and behavioural outcomes

Only CDA so far provides a socio-emotional outcome for the youngest children. Using the Ages and Stages questionnaire at a mean age of 4.5 years, it found lower scores for children in the intervention group although this did not reach significance in their adjusted analysis. The data does not allow calculation of effect size.

However, CDA did find a significant difference (favouring intervention) for planned subgroups of more deprived mothers; those living in rented accommodation, those without a high school diploma, those with lower income or in receipt of welfare benefits. The sensitivity analyses perhaps suggest the cause of the lack of effect in

the main analysis: only 15% of parents in the treatment arm opened and contributed to a participant-owned savings account.³⁵

3.2.4 Parenting, family functioning and family stress outcomes

For the youngest children, available outcomes were: positive and punitive parenting (CDA), parenting interaction (BFY), self-report of reading to preschoolers (CSD) and child maltreatment (CSD). Of these the last is the most robust measure as it uses state records, however it will miss out-of-state records (where families moved out of state, or where concerns are recorded out of state). These findings are reported in detail in Table 6 of the appendix.

The CSD study found that children of mothers in the intervention group, who were retaining more of their child support payments, were less likely to have a child screened for maltreatment with an odds ratio of 0.89. That means that there was roughly a 10% reduction in the number of children screened for maltreatment.

3.2.5 Parent outcomes

Maternal depression and anxiety were reported in BFY one year into the study period, and four years after initial deposits were made in CDA. The CDA study found a modest, but statistically significant, reduction in maternal depressive symptoms. In contrast, BFY found no differences in depressive symptoms but a statistically significant increase in symptoms of anxiety in the high-cash group one year into the study (effect size 0.25 SD, $p=0.01$). As this study is ongoing, it is difficult to interpret this early finding but it is not the predicted direction.

Family Rewards and BFY examined impacts on maternal stress and distress, including in BFY using hair cortisol, which is a more robust way to measure long-term stress than self-report tools. Neither study found differences between intervention and control parents.

Finally, BFY examined substance use one year into the study period, which we are treating here as a parental wellbeing outcome. Examining self-reported frequency of use and self-report purchase habits for alcohol, cigarettes and opioids showed no significant differences.

BFY has reported effect sizes for relevant outcomes, but it is too early in the study lifespan for these to be definitive. These should be treated as emerging findings until the collection of planned parental mental health data is complete and analysed according to the pre-specified analysis (and potentially as modifiers of main effects on child outcomes).

All parent outcomes are provided in detail in Table 7 in the appendix.

4. Conclusions

Our review confirms that there are very few studies in the international literature that answer our question of interest regarding the effectiveness of cash payments on improving outcomes in early childhood in high-income countries. We find three studies (Child Development Accounts, Building Wealth and Health Networks and Child Support Evaluation) which have some similarities, but are not similar enough in their approach to suggest that they answer the core questions about the effectiveness of unconditional cash support provided early in life to support child development. One other study (Naitre) does provide cash, conditionally, but is focused on health outcomes and behaviours close to birth.

Baby's First Years, Parent/Child Interactions and Cash Transfers to Address Child Welfare Involvement are the most important studies to date for answering this important question, because they make sizable, unconditional monthly cash transfers to families and, in the case of Baby's First Years, they specifically target children's earliest years.

Other US-based studies we've identified since completing this review, such as The Abundant Birth Project⁴⁵ and The Bridge Project⁴⁶, also seek to answer similar research questions. However, these interventions are in early planning stages or are ongoing and we therefore do not yet have data to know the impact of these interventions on child development. Moreover, the difference in policy and social context between the UK and USA means that some caution would be needed in assuming a straightforward translation of evidence.

The evidence that has been generated from these studies does not allow us to estimate effect sizes for our outcomes of interest. Even where outcomes of interest are available, they are not reported in sufficiently consistent ways, or in sufficient detail to allow these to be calculated.

Across most of the outcomes reported here we see changes which favour the intervention group, but few which are large enough to reach statistical significance. Most are also too small to suggest a meaningful difference in people's lives. However, when we look at the details of the cash transfers, studies such as Child Support Evaluation and Family Rewards deliver quite variable amounts of money to families. If one of the mechanisms by which money might make a difference is through increased stability and reduced stress, then an intervention that cannot be relied upon may not have the same effects as one where the increase in household resources is guaranteed. This is another reason why findings from Baby's First Years and the Parent/Child Interactions Study will be so important when they emerge; these payments are both more generous and are guaranteed.

4.1 Strengths and limitations of this review

A rigorous and broad approach to searching means that we are confident we have located all the studies which met our inclusion criteria. The included studies were assessed using a high-quality risk of bias tool, and considering outcomes of most relevance for the purposes of this review. We are therefore confident in the completeness and conclusions of this review.

The review was conducted in a proportionate way. However, a single reviewer completed several stages. There were several studies on the margins of inclusions, and although we used pre-specified inclusion criteria to decide, as a team, which studies to include, the exact mechanism by which money may make a difference to early child development is debated. It is, therefore, difficult to draw the boundaries of which approaches truly fit the theoretical model. In addition, we chose to restrict our review to experimental approaches, which provide the strongest evidence for causation.

Other types of research can also be used to make causal inferences. In our efforts to explore this, we conducted a separate review of non-experimental evidence concerning cash transfers during early life in the UK. Nevertheless, as outlined in our

report '[The impact of cash transfers: Investigating how money affects children's development in the UK and other high-income countries](#)', the available evidence on the impact on early developmental and educational outcomes is limited.

As is always the case with reviews, we can only comment on what has already been: what has not been studied and what is in process cannot be included in a review. For these reasons the conclusions from reviews can feel unhelpfully narrow and ours is no exception – up to now we do not have sufficient evidence to generate accurate estimates of the size of effect from the use of cash transfers early in life on child development outcomes.

4.2 Implications of our findings

This review confirms the message from previous reviews,^{19, 4} which suggests that trials to date have not shown significant improvements for young children, even while most impacts shown are in a positive direction. The main implication is that uncertainty over the effect of cash transfers on early child development outcomes remains, and it would be useful to continue to collect or analyse data which would allow an accurate estimate of the effect of cash transfers on early child development.

For Nesta, this could mean:

- monitor and review forthcoming results of existing trials (including those from identified ongoing trials in the US, which we expect will provide insight into the effect of transfers that provide a larger uplift to families, using robust assessments of young children's developmental outcomes)
- reanalysis of existing data from previous trials
- analysing available non-experimental data (for example, exploiting 'natural experiments' such as the new policy rollouts)
- perhaps in the future, designing and carrying out a new trial in the UK, to assess the effectiveness of cash transfers on child development and related parent outcomes.

5. Endnotes

1. Cooper, K and Stewart, K (2021) 'Does household income affect children's outcomes? A systematic review of the evidence', *Child Indicators Research*, 14(3), pp 981–1005.
2. Duncan, G J, Morris, P A and Rodrigues, C (2011) 'Does money really matter? Estimating impacts of family income on young children's achievement with data from random-assignment experiments', *Developmental Psychology*, 47(5), 1263–1279.
3. Acquah, D, Sellers, R, Stock, L and Harold, G (2017) *Inter-parental conflict and outcomes for children in the contexts of poverty and economic pressure*. London: Early Intervention Foundation.
4. Cooper, K and Stewart, K (2017) *Does money affect children's outcomes? An update*. London: Centre for Analysis of Social Exclusion (CASE), LSE.
5. Batcheler, R, Ireland, E, Oppenheim, C and Rehill, J (2022) *Time for parents: the changing face of early childhood in the UK*. London: Nuffield Foundation.
6. Conger, R D, Conger, K J and Martin, M J (2010) 'Socioeconomic status, family processes, and individual development', *Journal of Marriage and the Family*, 72(3), pp 685–704.
7. Mayer, S E (1998) *What money can't buy: family income and children's life chances*. Cambridge, MA: Harvard University Press, p 230.
8. Asmussen, K, Feinstein, L, Martin, J and Chowdry, H (2016) *Foundations for life: what works to support parent-child interaction in the early years?* London: Early Intervention Foundation. Available at: <https://www.eif.org.uk/report/foundations-for-life-what-works-to-support-parent-child-interaction-in-the-early-years>

9. Melhuish, E and Gardiner, J (2020) *Study of early education and development (SEED): impact study on early education use and child outcomes up to age five years*. London: Department for Education. Available at: https://assets.publishing.service.gov.uk/media/5e4e5c10e90e074dcd5bd213/SEED_AGE_5_REPORT_FEB.pdf
10. Richterman, A, Millien, C, Bair, E F, Jerome, G, Suffrin, J C D, Behrman, J R and Thirumurthy, H (2023) 'The effects of cash transfers on adult and child mortality in low- and middle-income countries', *Nature*, 618, pp 575–582.
11. Baird, S, Ferreira, F H G, Özler, B and Woolcock, M (2014) 'Conditional, unconditional and everything in between: a systematic review of the effects of cash transfer programmes on schooling outcomes', *Journal of Development Effectiveness*, 6(1), pp 1–43.
12. de Walque, D, Fernald, L, Gertler, P and Hidrobo, M (2017) 'Cash transfers and child and adolescent development', in Bundy, D A P, De Silva, N, Horton, S, Jamison, D T and Patton, G C (eds) *Disease control priorities, third edition (volume 8): child and adolescent health and development*. Washington, DC: The World Bank, pp 325–342. Available at: <http://elibrary.worldbank.org/doi/book/10.1596/978-1-4648-0423-6> (Accessed: 22 Feb 2024).
13. Lucas, P, McIntosh, K, Petticrew, M, Roberts, H M and Shiell, A (2008) 'Financial benefits for child health and well-being in low income or socially disadvantaged families in developed world countries', *Cochrane Database of Systematic Reviews 2008 (2)*: CD006358. Available at: <http://doi.wiley.com/10.1002/14651858.CD006358.pub2> (Accessed: 12 Mar 2023).
14. Torche, F (2019) 'Early-life circumstances and their effects over the life course', *Population Research and Policy Review*, 38(6), pp 771–782.
15. Almond, D, Currie, J and Duque, V (2018) 'Childhood circumstances and adult outcomes: Act II', *Journal of Economic Literature*, 56(4), pp 1360–1446.

16. Cooper, K and Stewart, K (2013) *Does money affect children's outcomes?* York: JRF. Available at: <https://www.jrf.org.uk/report/does-money-affect-children%E2%80%99s-outcomes> (Accessed: 1 Dec 2022).
17. Pega, F, Carter, K, Blakely, T and Lucas, P J (2013) 'In-work tax credits for families and their impact on health status in adults', *The Cochrane Database of Systematic Reviews* 2013 (8): CD009963.
18. Pega, F, Pabayoy, R, Benny, C, Lee, E Y, Lhachimi, S K and Liu, S Y (2022) 'Unconditional cash transfers for reducing poverty and vulnerabilities: effect on use of health services and health outcomes in low- and middle-income countries', *Cochrane Database of Systematic Reviews* 2022 (3): CD011135. Available from: <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD011135.pub3/full> (Accessed: 6 Oct 2022).
19. Lucas, P, McIntosh, K, Petticrew, M, Roberts, H M and Shiell, A (2008) 'Financial benefits for child health and well-being in low income or socially disadvantaged families in developed world countries', *Cochrane Database of Systematic Reviews* 2008 (2): CD006358. Available from: <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD006358.pub2/full> (Accessed: 27 Feb 2023).
20. Bloom, D, Scrivener, S, Michalopoulos, C, Morris, P, Hendra, R, Adams-Ciardullo, D, Walter, J and Vargas, W (2002) *Jobs First: final report on Connecticut's welfare reform initiative*. New York, NY: MDRC. Available at: https://www.mdrc.org/sites/default/files/full_413.pdf
21. Gennetian, L A and Miller, C (2000) *Reforming welfare and rewarding work: final report on the Minnesota Family Investment Program. Volume 2: effects on children*. New York, NY: MDRC. Available at: https://www.mdrc.org/sites/default/files/reforming_welfare_and_rewarding_work_effects_on_children.pdf
22. Fein, D and Karweit, J (1997) *The ABC evaluation: the early economic impacts of Delaware's A Better Chance Welfare Reform Program*. Cambridge, MA: Abt Associates.

23. Wilk, P, Boyle, M H, Dooley, M D and Lipman, E L (2006) *The effect of the Self-Sufficiency Project on children*. Ottawa, ON: Social Research and Demonstration Corporation. Available at:
https://www.srdc.org/media/195577/wilk_et_al-2006.pdf
24. West, S (2023) *Unconditional cash transfers to address poverty as a fundamental cause of child welfare involvement* (report ID: NCT05857553). Bethesda, MD: clinicaltrials.gov. Available at:
<https://clinicaltrials.gov/study/NCT05857553> (Accessed: 1 Jan 2023).
25. Park, Y R, Kaur, S, Srinivasan, M and Hallez, K (2022) *Cash transfers and parent-child interaction* (RCT ID: AEARCTR-0007225). American Economic Association's registry for randomized controlled trials. Available at:
<https://www.aeaweb.org/doi/10.1257/rct.7225-1.1> (Accessed: 15 Feb 2023).
26. Noble, K G, Magnuson, K, Gennetian, L A, Duncan, G J, Yoshikawa, H, Fox, N A and Halpern-Meekin, S (2021) 'Baby's first years: design of a randomized controlled trial of poverty reduction in the United States', *Pediatrics*, 148(4): e2020049702.
27. Gennetian, L, Duncan, G, Fox, N, Magnuson, K, Halpern-Meekin, S, Noble, K and Yoshikawa, H (2022) *Unconditional cash and family investments in infants: evidence from a large-scale cash transfer experiment in the U.S.* (report w30379). Cambridge, MA: National Bureau of Economic Research, p w30379. Available at: <http://www.nber.org/papers/w30379.pdf> (Accessed: 10 Oct 2022).
28. Troller-Renfree, S V, Costanzo, M A, Duncan, G J, Magnuson, K, Gennetian, L A, Yoshikawa, H, Halpern-Meekin, S, Fox, N A and Noble, K G (2022) 'The impact of a poverty reduction intervention on infant brain activity', *PNAS*, 119(5): e2115649119.
29. Yoo, P Y, Duncan, G J, Magnuson, K, Fox, N A, Yoshikawa, H, Halpern-Meekin, S and Noble, K G (2022) 'Unconditional cash transfers and maternal substance use: findings from a randomized control trial of low-income mothers with infants in the U.S.', *BMC Public Health*, 22, p 897.

30. Bardou, M, Crépon, B, Bertaux, A C, Godard-Marceaux, A, Eckman-Lacroix, A, Thellier, E, Falchier, F, Deruelle, P, Doret, M, Carcopino-Tusoli, X, Schmitz, T, Barjat, T, Morin, M, Perrotin, F, Hatem, G, Deneux-Tharoux, C, Fournel, I, Laforet, L, Meunier-Beillard, N, Duflo, E, Le Ray, I and NAITRE Study Group (2017) 'NAITRE study on the impact of conditional cash transfer on poor pregnancy outcomes in underprivileged women: protocol for a nationwide pragmatic cluster-randomised superiority clinical trial in France', *BMJ Open*, 7(10): e017321.
31. Sun, J, Patel, F, Kirzner, R, Newton-Famous, N, Owens, C, Welles, S L and Chilton, M (2016) 'The Building Wealth and Health Network: methods and baseline characteristics from a randomized controlled trial for families with young children participating in temporary assistance for needy families (TANF)', *BMC Public Health*, 16, p 583.
32. Courtin, E, Muennig, P, Verma, N, Riccio, J A, Lagarde, M, Vineis, P, Kawachi, I and Avendano, M (2018) 'Conditional cash transfers and health of low-income families in the US: evaluating the family rewards experiment', *Health Affairs*, 37(3), pp 438–446.
33. Riccio, J and Miller, C (2016) *New York City's first conditional cash transfer program: what worked, what didn't*. New York, NY: MDRC.
34. Huang, J, Sherraden, M S, Sherraden, M and Johnson, L (2022) 'Experimental effects of child development accounts on financial capability of young mothers', *Journal of Family and Economic Issues*, 43, pp 36–50.
35. Huang, J, Sherraden, M, Kim, Y and Clancy, M (2014) 'Effects of child development accounts on early social-emotional development: an experimental test', *JAMA Pediatrics*, 168(3), pp 265–271.
36. Huang, J, Nam, Y, Sherraden, M and Clancy, M (2019) 'Impacts of child development accounts on parenting practices: evidence from a randomised statewide experiment', *Asia Pacific Journal of Social Work and Development*, 29(1), pp 34–47.

37. Cancian, M, Yang, M Y and Slack, K S (2013) *The effect of additional child support income on the risk of child maltreatment*. *Social Service Review*, 87(3). Available at: <https://www.journals.uchicago.edu/doi/10.1086/671929> (Accessed: 17 Feb 2023).
38. Gennetian, L, Noble, K and Swiggart, D (2022) *Behind the scenes with researchers from the Baby's First Years study*. Cambridge, MA: The Abdul Latif Jameel Poverty Action Lab (J-PAL). Available at: <https://www.povertyactionlab.org/blog/2-22-22/behind-scenes-researchers-babys-first-years-study> (Accessed: 24 Nov 2023).
39. Baby's First Years (2018) *Data and Documentation*. Baby's First Years. Available at: <https://www.babysfirstyears.com/data-and-documentation> (Accessed: 24 Nov 2023).
40. Baby's First Years (2018) *Data collection*. Baby's First Years. Available at: <https://www.babysfirstyears.com/data-collection-1> (Accessed: 26 Nov 2023).
41. Baby's First Years (2018) *About the Baby's First Years study*. Baby's First Years. Available at: <https://www.babysfirstyears.com/about> (Accessed: 24 Nov 2023).
42. Rojas, N M, Yoshikawa, H, Gennetian, L, Lemus Rangel, M, Melvin, S, Noble, K, Duncan, G and Magnuson, K (2020) 'Exploring the experiences and dynamics of an unconditional cash transfer for low-income mothers: a mixed-methods study', *Journal of Children and Poverty*, 26(1), pp 64–84.
43. Duncan, G (2023) *Household income and child development in the first three years of life* (report ID: NCT03593356). Bethesda, MD: clinicaltrials.gov. Available at: <https://clinicaltrials.gov/study/NCT03593356> (Accessed: 1 Jan 2023).
44. Sauval, M, Duncan, G, Gennetian, L A, Magnuson, K, Fox, N, Noble, K and Yoshikawa, H (2022) *Unconditional cash transfers and maternal employment: evidence from the Baby's First Years study*. Rochester, NY: SSRN. Available at: <https://papers.ssrn.com/abstract=4297310> (Accessed: 26 Nov 2023).

45. The Abundant Birth Project Evaluation Study (2024) *The Abundant Birth Project Evaluation Study*. San Francisco, CA: UCSF. Available at: <https://abundantbirtheval.ucsf.edu/> (Accessed: 16 Jan 2024).
46. The Bridge Project (2022) *The Bridge Project*. New York, NY: The Bridge Project. Available at: <https://bridgeproject.org/> (Accessed: 16 Jan 2024).
47. Meyer, D R and Cancian, M (eds) (2001) *The child support demonstration evaluation research summary, volume I: effects of the experiment*. Madison, WI: Institute for Research on Poverty, University of Wisconsin–Madison.
48. Riccio, J, Dechausay, N, Miller, C, Nuñez, S, Verma, N and Yang, E (2013) *Conditional cash transfers in New York City*. New York: MDRC. Available at: <https://www.mdrc.org/publication/conditional-cash-transfers-new-york-city>
49. Sperber, J F, Gennetian, L A, Hart, E R, Kunin-Batson, A, Magnuson, K, Duncan, G J, Yoshikawa, H, Fox, N A, Halpern-Meekin, S and Noble, K G (2023) 'Unconditional cash transfers and maternal assessments of children's health, nutrition, and sleep: a randomized clinical trial', *JAMA Network Open*, 6(9): e2335237.
50. Magnuson, K, Yoo, P, Duncan, G, Yoshikawa, H, Trang, K, Gennetian, LA, Halpern-Meekin, S, Fox, N, Noble, K (2022) 'Can a Poverty Reduction Intervention Reduce Family Stress Among Families with Infants? An Experimental Analysis', *SSRN Journal*, Available at: <http://dx.doi.org/10.2139/ssrn.4188131> (Accessed: 16 Jan 2024)
51. Roggman, L A, Cook, G A, Innocenti, M S, Jump Norman, V and Christiansen, K (2013) 'Parenting interactions with children: checklist of observations linked to outcomes (PICCOLO) in diverse ethnic groups', *Infant Mental Health Journal*, 34(4), pp 290–306.
52. Blumberg, S J, Bialostosky, K, Hamilton, W L and Briefel, R R (1999) 'The effectiveness of a short form of the Household Food Security Scale', *American Journal of Public Health*, 89(8), pp 1231–1234.
53. Huang, J, Sherraden, M and Purnell, J Q (2014) 'Impacts of child development accounts on maternal depressive symptoms: evidence from a randomized statewide policy experiment', *Social Science and Medicine*, 112, pp 30–38.

54. Radloff, L S (1977) 'The CES-D scale: a self-report depression scale for research in the general population', *Applied Psychological Measurement*, 1(3), pp 385-401. Available at: <https://journals.sagepub.com/doi/10.1177/014662167700100306> (Accessed: 28 Nov 2023).
55. Kroenke, K, Strine, T W, Spitzer, R L, Williams, J B W, Berry, J T and Mokdad, A H (2009) 'The PHQ-8 as a measure of current depression in the general population', *Journal of Affective Disorders*, 114(1-3), pp 163-173.
56. Beck, A T, Epstein, N, Brown, G and Steer, R A (1988) 'An inventory for measuring clinical anxiety: psychometric properties', *Journal Of Consulting and Clinical Psychology*, 56(6), p 893.
57. Kessler, R C, Andrews, G, Colpe, L J, Hiripi, E, Mroczek, D K, Normand, S-L T, Walters, E E and Zaslavsky, A M (2012) *Kessler Psychological Distress Scale*. Washington, DC: APA PsycTests. Available at: <http://doi.apa.org/getdoi.cfm?doi=10.1037/t08324-000> (Accessed: 28 Nov 2023).
58. Cohen, S, Kamarck, T and Mermelstein, R A (1983) 'Global measure of perceived stress', *Journal of Health and Social Behavior*, 24(4), pp 385-396.

6. Appendices

Table 2. Conditions for and value of cash transfer across randomised controlled trials of cash transfers to families with young children in high-income countries

Intervention name	Conditions for receipt	Labels, advice or other directions for spending	Value (in local currency at time of intervention)	Authors' stated rationale for cash value	Any information provided that states or allows estimation of the impact of the payment on household income or poverty levels.
Cash Transfers to Address Child Welfare Involvement ²⁴	None.	None.	\$500 USD per month.	Not published to date.	None.
Parent/child Interactions ²⁵	None.	None.	\$400 USD per month.	Not published to date.	None.
BFY ^{27,23,29}	None.	Cash was provided on a debit card labelled with a "4 My Baby" logo.	\$330 USD per month.	Authors state the amount chosen as likely to be considered scalable by government, and to impact on outcomes for families.	For a family of three, this represents a 19% increase in income at the federal poverty level (\$21,330 in 2019).

Intervention name	Conditions for receipt	Labels, advice or other directions for spending	Value (in local currency at time of intervention)	Authors' stated rationale for cash value	Any information provided that states or allows estimation of the impact of the payment on household income or poverty levels.
Naitre ³⁰	Conditional on attendance at prenatal appointments.	None.	Participants received a maximum of €180, but results not yet reported.	Cash intended to reduce barriers to low-income women attending prenatal visits.	No further details available yet.
BWHN ³¹	Families supported to open a savings account with a local credit union, and monthly deposits matched to a maximum of \$20/month for 12 months. In addition, families receive financial education classes (three hours per week) and trauma-informed self-empowerment groups (2.5 hours per week).	Money only received if cash deposited in a savings account every month.	Up to \$20/month for 12 months.	Value was set to "minimise[s] the possibility that participants exceed the TANF asset-limit of \$1000" (p5).31	None.

Intervention name	Conditions for receipt	Labels, advice or other directions for spending	Value (in local currency at time of intervention)	Authors' stated rationale for cash value	Any information provided that states or allows estimation of the impact of the payment on household income or poverty levels.
Family Rewards ^{32,33}	Families received cash rewards (paid bimonthly) for completing 22 activities across three domains: education, preventive health care, and parental Employment. For example, \$US25 per month that elementary/middle school student had attendance >95%.	None.	Variable depending on activities completed. On average, households earned \$8,674 over the three years of the programme (approx. \$241 USD /month).	Activities were meant to be achievable for families, verifiable, incentives were meant to strike a balance between being sizable and affordable.	Study authors report a significant reduction in the proportion of families at or below federal poverty line during study period (including Family Rewards payments). During year 3, 68.2% of those in the control group had an annual income at or below the federal poverty line compared to 56% of those in the programme group (p<0.001 in a 2 tailed t-test).

Intervention name	Conditions for receipt	Labels, advice or other directions for spending	Value (in local currency at time of intervention)	Authors' stated rationale for cash value	Any information provided that states or allows estimation of the impact of the payment on household income or poverty levels.
CDA ³⁵	Conditional – money in state-owned accounts can be used only for children's post-secondary education, and nonqualified withdrawals are prohibited. Opening an opt-in saving account by a deadline in 2009.	Advice – Information on how to open a CDA was given to the treatment group and correspondence (such as letters, postcards, and brochures) on behalf of the study was regularly sent to mothers in the treatment group.	All intervention group received \$1,000 in savings accounts, and \$100 conditional on opening a Child Development account. 1:1 matched savings were given to households with incomes below \$29,000, and households 0.5:1 matched savings up to a maximum of \$125 per year given to	Rationale for value of starting deposits not stated in publications to date.	Not applicable as money not available to spend.

Intervention name	Conditions for receipt	Labels, advice or other directions for spending	Value (in local currency at time of intervention)	Authors' stated rationale for cash value	Any information provided that states or allows estimation of the impact of the payment on household income or poverty levels.
			households with annual adjusted gross income of \$29,001-\$43,499. Mothers also occasionally receive small gifts (such as T-shirts and storybooks for children).		
CSD ^{37,47}	None.	None.	Variable according to child support received. On average, mothers in the intervention group received a total of \$US265 more in child support than	Not within control of the study, the amount varies according to non-resident parent income.	Given the size of households in the study, we estimate this represents about £5 per child per month on average, and about \$6 per child per month among households

Intervention name	Conditions for receipt	Labels, advice or other directions for spending	Value (in local currency at time of intervention)	Authors' stated rationale for cash value	Any information provided that states or allows estimation of the impact of the payment on household income or poverty levels.
			<p>mothers in the control group over two years. Slightly more mothers in the intervention group received any child support (48% vs 45% in year 2). Total annual income was, on average \$US160 (or \$13/month) among intervention mothers.</p>		<p>who received any child support.</p>

Table 3. Child cognitive and educational outcomes

Domain	Study ID	Measure	Child age at Assessment follow up period	Result
Cognitive development	Baby's First Years ²⁸	Infant brain activity.	One year. During intervention period.	<p>Infants whose mothers were in the high cash group showed more brain activity (greater mid-to-high frequency absolute EEG power in the alpha-bands, beta-bands, and gamma-bands), compared with infants whose mothers were in the control group.</p> <p>However, these differences were not statistically significant when adjusted for baseline covariates and multiple comparisons.</p>

Domain	Study ID	Measure	Child age at Assessment follow up period	Result
Educational attainment	Family rewards ³³	Both average score on standardised English test and % judged proficient reported.	8-11 years (2-7 years at time of randomisation). Six years post randomisation.	A significantly higher proportion of intervention children reached proficiency level in English (18.1% compared to 12.8%, an adjusted difference of 5.3% p<0.05). Although the mean score difference was not significant.
		Both average score on standardised maths test and % judged proficient reported.	8-11 years (2-7 years at time of randomisation). Six years post randomisation.	A higher proportion of intervention children reached proficiency level in maths and this difference approached significance (18.1% compared to 12.8%, an adjusted difference of 5.3% p=0.06). The mean

Domain	Study ID	Measure	Child age at Assessment follow up period	Result
				score difference was not significant.
Special education	Child support demonstration evaluation ⁴⁷	Maternal report of child receiving special educational services.	6-11 years. During intervention.	In 1998, 23.1% of children received special education services, and in 199 22.4%. Differences from the control group were small and non-significant.
School attendance	Family rewards ³³	Both average attendance and % with attendance > 95% are reported.	8-11 years (2-7 years at time of randomisation). Six years post randomisation.	Average attendance in intervention group was 85.8% compared to 85.1% in the control group, and no significant difference were seen in average or high attendance rates.

Domain	Study ID	Measure	Child age at Assessment follow up period	Result
	Child support demonstration evaluation ⁴⁷	Maternal report that child missed 10+ days of school.*	6-12 years. During intervention.	In 1998 8.4% of mothers reported their child missed 10 or more school days compared to 16% of control mothers and this difference was statistically significant (n=631, p=0.004). In 1999 there was a small and non-significant difference; 10% in experimental and 11.4% in control.

Table 4. Child health outcomes

Domain	Study ID	Measure	Child age at assessment follow-up period	Result
Health promotion activities	Family Rewards ⁴⁸	% of children with a physical health examination within 12 months (parent report).**	< 8.5 years. 3.5 years post randomisation.	Rate in intervention group 97.9%, in control 97.2%, not significant. This is a subgroup analysis (n=456).
		% of children with a dental examination within 12 months (parent report).**	< 8.5 years. 3.5 years post randomisation.	Rate in intervention group 59.2%, in control 57%, not significant. This is a subgroup analysis (n=456).
		% of children received a screening (as recommended by a paediatrician (within 12 months) (parent report).**	< 8.5 years. 3.5 years post randomisation.	Rate in intervention group 30.4%, in control 25.6%, not significant. This is a subgroup analysis (n=456).

Domain	Study ID	Measure	Child age at assessment follow-up period	Result
Health Insurance	Family Rewards ³²	% of families where all children covered by health insurance in the last month (parent report).	Mixed age. 3.5 years post randomisation.	Rate in the intervention group was 95.3, this was not significantly higher than the control group (Adjusted difference 1.4% CI -0.8-3.6%), although during the period of the intervention the rate was significantly higher (1.9% difference).
	Child Support Demonstration Evaluation ⁴⁷	Maternal self report that their child* was uninsured at some point in the last year.	0-5 years (subgroup). During intervention period.	In 1998 14.2% of children were uninsured at some point, 1.5% lower than in the control group. In 1999 this was 15.7% in the intervention group, 3.8% lower than in the control group. Neither difference were significant.

Domain	Study ID	Measure	Child age at assessment follow-up period	Result
Sleep disturbances	Baby's First Years ⁴⁹	PROMIS Sleep Disturbance-Short Form.	Ages one, two and three. During intervention period.	No significant differences observed.

*Mothers were asked to answer survey questions about just one of their children.

**These outcomes are available from health records during the intervention period, but as these were conditional activities we report here the post-intervention measure.

Table 5. Child socio-emotional and behavioural outcomes

Domain	Study ID	Measure	Child age at assessment follow-up period	Result
Behavioural outcomes	Child Development Accounts ³⁵	Social-emotional items from Ages & Stages ⁴⁸	Mean age 4.5 years.	Treatment group had lower scores (indicating fewer behavioural problems) but not significant in the weighted analysis (after accounting for selection bias). However, this difference was significant in weighted analysis of planned subgroups of mothers living in rented accommodation, without a high school diploma, receiving welfare benefits and with a lower income.

Table 6. Parenting, family functioning and child maltreatment outcomes

Domain	Study ID	Measure	Child age at assessment follow-up period	Result
Child maltreatment	Child support demonstration evaluation ³⁷	Record (in state child protection system) of child subject to a screened-in report for child maltreatment.	Whole sample, so age not known, 60% of mothers had a child under three years. During intervention period.	Children of mothers in the experimental group were less likely to have a child subject to a screened for maltreatment (odds ratio = 0.888, $p < 0.05$).
Parenting	Child Development Accounts ³⁶	Positive and punitive parenting practices assessed using a self-report tool.	Four years.	Some evidence of a modest effect of reduced punitive parenting practices, no effect on positive parenting.
Parenting quality	Baby's First Years ⁵⁰	Parenting interactions with children: checklist of observations linked to outcomes. ⁵¹	During intervention (approximately 12 months post baseline).	No significant differences.

Domain	Study ID	Measure	Child age at assessment follow-up period	Result
	Child support demonstration evaluation ⁴⁷	Maternal self-report of reading to preschool child daily.	0-5 years. During intervention period.	In 1998, 48.4% of mothers in the experimental group, 2.6% fewer than in the control. In 1999, 52.7% in the experimental group, 5.5% fewer than in the control group. Neither difference was significant.
Economic pressure	Baby's First Years ⁵⁰	Food insecurity index – additive index of five items from the US Department of Agriculture's short-form measure of food insecurity. ⁵²	During intervention period (approximately 12 months post baseline).	The impact of the treatment on food insecurity is positive, but not statistically significant after adjustment for multiple hypothesis testing (Westfall and Young adjustment), ITT estimate covariate adj. = 0.23, p (adjusted)= .15, p (unadjusted)=05, ES=.14.

Table 7. Parent outcomes

Domain	Study ID	Measure	Follow up period	Result
Maternal depression	Child Development Accounts ⁵³	Maternal depression (Center for Epidemiologic Studies Depression Scale ⁵⁴).	Four years.	Mothers in the treatment group had significantly lower scores (1.83 vs 1.99, indicating less depression). The effect was small, but greater for lower income and lower education subgroups.
	Baby's First Years ⁵⁰	Maternal depression (Personal Health Questionnaire Depression Scale PHQ-8 ⁵⁵).	During intervention (approximately 12 months post baseline).	No statistically significant differences (3.91 vs 3.71, ES=0.1).
Maternal anxiety	Baby's First Years ⁵⁰	Maternal anxiety (Beck Anxiety Inventory ⁵⁶).	During intervention (approximately 12 months post baseline).	Mothers in the high cash group had significantly higher levels of maternal anxiety (5.94) when compared with the low-cash group (4.58), p

Domain	Study ID	Measure	Follow up period	Result
				(adjusted)= 0.01, ES=.025 SD, N= 930.
Maternal stress/distress	Family Rewards ³²	State of hope scale, average score.	During intervention period (18 months post baselined).	No significant differences (and very similar scores).
	Family Rewards ³²	Kessler Psychological distress scales (57), both average score and % experience serious distress reported.	During intervention period (18 months post baselined).	No significant differences (and very similar scores) on both measures.
	Baby's First Years ⁵⁰	Physiological stress (Ln Hair Cortisol) Perceived Stress Scale. ⁵⁸	During intervention (approximately 12 months post baseline).	No statistically significant differences. (Ln Hair cortisol 1.89 vs 1.73 ES=0.02; PSS 11.39 vs 10.82, ES=0.1).
Substance use	Baby's First Years ²⁹	Maternal alcohol use, cigarette use, and opioid use. Self-reported frequency scores.	During intervention period (approximately 12 months post baseline).	No statistically significant differences.

Domain	Study ID	Measure	Follow up period	Result
		Spending estimated from maternal report household weekly purchases of alcoholic beverages and cigarettes.	During intervention period (approximately 12 months post baseline).	No statistically significant differences.

Table 8. Table showing results of risk of bias assessments including rationale for identified sources of bias

Study	Outcome	RoB domains/ sources of bias	Assessed level of risk	Rationale
Baby's First Years ²⁶	Maternal anxiety	Measurement of outcomes.	High	Participants in the intervention group were most likely aware that they were receiving the intervention and a self-report measure of maternal anxiety was used.
	7	Selected reporting of results.	Some concerns	Early reporting of outcomes.
Family Rewards ³²	English Language abilities at Year 6	Deviation from intended intervention.	Some concerns	Slower-than-expected recruitment resulted in the programme beginning with half the sample. It is therefore unclear if the entirety of the intervention group received the intervention for the same duration of time.
		Selected reporting of results.	High	Multiple domains of outcomes and time points are reported in the main report, and no primary outcomes or primary outcome points are pre-specified.
Child Support Evaluation ³⁷	Child welfare system involvement	Randomisation.	Some concerns	Researchers used mother's social security numbers (SSN) to assign participants to intervention or control groups. There are some concerns that, prior to 2011, SSNs were not assigned at random and that using them to assign to groups therefore introduces some bias (which may be observed in the difference in older maternal age in the intervention group).

Study	Outcome	RoB domains/ sources of bias	Assessed level of risk	Rationale
		Deviation from intended intervention.	Some concerns	Parents were aware they were receiving the intervention, and may have behaved differently as a result of knowing their child support was more likely to reach their child or be retained by the state. Bias may also introduced for other outcome measures that use self-report instead of routinely collected data.
		Missing outcomes.	Some concerns	Researchers acknowledge that it is impossible to know whether some participants moved out of state and that any concerns recorded out of state would not be recorded. Thus, we cannot know how much the sample is affected by movements out of state, or by records of the outcome of interest not held within the state.
		Selected reporting of results.	Some concerns	Some outcomes are reported for each year rather than across the two years of intervention.
Child Development Accounts ³⁵	Socioemotional development	Selected reporting of results.	Some concerns	It is unclear as to whether the outcome at hand was part of a pre-specified analysis plan.

58 Victoria Embankment
London EC4Y 0DS
+44 (0)20 7438 2500
information@nesta.org.uk
X @nesta_uk
f nesta.uk
www.nesta.org.uk
ISBN: 978-1-916699-19-9

Nesta is a registered charity in England and Wales with company number 7706036 and charity number 1144091. Registered as a charity in Scotland number SCO42833.
Registered office: 58 Victoria Embankment, London EC4Y 0DS.

