



**CENTER FOR THE ECONOMICS  
OF HUMAN DEVELOPMENT**  
The University of Chicago

# *Lifetime Benefits from Investments in High-Quality Early Childhood Education*

*Early Childhood Education: Partnering Up to Amplify Impact Webinar*

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Center for the Economics of Human Development*

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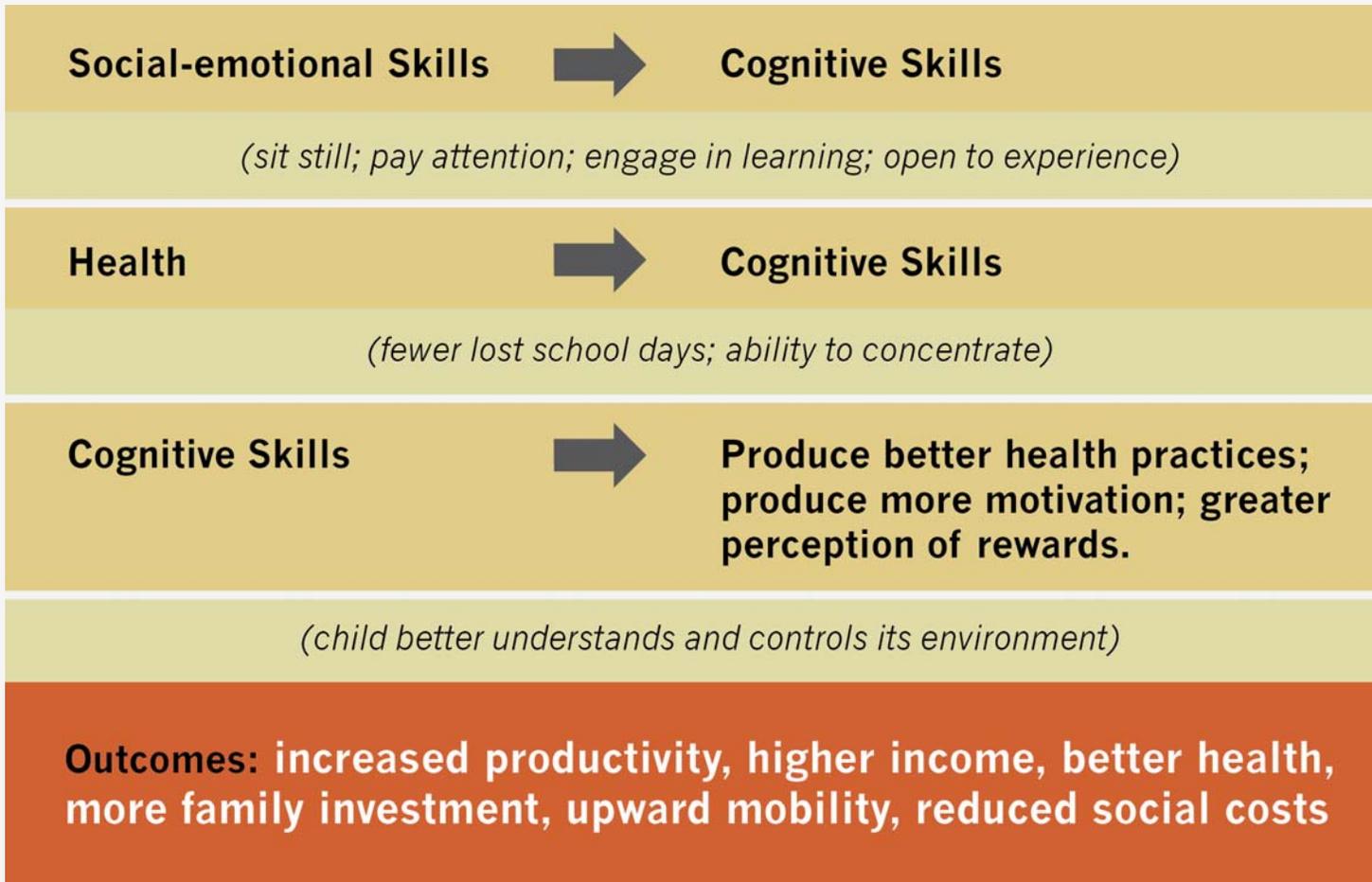
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ABC/CARE was a center-based early childhood program that started at birth and operated in accordance to the developmental science of skill begetting skill.



# Dynamics of Skill Formation



# Follows up analysis of the health benefits of the Abecedarian/ CARE programs at age 35

Campbell, Frances, Gabriella Conti, James J. Heckman, Seong Hyeok Moon, Rodrigo Pinto, Elizabeth Pungello, and Yi Pan. "Early childhood investments substantially boost adult health." *Science* 343, no. 6178 (2014): 1478-1485.



Quantifies the economic gains of child care and adult health outcomes along with education, employment and sociability.

García, Jorge Luis, James J. Heckman, Duncan Ermini Leaf, and María José Prados. *Quantifying the life-cycle benefits of a prototypical early childhood program*. No. w23479. National Bureau of Economic Research, 2017.



**Table 1: Auxiliary Data Sources for Interpolation and Extrapolation of Life-cycle Benefits and Costs**

	Subject's Age					
	16-20	21-30	31-34	35-50	51-67	68-Death
Labor Income		CNLSY	NLSY79; PSID			
Welfare		CNLSY	NLSY79; PSID			
Health	PSID; MEPS; MCBS; HRS					
Crime	NCDPS; NJRP; NVS; UCRS					



High-quality, birth-to-five programs for disadvantaged children deliver a **13% per year return on investment**—substantially higher than the 7-10% return previously established for preschool programs.



# Quality child care and early learning matters

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# Child care services

- The program provided child care for more than nine hours per day, five days a week, 50 weeks a year for five years.
- The quality, duration and reliability of care provided parents with the means and confidence to enter into the job market.



# Early learning services

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- Curriculum focused on developing the whole child with a wide range of social-emotional and cognitive skills.



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- Curriculum focused on developing the whole child with a wide range of social-emotional and cognitive skills.
- Program was administered by professionals trained in early childhood development.
- Program helped children transition into formal schooling in grades K-3.



# Early learning outcomes

- NO COGNITIVE FADE OUT: Starting at birth and continuing to age five produced permanent gains in IQ and social-emotional skills—unlike any preschool program.



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- Children had significantly better life outcomes than those who didn't receive center-based care or those who received lower quality care.
- Females saw positive effects on years of education, high school graduation, adult employment and income and parental income—results higher than the alternative of staying at home.
- Males had higher education, health, employment and income outcomes; lower adult hypertension, blood pressure and drug use—even when compared to alternative child care centers. Low-quality care has negative effects for males.



# Early health makes a big difference

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# Children received



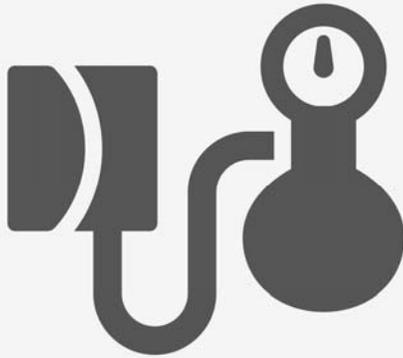
two meals and an afternoon snack at the center and were offered periodic medical check-ups, screenings and follow-up care.



# Early health services

- Nutrition was a key component to the health approach—children received healthy meals and snacks while in the center.
- Children had access to a doctor and nurse on staff at the center. Two nurses provided on-site coverage, one doctor came in for screenings.
- Children were given periodic screenings for physical health and developmental milestones.
- Identified health and developmental problems were referred to outside medical care—most likely publicly-provided or supported health care.
- Staff doctor and nurses coordinated the continuity of care and worked with the children and parents to ensure compliance with doctor's orders.





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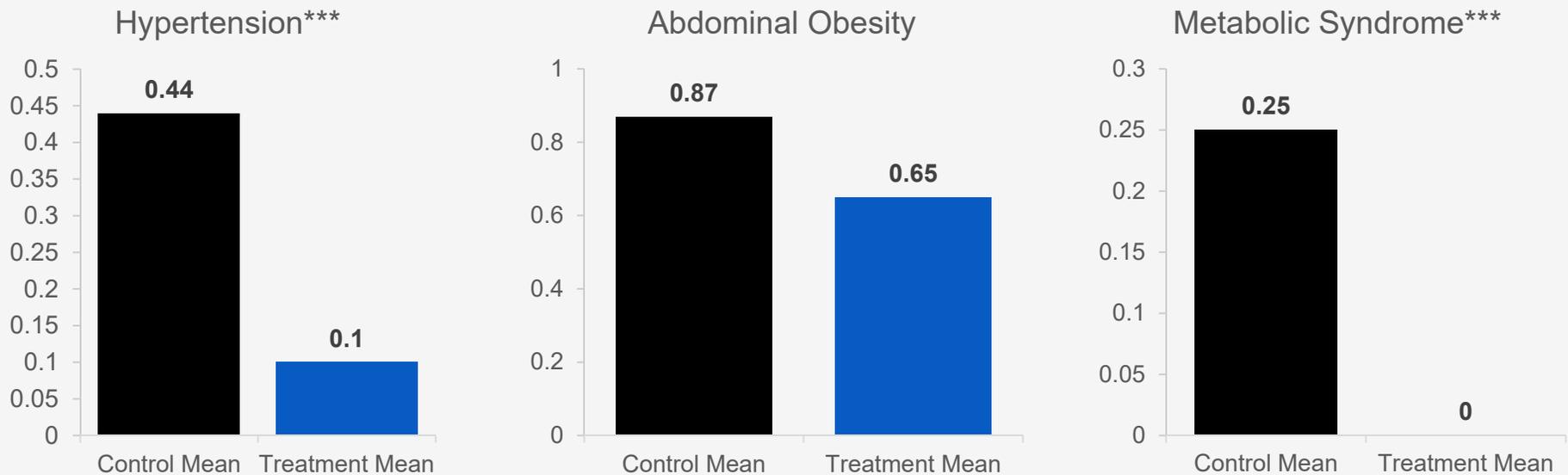
# Health effects of Abecedarian intervention at age 35

	Treatment Mean	Control Mean	Treatment p-value
Systolic Blood Pressure	125.79	143.33	0.018
Diastolic Blood Pressure	78.53	92.00	0.024
Pre-Hypertension	0.68	0.78	0.235
Hypertension	0.10	0.44	0.011
HDL Cholesterol	53.21	42.00	0.067
Cholesterol/HDL-C	3.89	4.69	0.057
Abdominal Obesity	0.65	0.87	0.136
Metabolic Syndrome	0.00	0.25	0.009

Source: Campbell, Conti, Heckman, Moon, Pinto and Pungello (2012)



# Abecedarian Project showed health benefits at age 35



Note: \*\*\* Significant treatment effects ( $p \leq .01$ ).  
Significant treatment effects for Systolic Blood Pressure and Diastolic Blood Pressure ( $p \leq .05$ ).

Source: Campbell et. al (2014)

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# Health outcomes confirmed

- Better physical health from childhood through adulthood, particularly in fighting unhealthy behaviors and obesity.
- Females were less likely to start drinking at an early age; more likely to engage in physical activity and eating nutritious foods; and less likely to fall into pre-hypertension.
- Males had significantly higher levels of “good” HDL cholesterol and none of them had metabolic syndrome—hypertension, central obesity and dyslipidemia—while the prevalence in the control group was 25%.



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- Males had significantly higher levels of “good” HDL cholesterol and none of them had metabolic syndrome—hypertension, central obesity and dyslipidemia—while the prevalence in the control group was 25%.
- These outcomes are attributed to early health, nutrition and learning—they had a healthy foundation that advanced the building of cognitive and social-emotional skills that empowered them to build healthy lives as adolescents and adults.



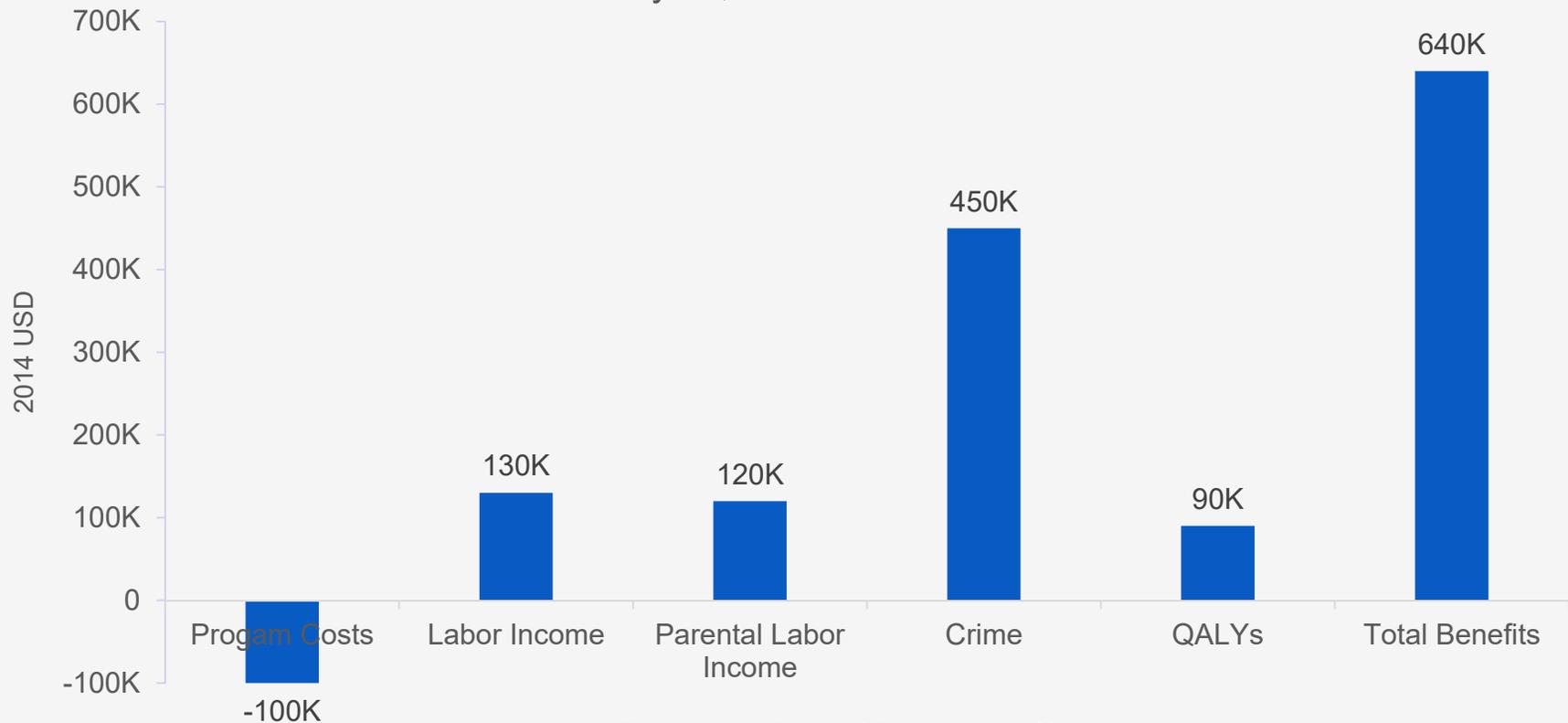
# What it means

- These long-term health benefits, first shared in the 2014 Abecedarian analysis, have now been quantified—the 13% ROI figure includes the long-term cost benefits that come from a comprehensive, high-quality program.



# ABC/CARE Rate of Return Over the Lifecycle

Net Present Value of the Main Components of the Cost-Benefit Analysis Over the Lifecycle, Treatment vs. Next Best



Per-annum Rate of Return: 13.7%  
Benefit-cost Ratio: 7.3

Source: Garcia et. al (2016)

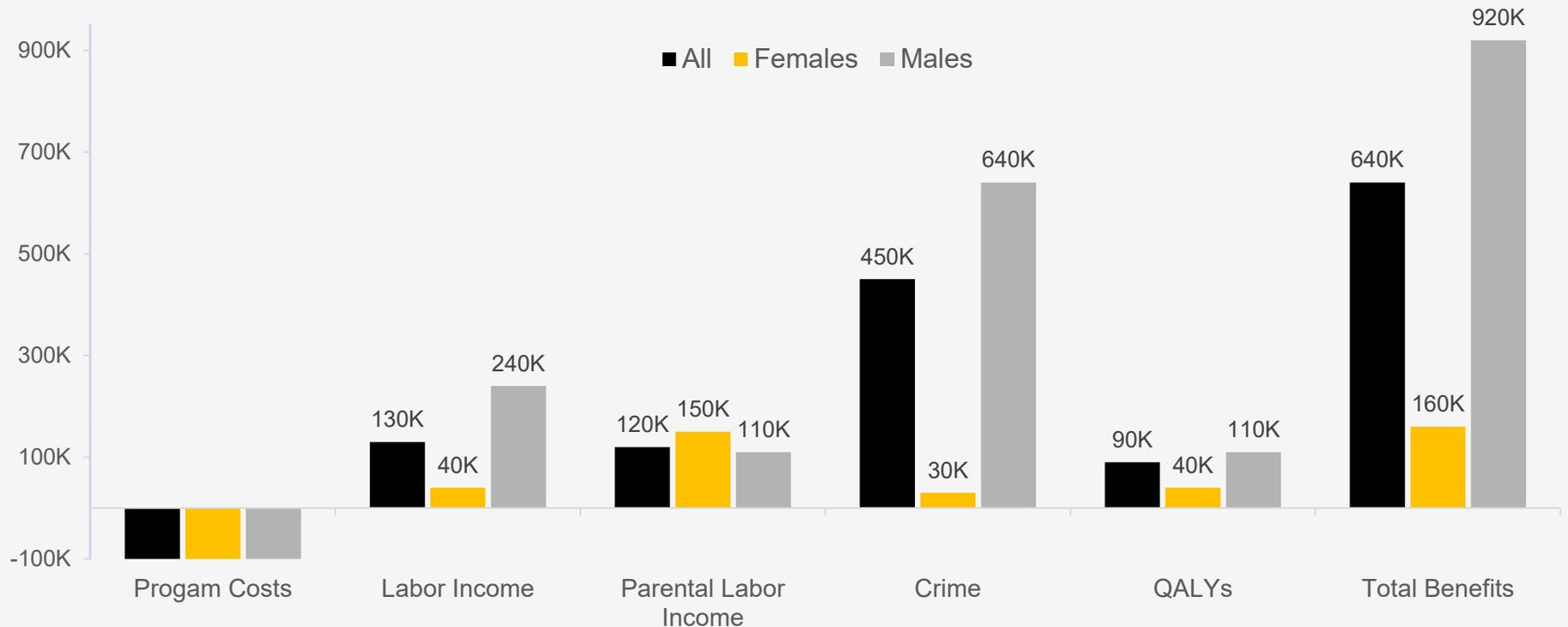


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# ABC/CARE Rate of Return Over the Lifecycle

Net Present Value of the Main Components of the Cost-Benefit Analysis Over the Lifecycle, Treatment vs. Next Best, By Gender



Per-annum Rate of Return: Males and Females 13.7%; Males 14.6%; Females 10%  
 Benefit-cost Ratio: Males and Females 7.3; Males 10.2; Females 2.6



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Source: Garcia et. al (2016)



# What it means

- These long-term health benefits, first shared in the 2014 Abecedarian analysis, have now been quantified—the 13% ROI figure includes the long-term cost benefits that come from a comprehensive, high-quality program.
- Early health services are essential for preventing later adult chronic disease and promoting better health and healthier lifestyles in childhood and throughout adulthood.



# What it means

- These long-term health benefits, first shared in the 2014 Abecedarian analysis, have now been quantified—the 13% ROI figure includes the long-term cost benefits that come from a comprehensive, high-quality program.
- Early health services are essential for preventing later adult chronic disease and promoting better health and healthier lifestyles in childhood and throughout adulthood.
- Cutting early health services will likely lead to more costly health conditions later in life, beginning as early as age 35.



# What it means

- Invest in high-quality child care for low-income families.
- Attaching quality to child care provides two generations of benefits—it helps parents grow their income and children grow smarter.



# Child care outcomes

- Mothers entered the workforce, gained skills and increased their earnings and financial independence.
- Children received foundational skills that made them more productive in the future workforce.
- Increases in parental income alone paid for the cost of the entire program after just five years.



# What it means

- Invest in high-quality child care for low-income families.
- Attaching quality to child care provides two generations of benefits—it helps parents grow their income and children grow smarter.
- Simply providing access to child care without early health and learning is a missed opportunity to promote upward mobility in two generations.
- Investing in high-quality child care quickly pays for itself in income gains among parents.



# What it means

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- Quality early learning is essential for building skills that enable greater achievement and health.
- Policymakers who invest in high-quality early learning programs from birth can permanently boost IQ and social-emotional skills that create productive, independent adults.
- Child care functions as early learning in the real world—child care without high-quality learning is a huge missed opportunity.
- Low-quality child care can be harmful to children, particularly males.



# Conclusions

- A scaffolding of support for low-income children from birth-to-five produces better outcomes for children and greater economic benefits to society than investing in any one element.



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- Early health care as an input is key to producing better health in adults—the savings from preventing expensive chronic diseases in adulthood more than justify the cost of investment. These have now been fully quantified in the new ROI.
- Child care has a two generation effect when combined with quality early learning: mothers grow their income while children gain the skills to succeed in school and life.



# Recommendations

- Preschool is too little too late for low-income children—we gain the most benefits when we invest from birth to age five in comprehensive, quality services.



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- Quality pays off for children and supports families: The cost of this comprehensive approach pays for itself within five years because families have high-quality child care and can confidently go back to work.



# Recommendations

- Preschool is too little too late for low-income children—we gain the most benefits when we invest from birth to age five in comprehensive, quality services.
- Quality pays off for children and supports families: The cost of this comprehensive approach pays for itself within five years because families have high-quality child care and can confidently go back to work.
- Policymakers should recognize the returns in health, nutrition, child care and early learning programs for low-income families—they should invest more and bring these resources into alignment from birth to age five. Doing so will increase achievement and upward mobility while reducing health care costs and social spending.



# Thank you.



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