

A Science-Based Framework for Early Childhood Policy

Katherine Magnuson, PH.D., Assistant Professor of Social Work

UNIVERSITY OF WISCONSIN-MADISON

MEMBER, NATIONAL FORUM ON EARLY CHILDHOOD PROGRAM EVALUATION

First 5 California Children and Families Commission

July 15, 2009

Center on the Developing Child  HARVARD UNIVERSITY

NATIONAL SCIENTIFIC COUNCIL ON THE DEVELOPING CHILD

NATIONAL FORUM ON EARLY CHILDHOOD PROGRAM EVALUATION



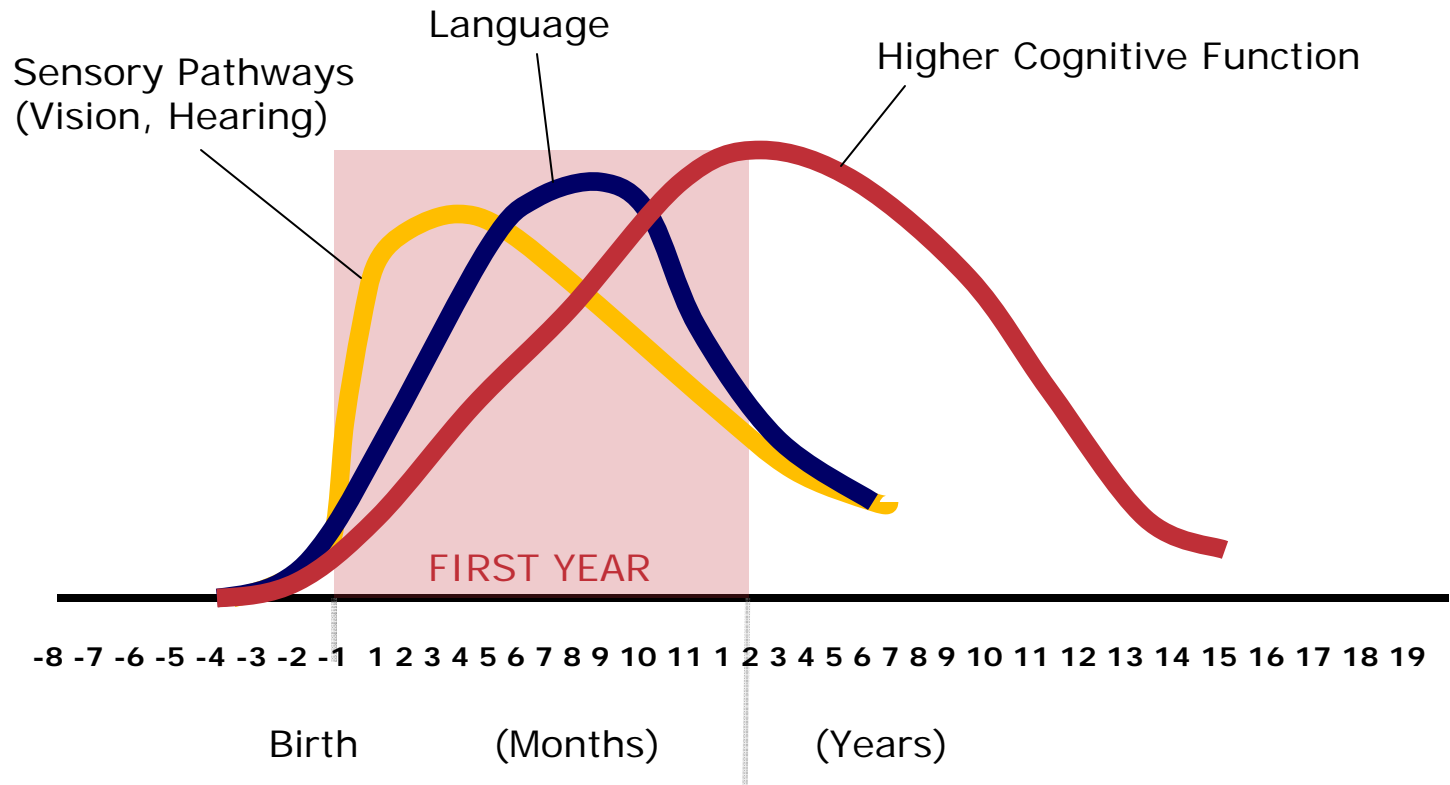
THE UNIVERSITY
of
WISCONSIN
MADISON

Decades of Science from Many Disciplines All Point to the Same Conclusion

The healthy development of children provides a strong foundation for healthy and competent adulthood, responsible citizenship, economic productivity, strong communities, and a sustainable society.

Neural Circuits are Wired in a Bottom-Up Sequence

(700 synapses per second in the early years)



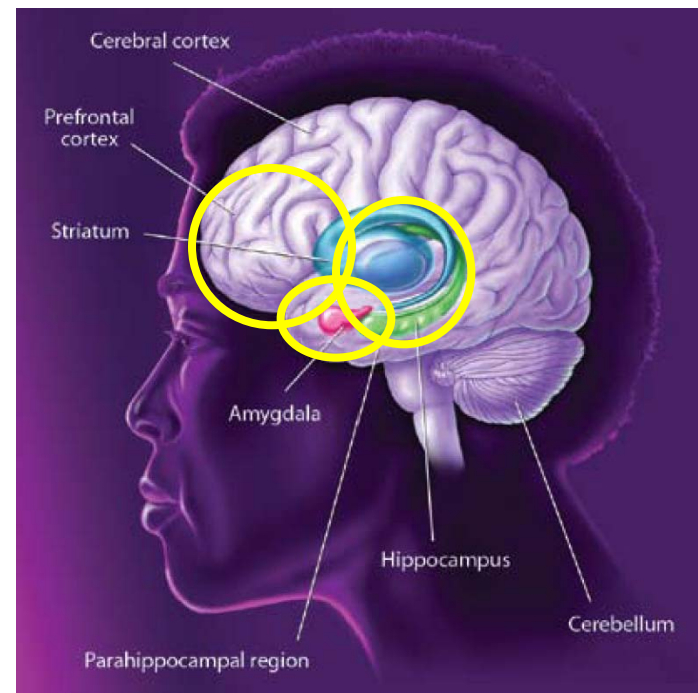
Brains and Skills Are Shaped by the “Serve and Return” Nature of Human Interaction



Cognitive, Emotional, and Social Capacities Are Inextricably Intertwined Within the Architecture of the Brain

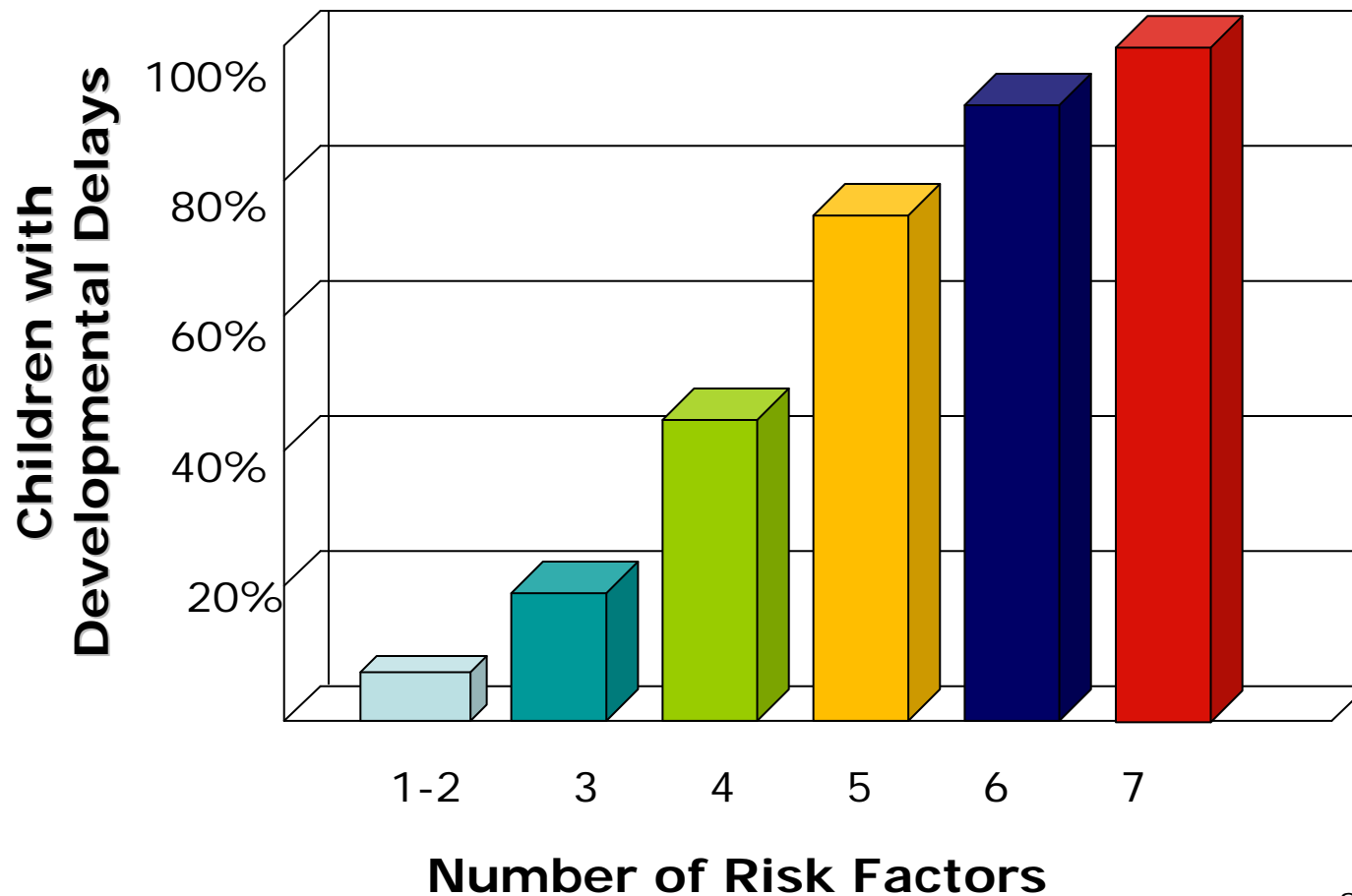
Learning, behavior, and health are inter-related throughout the life cycle.

No single area of function develops independently—*you can't do one without the other!*

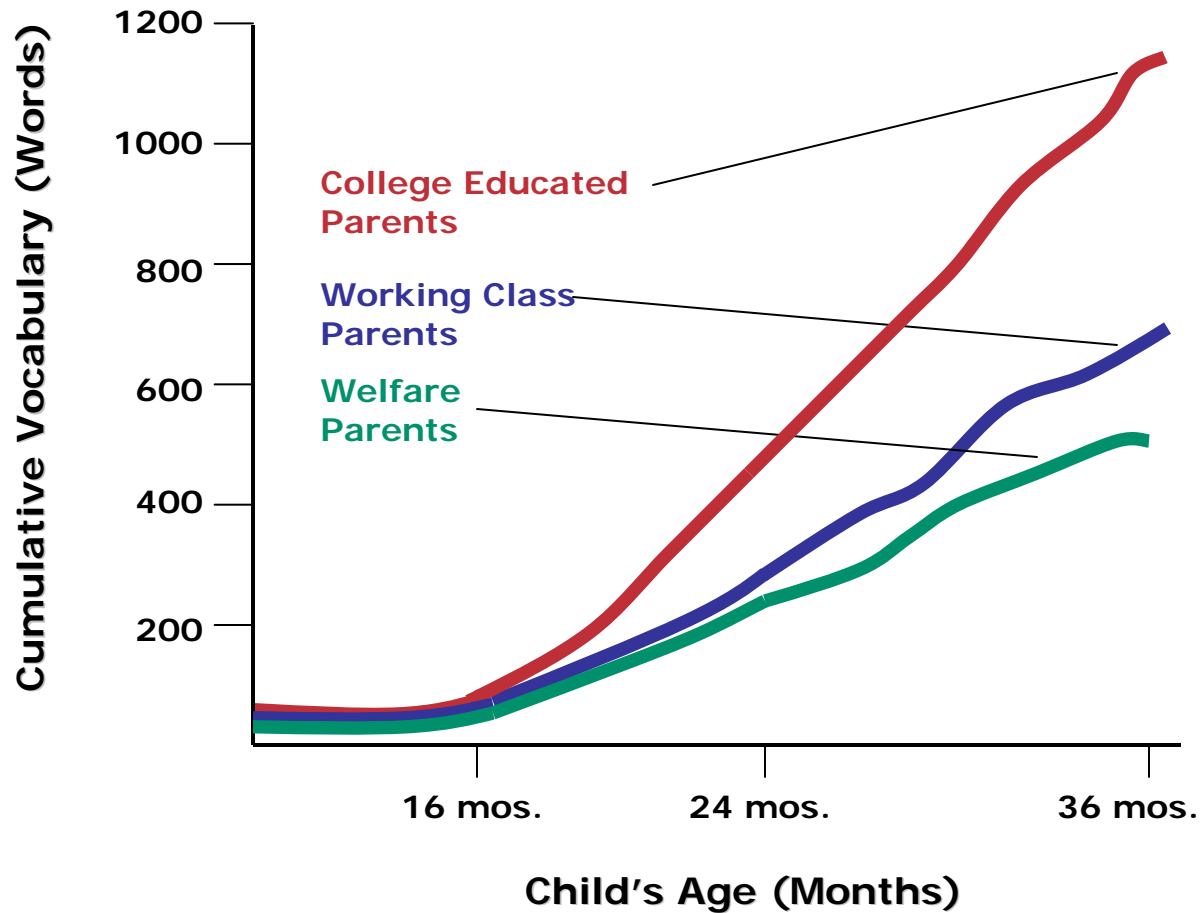


Early Experiences Work Both Ways

Significant Adversity Impairs Development



Barriers to Educational Achievement Emerge at a Very Young Age



Source: Hart & Risley (1995)

The Biology of Adversity: Three Levels of Stress

Positive

Brief increases in heart rate,
mild elevations in stress hormone levels.

Tolerable

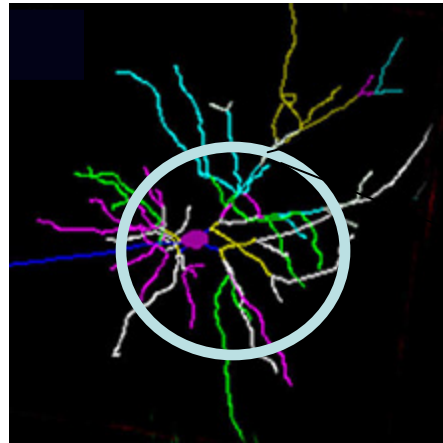
Serious, temporary stress responses,
buffered by supportive relationships.

Toxic

Prolonged activation of stress response systems
in the absence of protective relationships.

Toxic Stress Changes Brain Architecture

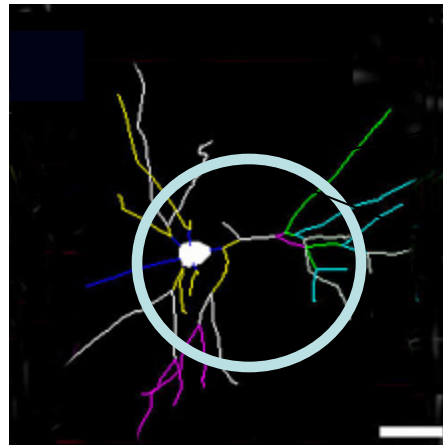
Normal



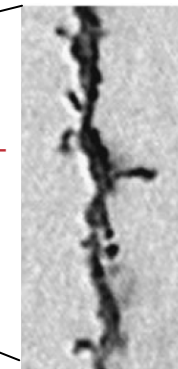
Typical neuron—
many connections



Toxic
stress



Damaged neuron—
fewer connections



Prefrontal Cortex and
Hippocampus

**Implications for
Policy and Practice from
Program Evaluation
Research**

Effective Services Improve Relationships and Environments

Positive relationships and emotional, social, cognitive, and language learning experiences can be promoted both at home and through a range of **evidence-based** parent education, family support, early care and education, and intervention services.

Program Evaluation Research Helps Identify Effectiveness Factors

Not all programs are effective.

Effectiveness factors are key to distinguishing those programs that work from those that do not.

Our goal: to provide clearer guidance than the usual calls for “quality.”

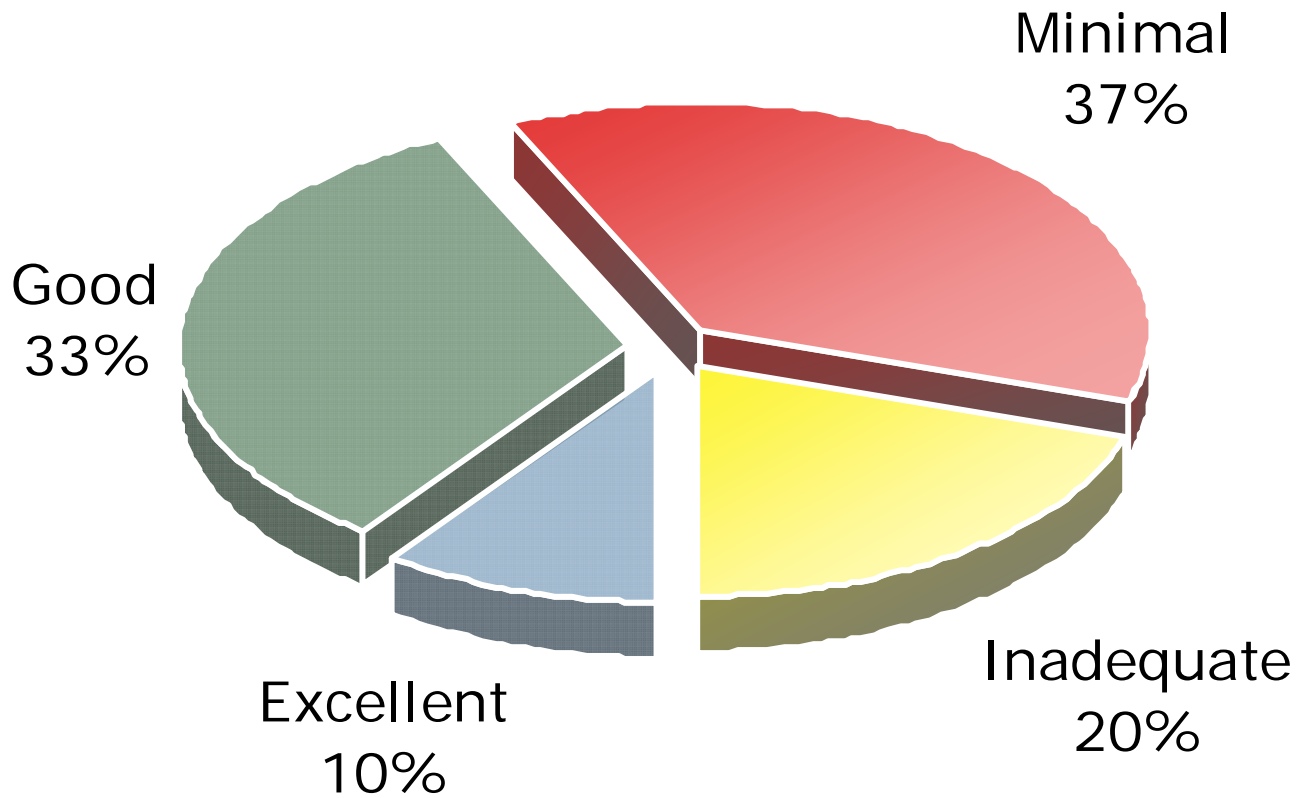
Science Points Toward a 3-Tiered Approach to Ensure Healthy Development

Tier 1: Basic health services and early care and education

Access to basic medical care for pregnant women and their children can help prevent threats to healthy development and provide early diagnosis and appropriate intervention when problems emerge.

Access to safe, stable care environments in the first years of life provides crucial developmental support to children in all families that need child care.

U.S. Child Care & Early Education Quality: Uneven at Best



Effectiveness Factors for Early Care and Education Programs for Children From Birth to Age 5

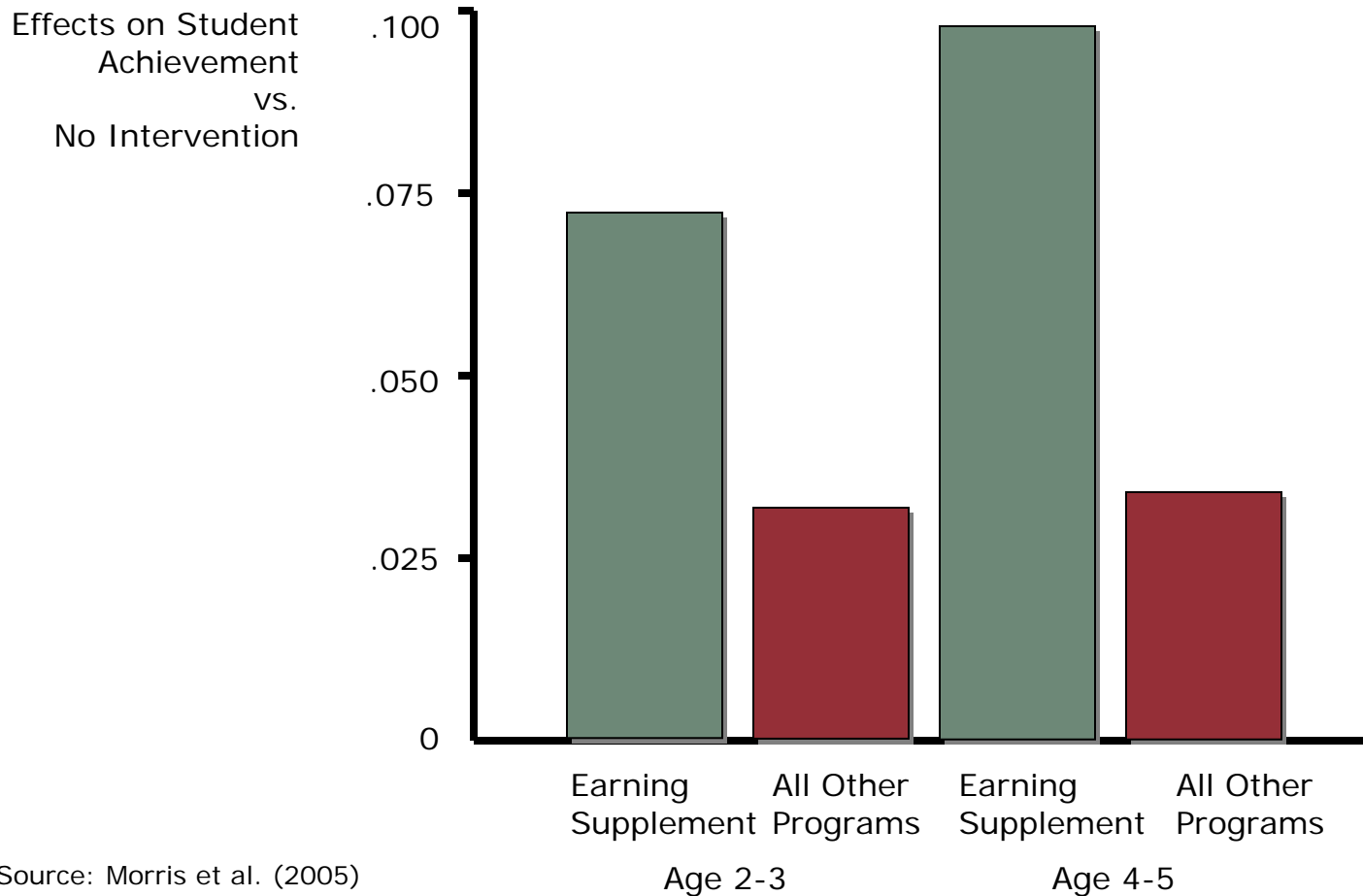
- Skilled and well-compensated personnel
- Small group sizes and high adult-child ratios
- Language-rich environment
- Developmentally appropriate “curriculum”
- Safe physical setting
- Warm and responsive adult-child interactions

Tier 2: Broadly targeted interventions such as income supports and early enrichment for children in poverty

For low-income families, work-based income supplements have been demonstrated to boost the early school achievement of young children.

Policy options include expanded income tax credits for low-income families, and welfare reform policies that “make work pay” by providing more income as parents make transitions from welfare to work.

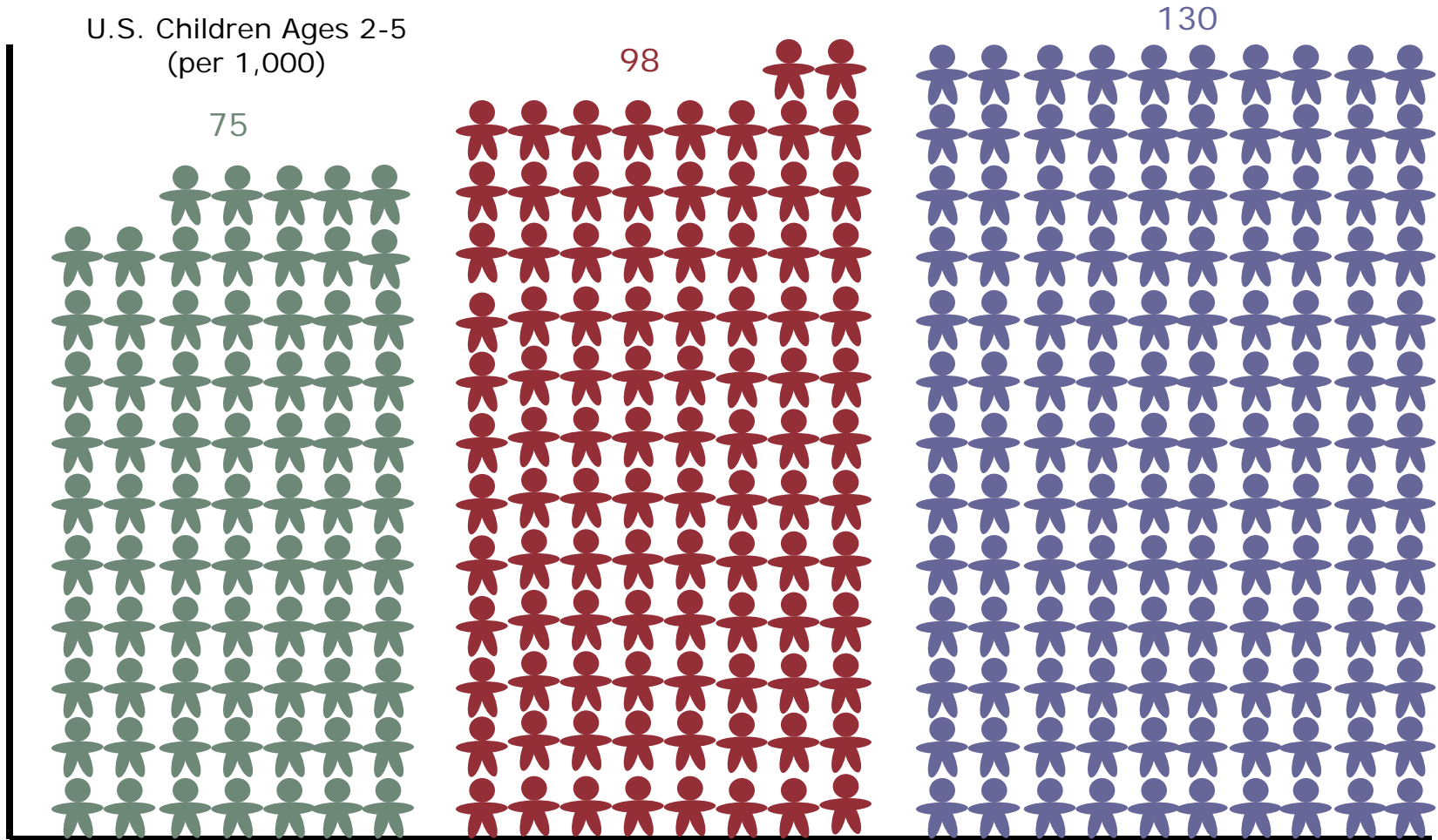
Making Work Pay Pays off in Student Achievement



Source: Morris et al. (2005)

**Tier 3: Targeted services for
children experiencing tolerable or
toxic stress**

Sources of Toxic Stress in Young Children



Maltreatment

Parental Substance Abuse

Postpartum Depression

Source: Finkelhor et al. (2005)

Source: SAMHSA (2002)

Source: O-Hara & Swain (1996)

Tier 3: Targeted services for children experiencing tolerable or toxic stress

For vulnerable parents expecting a first child, early, intensive support by a skilled home visitor can produce significant benefits.

Effectiveness factors for home visiting include:

- More highly trained visitors = larger effects.
- No evidence that 1-3 visits have any impact.
- Engaging and maintaining participation of families is a key challenge.
- Some successful programs specifically target populations at high risk with focused curricula.

Tier 3: Targeted services for children experiencing tolerable or toxic stress

For parents facing sources of toxic stress (mental health problems, depression, substance use, domestic violence), successful programs have **specific content and curricula addressing the source of stress and its effects on children and families**

Example: Family Connections project addressing maternal depression in Head Start.

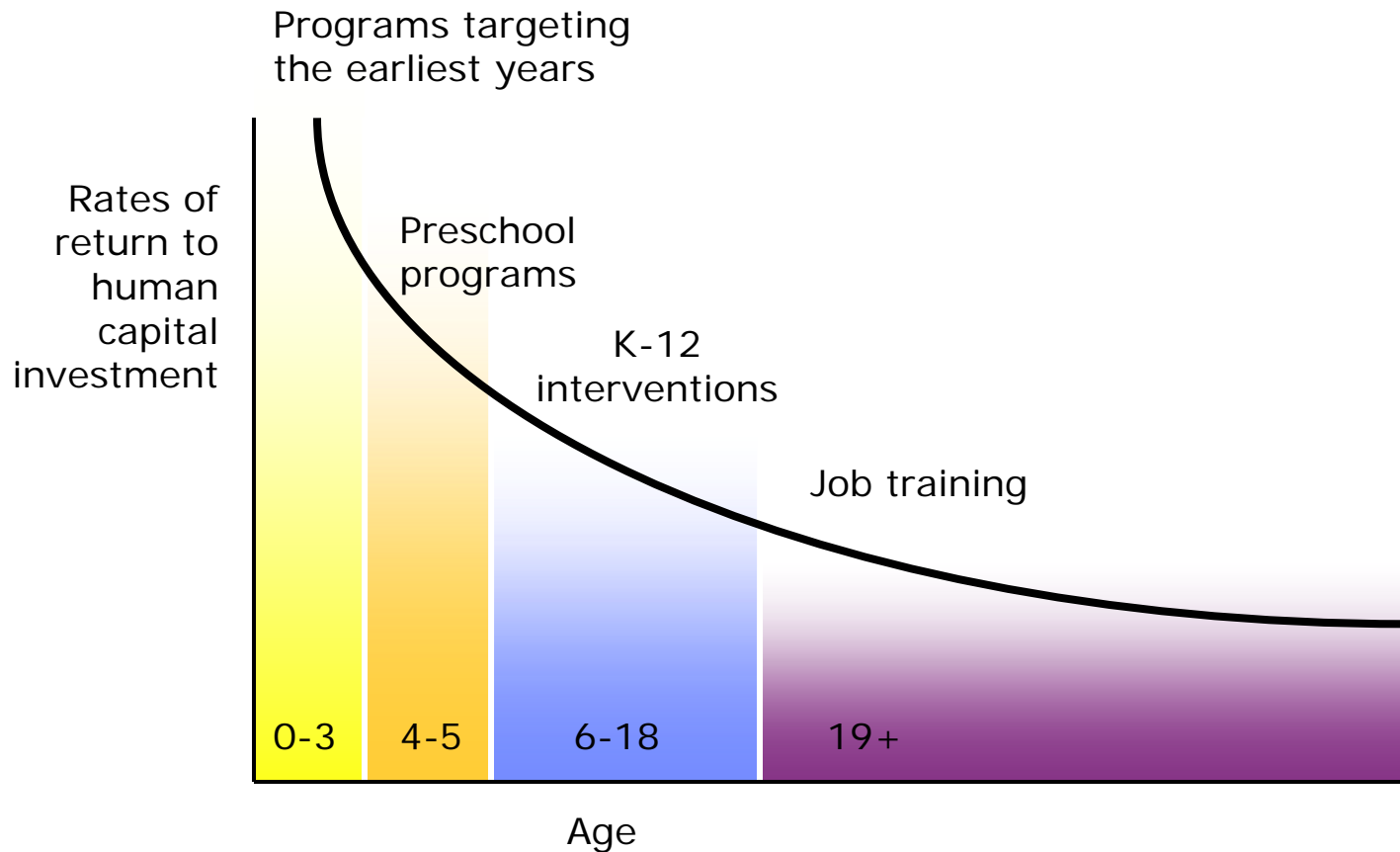
BUT few programs have been tested.

Which Services? Compare Costs to Benefits

Low cost services that have little impact are a waste of money. Responsible investments focus on effective programs that are staffed appropriately, implemented well, and improved continuously.

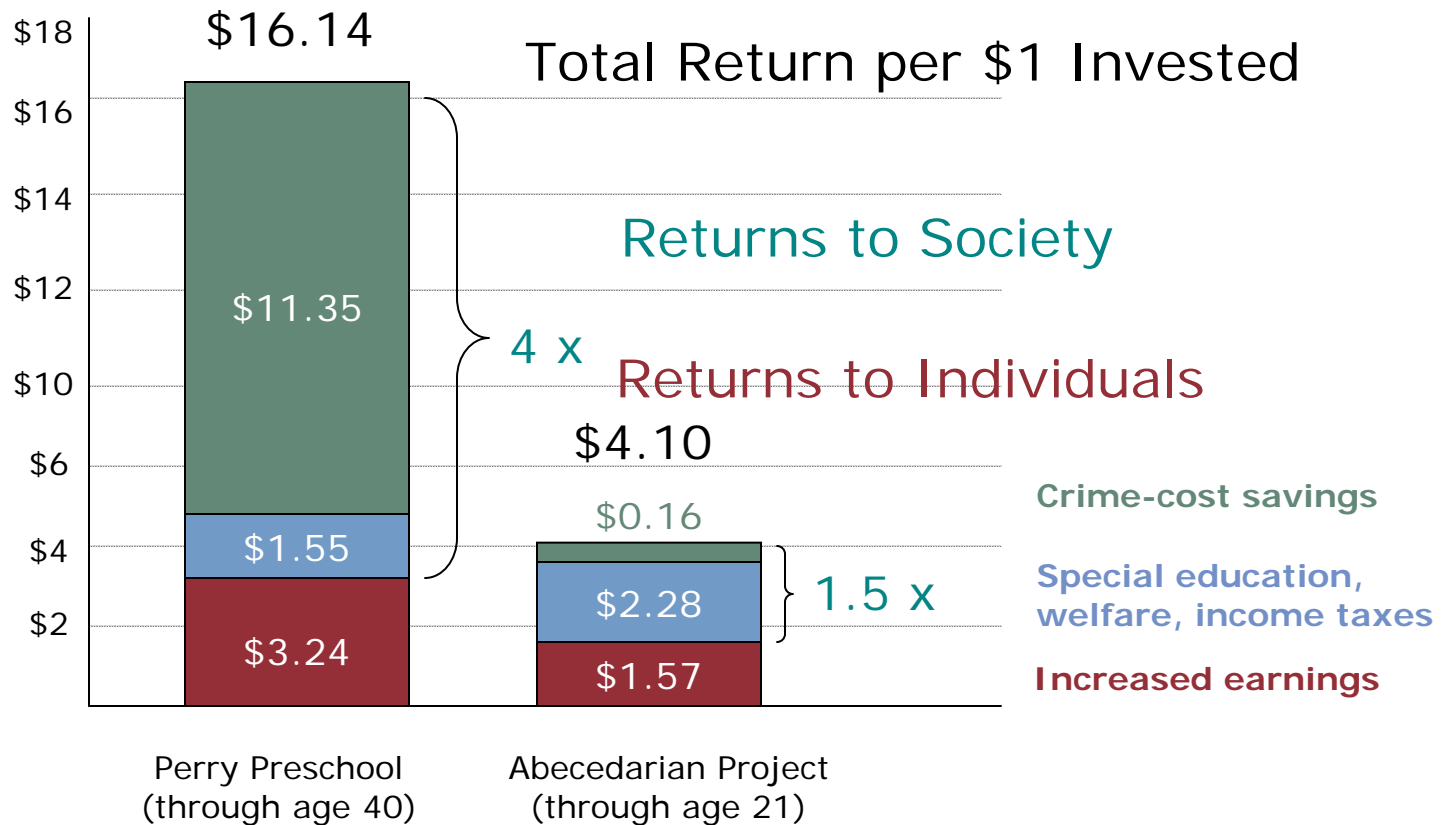
“Scaling up” effective programs continues to be a challenge. Our knowledge base regarding what works in quality improvement of early childhood care, education, and family support systems is in its infancy.

Preventive Intervention is More Efficient and Produces Higher Returns than Later Remediation

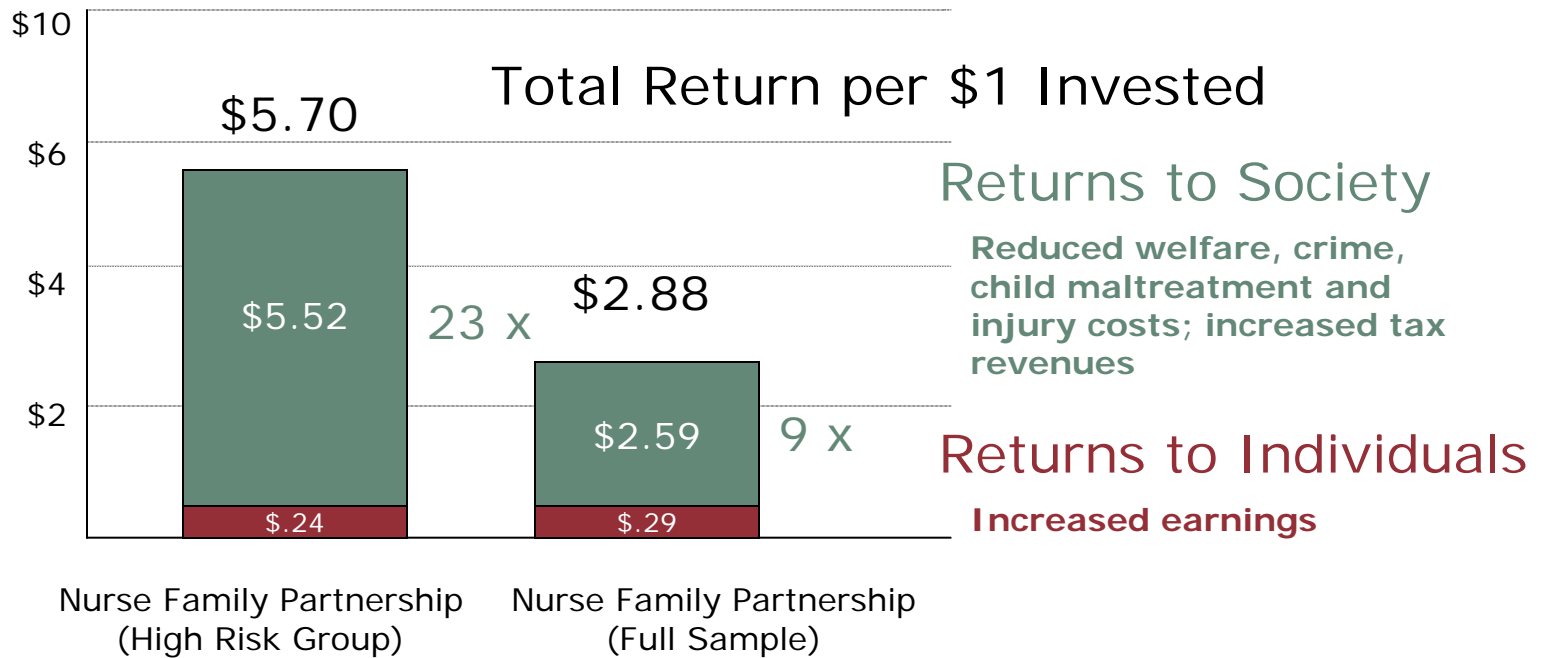


Cost/Benefit Analyses Show Positive Returns

Two Early Childhood Programs Demonstrate Range of Benefits to Society



Cost/Benefit for Nurse Family Partnership (Dollars returned for each dollar invested)



Future Directions

Increase the quality of services across agencies to address multiple risk factors:

- income/workforce/asset development,
- early childhood care and education (ECCE), and
- preventive health and mental health interventions.

Invest in the development and retention of a skilled early childhood workforce.

Improve programs for understudied and socially marginalized populations.

Science Points Toward a 3-Tiered Approach to Ensure Healthy Development

Narrowly targeted, specialized services for children experiencing tolerable or toxic stress.

3

**NARROWLY
TARGETED**

Broadly targeted interventions for children in poverty (e.g., income supports and early enrichment).

2

**BROADLY
TARGETED**

Basic health and early care services to help all children build and sustain strong brains and bodies.

1

**UNIVERSALLY
AVAILABLE**

KATHERINE MAGNUSON, PH.D.

ASSISTANT PROFESSOR OF SOCIAL WORK

UNIVERSITY OF WISCONSIN-MADISON

Thanks to other members of the Forum as well as the National Scientific Council on the Developing Child and the Buffett Early Childhood Fund.

A Science-Based Framework for Early Childhood Policy

Using Evidence to Improve Outcomes in Learning, Behavior, and Health for Vulnerable Children



Center on the Developing Child  HARVARD UNIVERSITY
NATIONAL FORUM ON EARLY CHILDHOOD PROGRAM EVALUATION
NATIONAL SCIENTIFIC COUNCIL ON THE DEVELOPING CHILD

www.developingchild.harvard.edu



Center on the Developing Child  HARVARD UNIVERSITY

NATIONAL SCIENTIFIC COUNCIL ON THE DEVELOPING CHILD
NATIONAL FORUM ON EARLY CHILDHOOD PROGRAM EVALUATION