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## Screening for ACES in Primary Care Pediatrics

Rahil D. Briggs, PsyD

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### AAP Policy Statement

- December, 2011
- Details the effects of toxic stress on the developing brain
- A call to action that pediatricians do more to participate in “innovative service-delivery adaptations that expand the ability of the medical home to support children at risk.”

Early Childhood Adversity, Toxic Stress, and the Role of the Pediatrician: Translating developmental Science into Lifelong Health”. Committee on Psychosocial Aspects of Child and Family Health et al., 129:1:e224-e231.

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### The Foundation of a Successful Society is Built in Early Childhood



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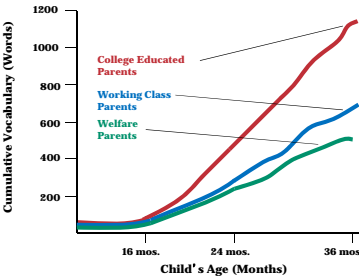
### Three Core Concepts of Development

- 1** Brain Architecture Is Established Early in Life and Supports Lifelong Learning, Behavior, and Health
- 2** Stable, Caring Relationships and “Serve and Return” Interaction Shape Brain Architecture
- 3** Toxic Stress in the Early Years of Life Can Derail Healthy Development



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### Barriers to Educational Achievement Emerge at a Very Young Age



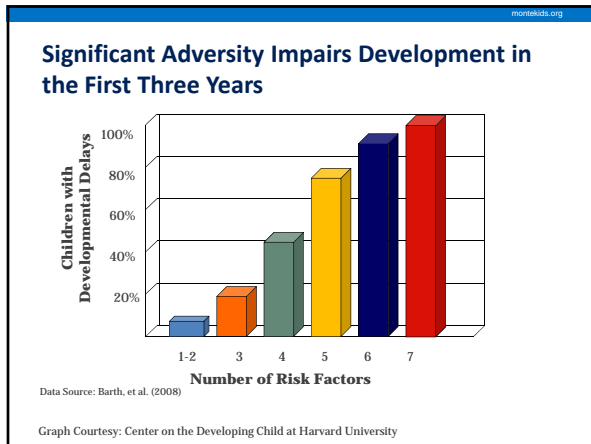
Child's Age (Months)	College Educated Parents	Working Class Parents	Welfare Parents
18 mos.	~100	~100	~100
24 mos.	~400	~300	~250
36 mos.	~1100	~700	~500

Data Source: Hart & Risley (1995)  
 Graph Courtesy: Center on the Developing Child at Harvard University

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### Relationships Buffer Toxic Stress

- Learning how to cope with moderate, short-lived stress can build a healthy stress response system.
- Toxic stress—when the body’s stress response system is activated excessively—can weaken brain architecture.
- Without caring adults to buffer children, toxic stress can have long-term consequences for learning, behavior, and both physical and mental health.



So, that's the problem. . .

Now what?

### Our Model (2005- present)

- Co-location and integration of Mental Health Specialists in pediatric primary care
  - Universal screening, assessment, treatment, and referral of infant mental health/development and caregiver mental health
  - ACES, ASQ:SE, PHQ-9
  - Education of providers

### ACES: Adverse Childhood Experiences

- CDC and Kaiser 1995-1997 data collection
  - N = 17,337
  - Abuse, neglect, household dysfunction
  - More than half the sample had at least 1 ACE
  - Significant relationship between ACE score and risk of adverse health factors later in life (smoking, obesity, depression, suicide attempt, illicit drug use, heart disease, cancer)

### Social Emotional Development

Healthy social and emotional development refers to a child's emerging ability to:

- Experience, manage, and express the full range of positive and negative emotions;
- Develop close, satisfying relationships with other children and adults; and
- Actively explore their environment and learn.

### ASQ:SE

Age range covered: 3–60 months

**General areas screened:** Personal-social (self-regulation, compliance, communication, adaptive functioning, autonomy, affect, and interaction with people)

**Components:** 8 color-coded questionnaires for use at 6, 12, 18, 24, 30, 36, 48, and 60 months, eight corresponding scoring sheets, User's Guide

**Who completes it:** Parents/caregivers complete; professionals score

**Approximate time:** 10–15 minutes to complete and 1-3 minutes to score

**Validity and reliability:** Reliability is 94%; validity is between 75% and 89%

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### Healthy Steps at Montefiore

- First time mothers and their children and partners enrolled either prenatally or before the child is 2 months old
- Co-management of well child visits
- Baby and me group
- Home visits
- Adult mental health services



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### Design


- Quasi-experimental longitudinal follow up of children enrolled in a Healthy Steps (HS) program at their primary care pediatric setting and a comparison group (CG) from a matched clinic who met enrollment criteria, but did not receive the intervention



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### Method

- General linear model and logistic regression (LR) analyses were used to determine the relationship between maternal ACES and maternal report on the Ages and Stages Questionnaires: Social-Emotional (ASQ:SE) at 36 months, adjusting for baseline differences between HS and CG and between study completers and drop-outs.



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### Results- Attrition


```

    graph TD
      HS[HS] --> HS_Orig[Originally enrolled: N=208]
      HS --> HS_Assessed[Assessed at 36 months: N=85 (41%)]
      CG[CG] --> CG_Orig[Originally enrolled: N=116]
      CG --> CG_Assessed[Assessed at 36 months: N=39 (34%)]
  
```

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### Attrition

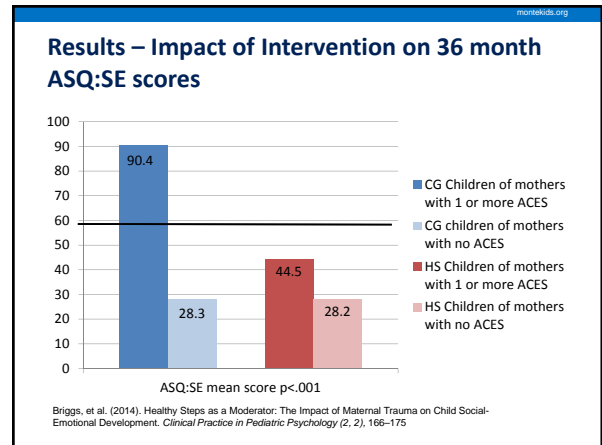
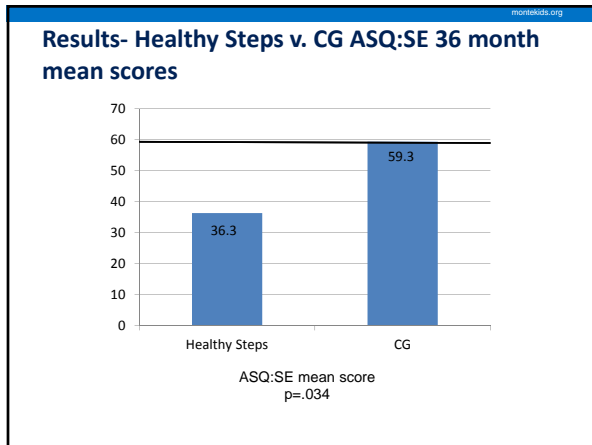
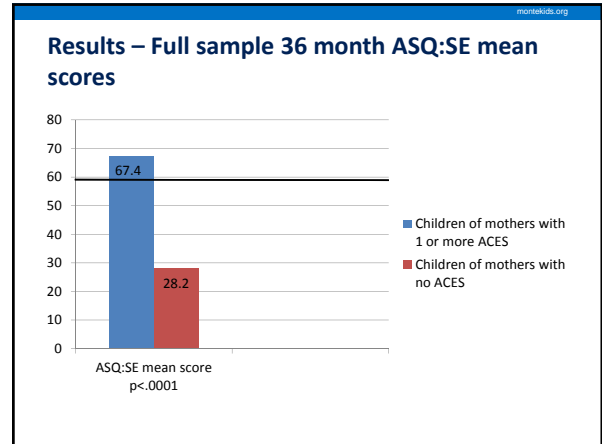
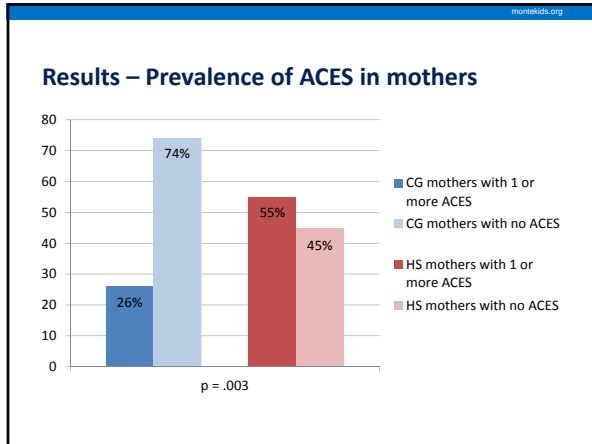
Differences between study completers and drop-outs occurred only in comparison group, where drop-outs were more likely to have gone beyond high school (51% v. 25%) and to have recently experienced depression (35% v. 15%);  $p < .05$ .



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### Results - Population

	CG Percentage %	HS Percentage (%)	p value
Child Female	56	53	NS
Child Hispanic	49	56	NS
Child Black	37	38	NS
Child Medicaid	50	76	NS
Maternal Education ≤ HS	34	75	.000
Mean maternal age	21.9 (+/- 3.9)	24 (+/- 5.6)	.03
Maternal ACES >0	26	55	.003
History of depression in past year	15	30	.069



### Our model (present → future)

- 300,000 patients (90,000 pediatric)
- 24 sites
- Healthy Steps 0-5, innovative School Age and Adolescent programming, CCI for adults
- Universal life span behavioral health screening, including ACES
- Family assessments
- Integrated care at each site (hubs and satellites)
- Challenges