

Are earlier interventions more effective?

Pooling data from 15,000 families taking part in parenting interventions

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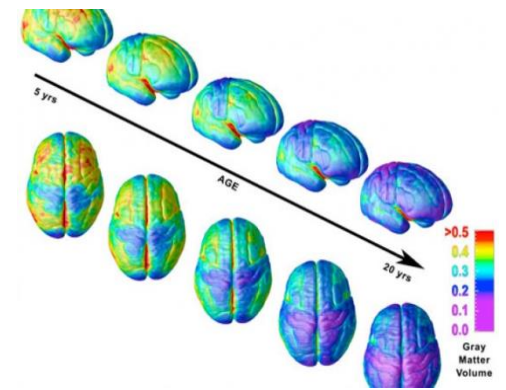
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ACAMH Emanuel Miller meeting, March 2019



Is early intervention more effective than later?



Early intervention justified based on evidence from:

- Neuroscience - for sensitive periods in the early years, implying greater malleability (Wachs et al, 2014).
- Longitudinal, and economic studies
- Logically attractive [...prevention better than cure]

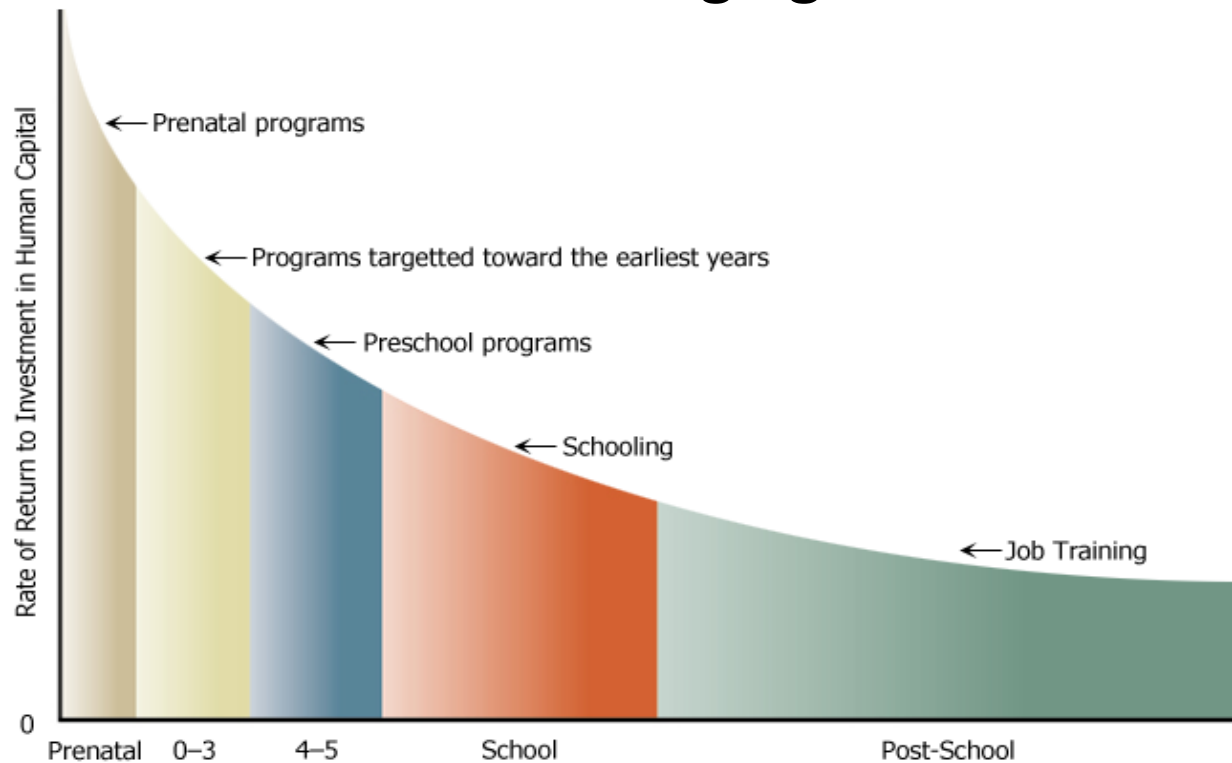
How strong is the evidence for superior effects?

- Surprisingly few studies **directly** test differential effects of interventions by age, using high quality RCT data from comparable interventions
- Other evidence non-randomised, or from extreme environments - eg orphanages
- Yet global policies recommend early intervention- esp in first 0-5 years - for enhancing child cognitive, emotional, behavioural outcomes

Economic argument- what data?

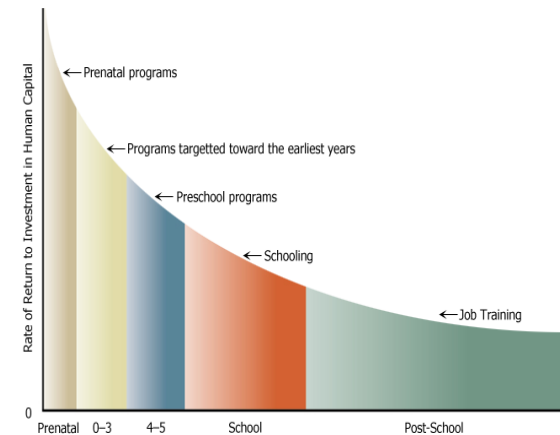
Heckman 2006 *Science*: Economic analyses of return on investment from early intervention -

Compared effects of different interventions, from birth thru adolescence, concluded there was hugely diminished cost-effectiveness with increasing age.



Heckman won the Nobel prize in Economics - data hugely influential, but has limitations :

- Compares good quality early interventions with ineffective later ones –
e.g. preschool enrichment, vs ‘schooling’, vs teen bootcamps, job training;
- Timing effects may depend not only on developmental stage, but also on intervention goals, mechanisms and outcomes – Heckman mixes huge variety all together!
- Maybe better to examine one type of intervention – so keeping mechanisms & outcomes constant, whilst comparing across ages..



Source: Heckman (2008)

The extensive evidence base on parenting interventions provided the chance to test age effects in two complementary meta-analyses.....

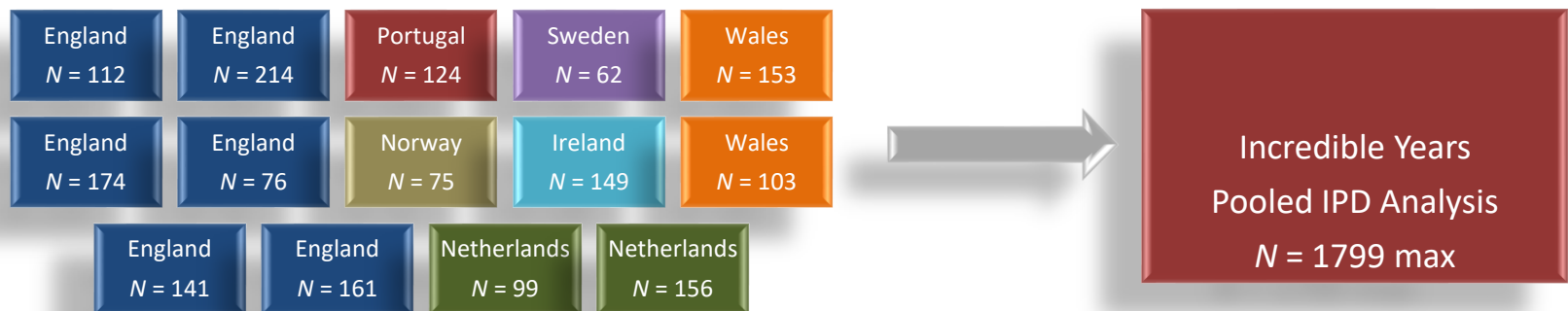
Two complementary methods - both combine RCTs of parenting interventions, age 2-12 yrs

Method 1: 13 trials; 1700 kids, 6 countries

Combined individual-level participant data (IPD meta-analysis) from near-total sample of trials of Incredible Years (IY) parenting intervention in Europe

Method 2: 154 trials, 15,000 kids, 20 countries

Combined trial-level data (conventional meta-analysis) from systematic review of trials of all types of parenting interventions

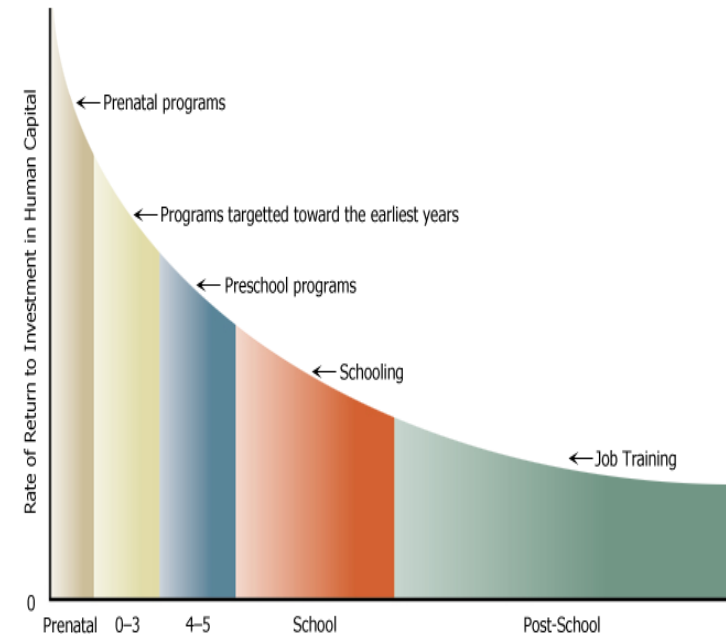


1) IPD meta-analysis of 13 Incredible Years parenting trials

Younger vs. older children, range 2-10 years --

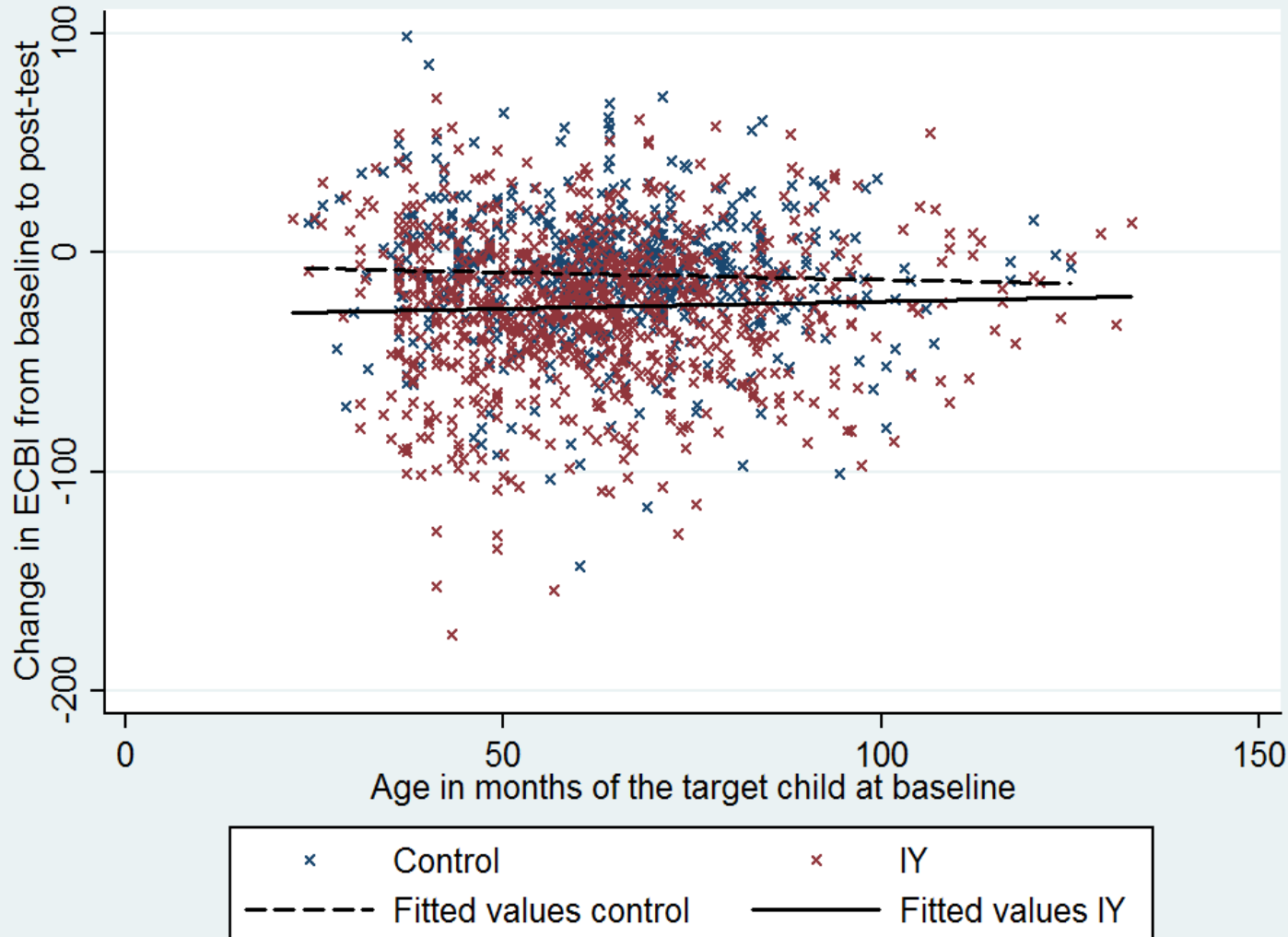
- Will they benefit more or less, in terms of improvement in child conduct problems?
- Will cost-effectiveness differ by age?

- 1600 data points;
- Child age in months;
- Primary outcome: Eyberg child behaviour inventory



Source: Heckman (2008)

Effects on child outcomes don't vary with age



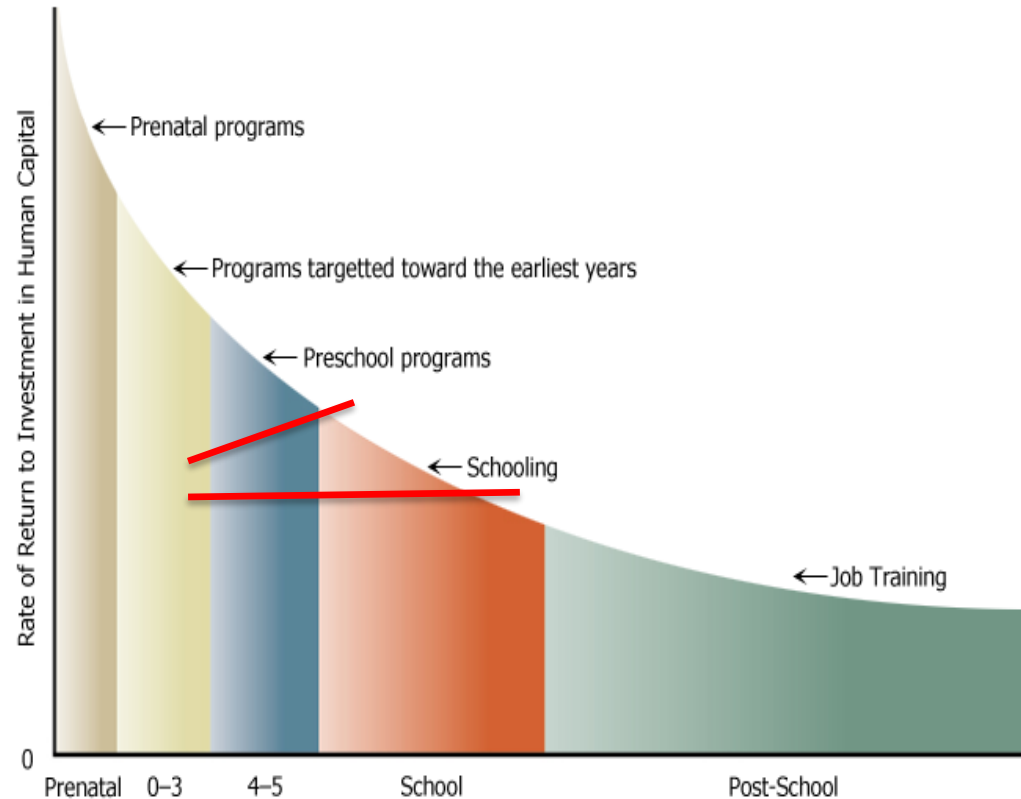
**No evidence
intervention
effect varies
by child age
(2-10 years)
($p=0.65$).**

1600 data
points

Cost effectiveness - increases with age

Cost-effectiveness went up with age – cautious conclusion, as based on subset of 5 UK trials (Bonin et al. 2019)

So- Heckman's curve doesn't seem to work for one very common intervention - parenting for behaviour problems ..

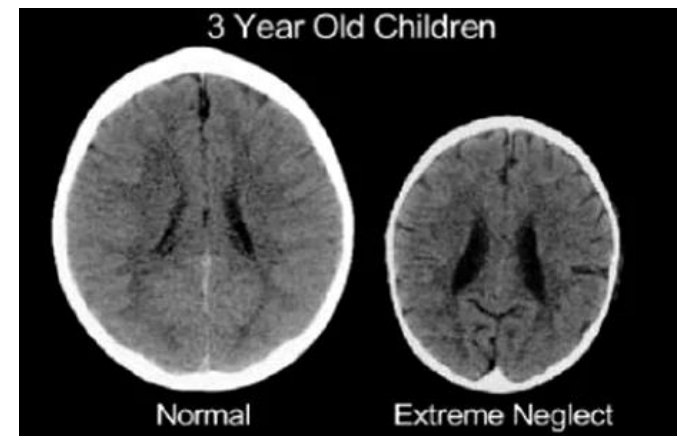
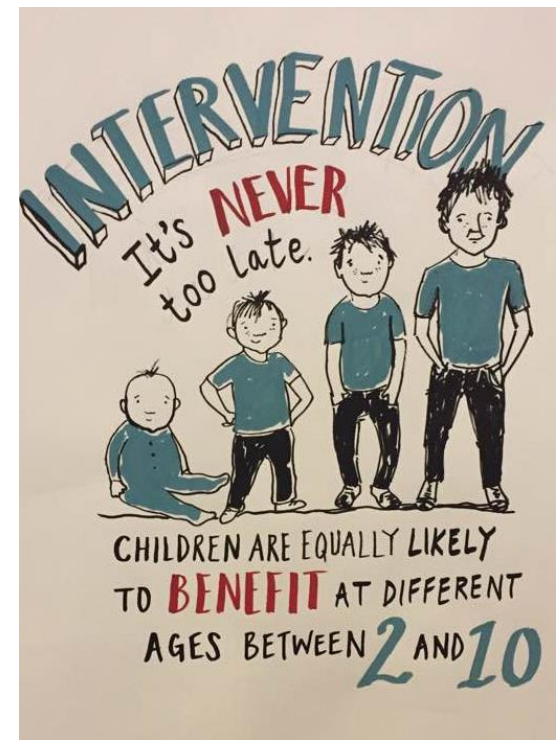


Source: Heckman (2008)

Very powerful test, no age effects

But....

- Maybe its just this particular parenting intervention, IY - does the effect generalize?
- To check, we tested using bigger set of 154 trials, including all parenting interventions this time, using regular meta-analysis – with data only at trial aggregate level
- Less powerful, 1 age point per trial; 154 data points (not 1600), but more generalisable



Can we replicate no age effect in wider range of interventions? -- 50 different parenting interventions, 20 countries




Found:

- **No moderation of child conduct problem outcomes by (average) age of children in trial**
- No moderation by age *range* - targeting a developmentally more specific stage was not more effective
- 154 trials, 15,000 families, trial-level meta-analysis
- Mean child age - range 2-10 (mean 5 years)
- Paper just out – Gardner, Scott et al (2019): The earlier the better? *Child Development*

The title for this Special Section is **Meta-analysis and Individual Participant Data Synthesis in Child Development**, edited by Glenn I. Roisman and Marinus H. van IJzendoorn

The Earlier the Better? Individual Participant Data and Traditional Meta-analysis of Age Effects of Parenting Interventions

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Stephen Scott
King's College London

Video- ChildTrends in Washington

<https://wkow.com/news/top-stories/2019/02/12/positive-parenting-its-never-too-late-to-parent>

BBC news

It's 'never too late' for parenting advice, study says

By Katherine Sellgren
BBC News family and education reporter

🕒 26 September 2018

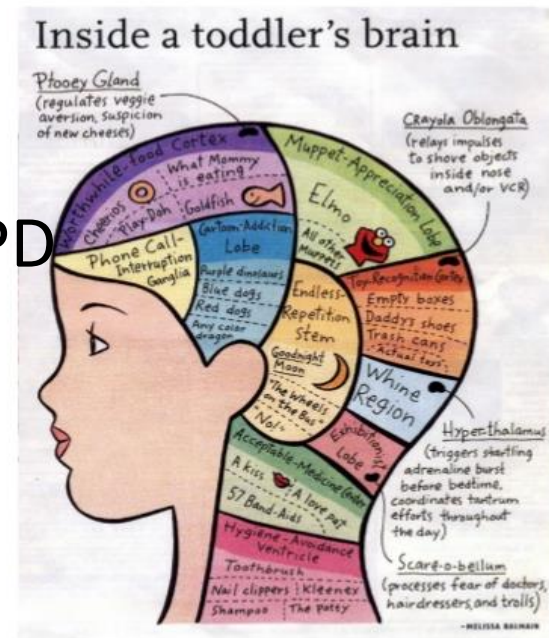


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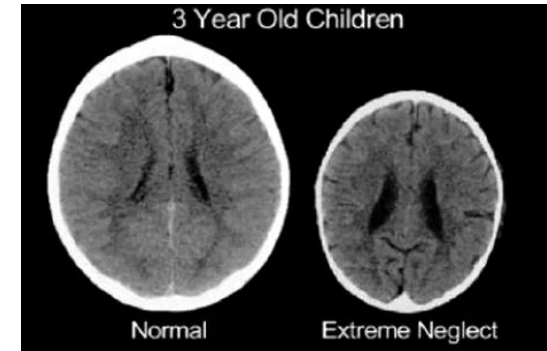


Conclusions

- Contrary to common belief, we found no age effects in two large, complementary analyses of parenting interventions
- Study 1- brings power & precision- first IPD meta-analysis (IY) in the field
- Study 2- brings greater generalisability of finding across diverse interventions & places - regular trial-level meta-analysis



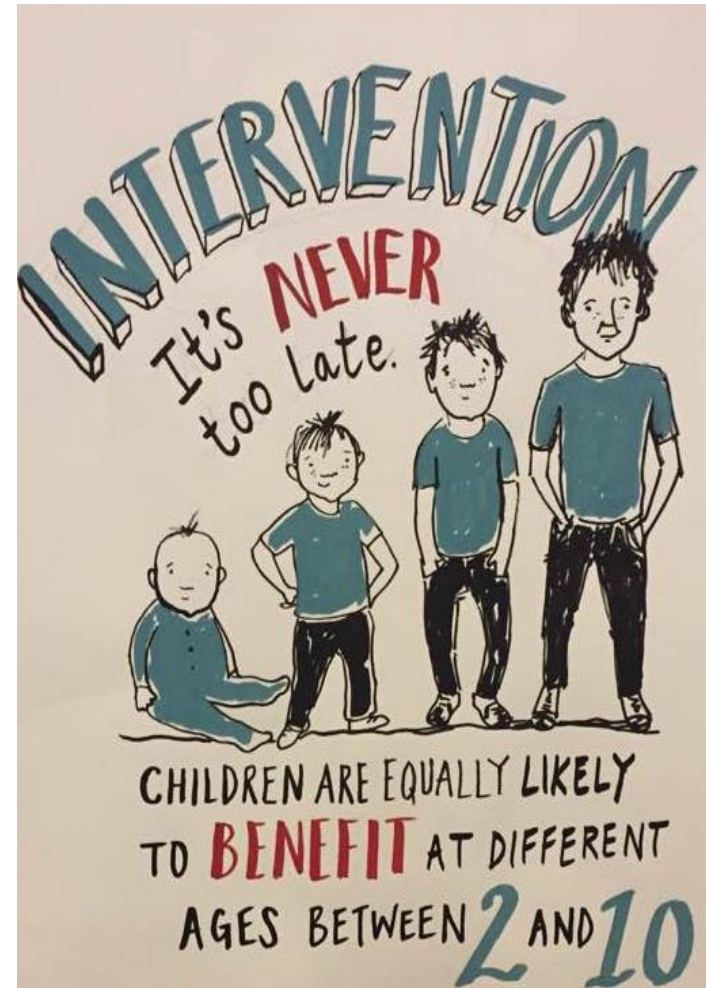
Limitations



- 2-10 years range, so doesn't test if first 1000 days are more important
- Doesn't test other interventions in the first few years of life (e.g. attachment - but their effects don't appear to be larger)
- No long term follow up
- Our data apply to one common problem, parenting interventions for child behaviour problems (2-10 yrs) – in other areas, we lack direct comparisons of effects by age- or find no age effects (eg language, ADHD, anxiety)

Implications


- Parenting interventions just as effective in school years as in preschool period (2-10)
- Fails to support important notion of greater malleability in early years- perhaps plasticity in this respect doesn't vary with age?
- Policy and practice should invest in parenting interventions for older and younger children- both are vital
- Our data don't mean intervention should be delayed for young children who need them






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to do:

Video link

check points in ISRCAP talk

And paper- limitations?

test length

shorten!