



Parents



**Little Sparks
Big Starts**



How early brain development impacts health for life

For more information visit: www.littlesparks.org.uk

The importance of early years

(what we know already)

Our brains develop in stages throughout life, but the first 1,001 days from conception to age two are especially important. During this time, the brain grows rapidly and is highly sensitive to experiences, a period known as heightened neuroplasticity. This sensitivity continues through the early years (ages 0 to 5) and returns again during adolescence (ages 11 to 25). That's why loving, responsive care in these key stages makes such a lasting difference. With the right support and interventions during the first 1,001 days, it's possible to reduce the risk of future health issues, such as high blood pressure, severe obesity, and other long-term conditions, and give children the best start in life.



But how does this impact children later in life?

Scientists often look at how different programs affect children over many years. These are called longitudinal studies. This means they study the same group of people again and again, over a long period of time.

One of those studies, called the ABC Study (short for the Carolina Abecedarian Project) began in the 1970s in North Carolina, USA. The study followed children from before birth through to adulthood. All the families in the study were living in poverty.

At the start of the study, the children were randomly put into two groups:

- One group got extra help. This is called the intervention group.
- The other group did not get this extra help. This is called the control group.

Children in the intervention group joined a special childcare program from the time they were just 8 weeks old until they started school.

This program included:

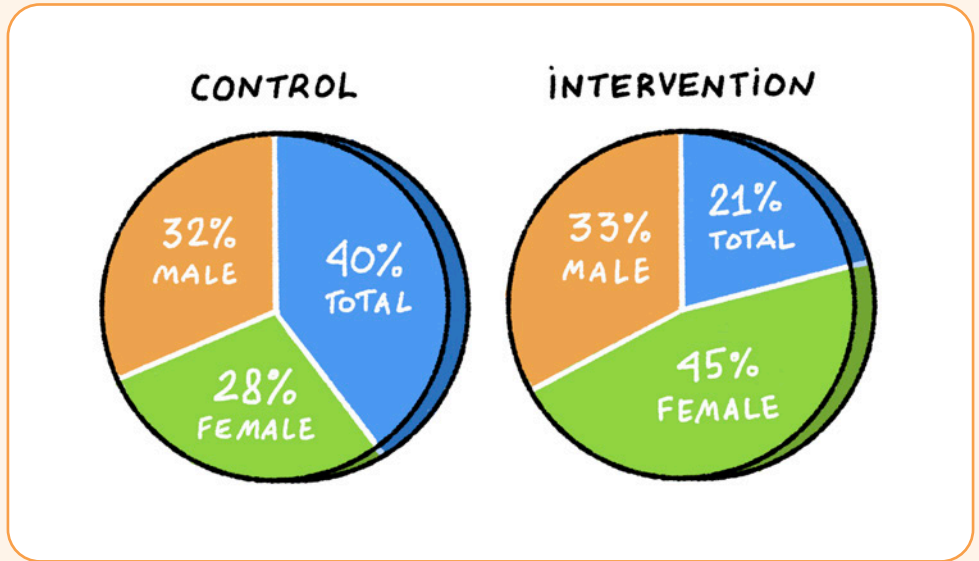
- Fun learning games to build language, thinking, and emotional skills
- Lots of individual attention from trained adults
- Small group activities with other children
- Support with healthcare and nutrition

A famous economist, James Heckman, worked on this project. His research shows that starting support early in a child's life can make a big, long-lasting difference. The results from this study looked at how the children were doing by the time they were 35 years old.

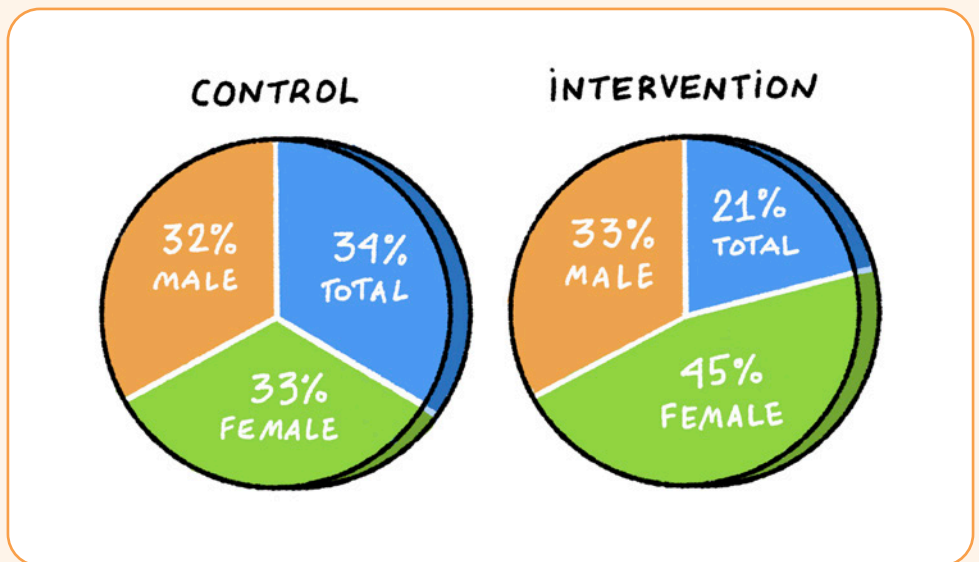


The results showed that...

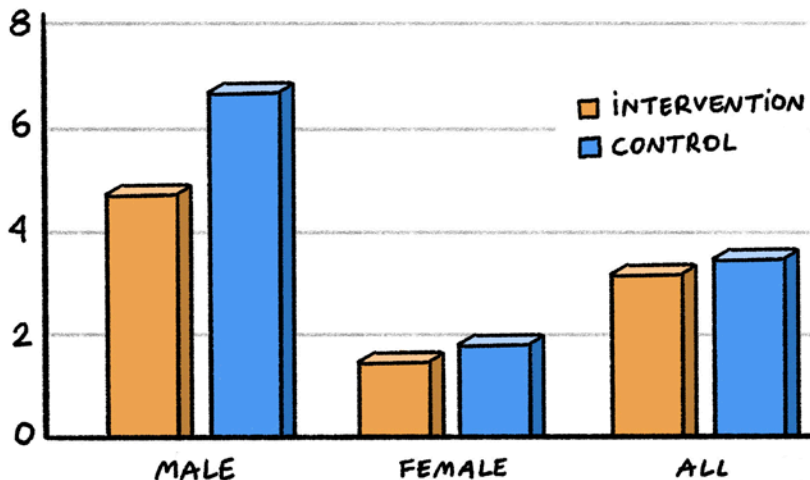
High blood pressure: (% with hypertension and increased risk of heart attack or stroke)



Severe obesity: (% of the group with BMI in severe obesity category)



Risk of developing heart disease: Higher score = Higher risk



What do these results tell us?

The children who had the intervention were less likely to have high blood pressure and therefore had a lower risk of a heart attack or stroke (16.2% compared to 35.5% at age 35). This was particularly seen in males, 44.4% of the population at risk of high blood pressure, compared to 10.5% for males who had the intervention.

Early childhood interventions positively affect long term health outcomes in adults.

The control group had a higher risk of high blood pressure (35.5%) than the intervention group (16.2%).

The evidence is strongest for men.



Final thought...

The first years of a child's life are full of possibility. What happens during the first 1,001 days, from pregnancy to age two, can shape their health, learning, and happiness for years to come. Science shows that when children get loving care, support, and positive experiences early on, they're more likely to grow into healthy, confident adults.

Helpful terms

Neuroplasticity: How the brain can change and grow, especially when children are very young.

1001 Days: The time from pregnancy to age 2, when the brain is growing very fast and is most sensitive to experiences.

Intervention: Extra help or support given to children to help them grow and learn better.

Control group: A group of children who didn't get the extra help, used for comparison in studies.

Intervention group: A group of children who receive extra help or support in a study.

Longitudinal study: A research project that follows the same children over many years to see how they grow and change.

Hypertension: When the heart has to work too hard to pump blood, this can lead to health problems later.

BMI (Body Mass Index): A number that shows if someone's weight is healthy for their height.

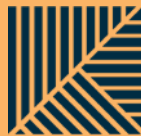
Economist: A person who studies money, jobs, and how people make choices. In this context, an economist helps show how early support for children can lead to better outcomes later in life.

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