

Brighter Beginnings: The First 2000 Days of Life

April 2021

Why do the First 2000 Days matter?

The first 2000 days of a child's life, from conception to the time they start school, is an important time for physical, social and emotional health. Experiences during these early years have deep and long-lasting effects, predicting outcomes like:

- Success at school and in finding a job
- Lifelong health
- Risk of substance abuse and criminal behaviour

Early experiences change the brain

- During the first 2000 days of life, the brain is rapidly changing and growing.
- A child's environment and experiences during these early years have a lasting impact on their health, development, learning and wellbeing. This is because the growing brain changes to respond to the conditions around it, and these changes stick.
- Exposure to toxic stress during the first 2000 days of life can disrupt development and increase the risk of poor lifelong health.

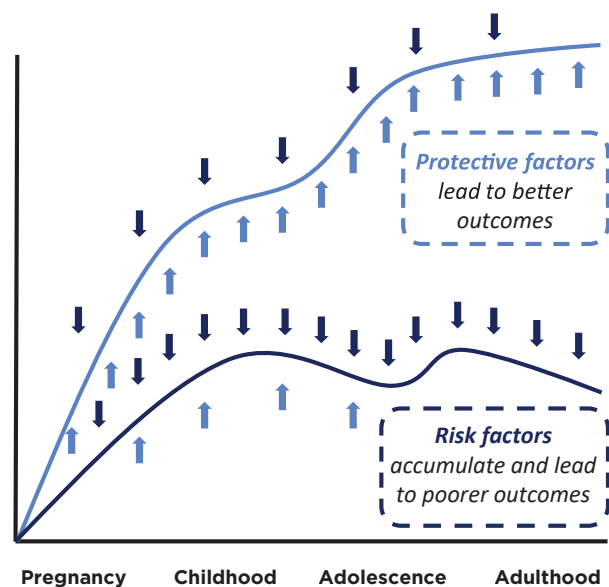
- Exposure to risks like abuse and neglect, domestic violence, household mental illness and poverty lead to poorer health outcomes. The greater the number of stressors, the greater the risk to development.
- Protective factors can buffer the impact of stress and support healthy development. This includes things like parent support programs, substance abuse treatment, high quality childcare, and income support for low-income families.

This Document - Understanding The First 2000 Days Of Life

1. Why does it matter?
2. Acting early
3. What can we do?
4. What works best?
5. Our plan for action

- As seen on the left, these protective factors can counter risk factors to ensure better outcomes for children and the adults they become.

Positive Stress	Mild Normal Temporary	Increased resilience Development of coping skills
	Tolerable Stress	Moderate Temporary Supported
Toxis Stress	Some risk of physical or emotional damage	Adaptation and recovery
	Serious Prolonged Unsupported	Disrupts healthy development Increases risk of lifelong poor health





Acting early: The economic case for early intervention

Investing sooner earns better returns

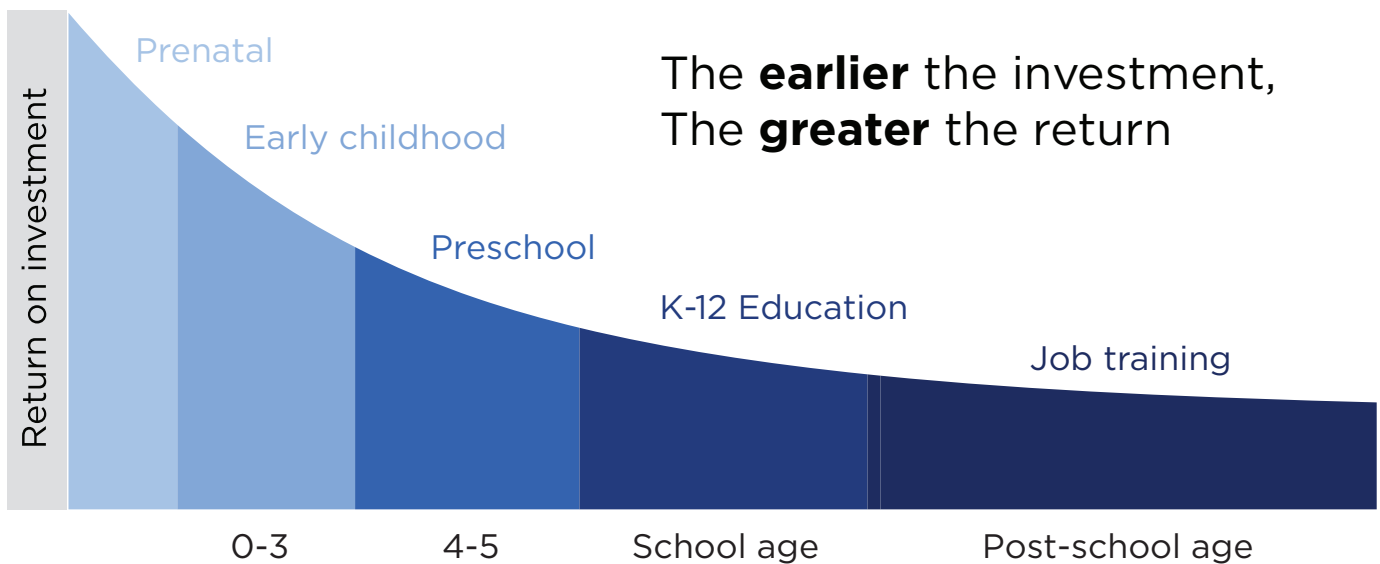
There are lots of ways to support children to thrive in the first 2000 days of life.

- It makes economic sense to support families earlier rather than later.
- **Late intervention** is estimated to cost **\$15.2 billion/year** through high-intensity and crisis services. These costs are borne across government sectors, including health, child protection, policing, and welfare, among others.

The opportunity exists to improve the lives of children and families, whilst reducing pressure on government budgets, through **early intervention**.

- Investing in early childhood produces a **return on investment of \$13** for every \$1 you put in. That's because benefits accrue over time, like interest in a bank account; children who develop within nurturing environments are more likely to become happy and productive members of society.
- The evidence is clear; **early intervention** is **smart investment**.

\$1 
 invested in early
 childhood yields a
\$13 return



Early intervention produces cost savings in:



• Crime



• Education



• Welfare



• Health



How to make a Difference

What children need in the First 2000 Days of Life

What can we do?

Why is this important?

Pregnancy

- Antenatal care
- Socio emotional health checks
- Smoking cessation programs
- Sustained Health Home Visiting
- Continuity of midwifery care

A **mother's health and lifestyle** before, during and after pregnancy has an important impact on her child's development. Access to appropriate **antenatal care** is important for the health of both mum and baby.

Ages 0 - 3

- Breastfeeding programs
- Teaching parenting skills and parental sensitivity
- Immunisations
- Developmental checks
- Sustained Health Home Visiting

Infants need secure relationships with **sensitive** and **reliable caregivers**. Where possible, infants flourish when **breastfed** until 6 months. From 6 months, infants also need **nutritious foods** to support healthy growth. **Developmental checks** and **immunisations** ensure that babies are healthy and growing well. A high quality and **stimulating home environment**, including **exposure to language**, creates healthy foundations for learning.

Ages 3 - 5

- Quality early childhood education
- Mental health programs
- Parenting interventions

Children flourish when they are given **opportunities to play and learn** through safely exploring their environments and interacting with their parents. We know that attending **high quality education in early childhood** sets children up to do well at school. This is also a time when **mental health concerns** start to arise and are best addressed.

Social Determinants of health







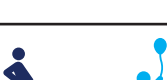


- Relieving poverty
- Housing stability
- Preventing family violence
- Reducing pollutants

Across development, children have a right to grow up in **safe social and physical environments**. Pregnant women and infants are most vulnerable to **environmental risks** like air pollution and unsafe **housing**. A child's **family environment** powerfully shapes their lifelong outcomes; exposure to **family violence** is a strong risk factor for adverse lifelong outcomes. **Poverty and intergenerational trauma** are associated with multiple risk factors for developmental vulnerability.




How to make a Difference

What children need in the First 2000 Days of Life

STAGE	INTERVENTION	WHO	EFFICACY
	Midwifery-led continuity of care during the antenatal period	MCCSM	★★★★
	Access to antenatal care integrating public and private, primary and secondary healthcare systems	CFHS MCCSM	★★★★
	Smoking cessation and alcohol programs for pregnant women	CFHS MCCSM	★★★☆☆
	Sustained nurse-led health home visiting programs for at-risk families (e.g. Sustaining NSW Families).	CFHS	★★★★
	Education and support programs for early initiation breastfeeding	CFHS Paeds MCCSM	★★★★
	Nutritional interventions for mums and babies including the management of obesity and micronutrient supplementation for those who need it	Paeds CFHS	★★★☆☆
	Support for carer's mental health Parent Line 24/7 counselling services	PIMHS DCJ	★★★☆☆
	Universal parenting programs	CHFS Parenting programs	★★★☆☆
	Supporting early childhood development through responsive and mindful care such as Love. Talk. Sing. Read. Play and the Bright Tomorrows app	Parenting programs	★★★☆☆

Abbreviations: CFHS (child and family health service), MCCSM (maternity continuity of care service models), Paeds (paediatrics services and paediatricians), CDS (child development services), PIMHS (perinatal and infant child mental health services), ICAMHS (infant, child, and adolescent mental health services), ECEC (early childhood education and care), DCJ (Department of Communities and Justice), DEES (NSW Department of Environment, Energy and Science), SDOH (social determinants of health).

 **Pregnancy**

 **0 - 3 years**

 **3 - 5 years**

 **SDOH**

★★★☆☆ **Emerging evidence to suggest this intervention is effective.**

★★★★☆ **Moderate evidence to suggest this intervention is effective.**

★★★★★ **Strong evidence to suggest this intervention is effective.**

These ratings were made by an expert panel after a scoping review of the evidence.



What works best?

Evidence for interventions in the First 2000 Day of Life

STAGE	INTERVENTION	WHO	EFFICACY
	Regular developmental health surveillance through the Personal Health record or 'Blue Book' Identification and management of developmental delay . Support through the National Disability Insurance Scheme	CFHS CDS	★★★☆☆
	Supported playgroups Family Connect and Support Services	DCJ Family Services	★★★☆☆
	Infant, Child and Adolescent Mental Health Services (ICAMHS) Developmental Diagnostic Assessment Services	ICAMHS CDS	★★★☆☆
	Universal access to affordable, high quality early education	Education CDS	★★★★☆
	Socio-emotional learning interventions.	Education ECEC	★★★★☆
	Early literacy and numeracy programs	Education ECEC	★★★☆☆
	Transition to school programs and activities	Education ECEC	★★★☆☆
	Income support for families experiencing poverty	DSS	★★★☆☆
	Domestic violence services	DCJ	★★★☆☆
	Housing assistance including social housing, rental assistance and relieving homelessness	DCJ	★★★☆☆
	Ensuring access to safe and healthy environments that encourage play and exploration	DEES Education ECEC	★★★☆☆

The Social Determinants of Health

The social, economic and environmental conditions a child is born and raised in underpins all the important influences on development in the first 2000 days of life. For example, a family experiencing poverty is more likely to struggle to provide their child with reliable caregiving, adequate nutrition, and a home environment enriched with learning opportunities. Therefore, interventions to support families in the early years are most effective when they also address the social and economic conditions a family lives in.

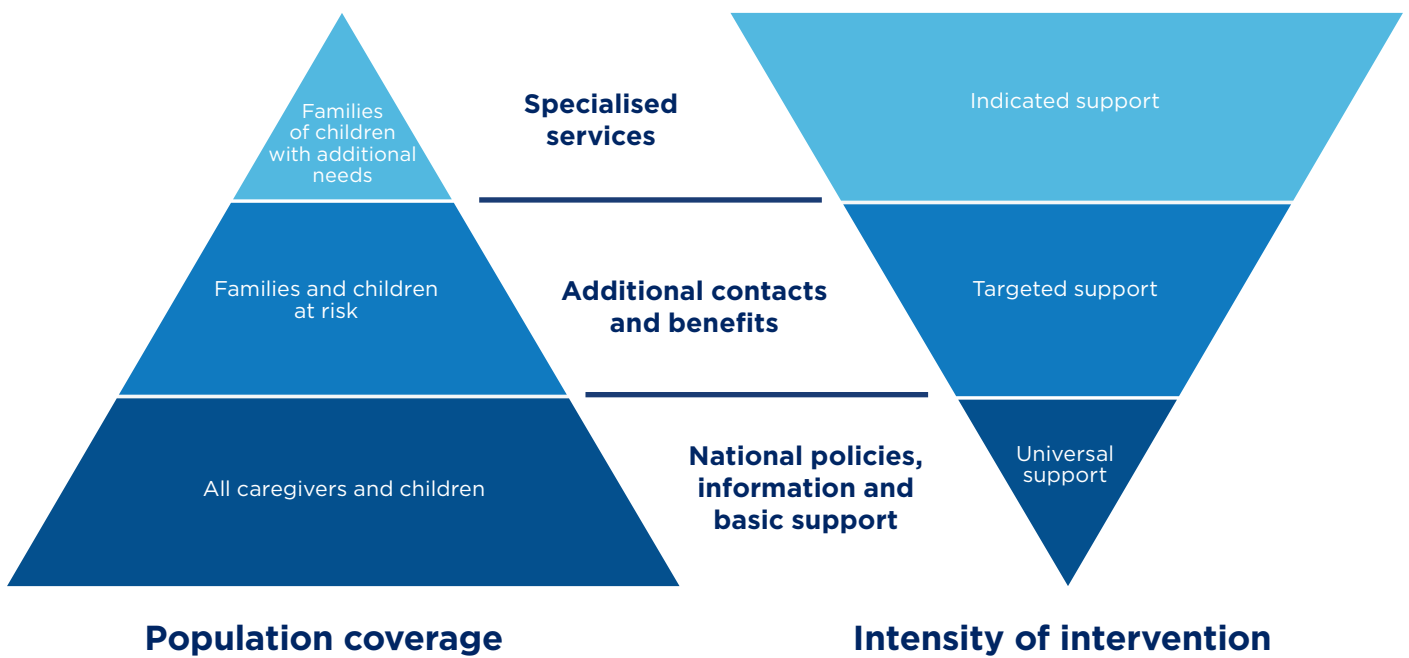


A plan for action

The Brighter Beginnings Initiative

A fair distribution

- A **proportionate universal system** provides **care based on need**.
- Some families need additional support. However, often families with the greatest health needs are the least likely to access services; this is known as the **inverse care law**.
- We need to improve the accessibility of services for vulnerable populations, through **targeted** and **culturally safe** services.



Brighter Beginnings Initiative

The **NSW Government** developed the **Brighter Beginnings Initiative** to give children the best start in life. It aims to:

1. Provide families with **the information they need**, when they need it, to make their decisions.
2. Improve **universal services** that lift the standard of opportunity for all.
3. Target **additional support** to families that need it most.

- NSW Government is **consulting with families** to understand their needs and goals.
- Feedback is being used to **re-design service delivery** to better meet the needs of families.
- NSW Government is working **collaboratively** across human service agencies to grow the evidence base to improve outcomes for families.

**BRIGHTER
BEGINNINGS:
THE FIRST 2000
DAYS OF LIFE**



Together, this will ensure that all children are given the best start to life.

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Baker, S. (2017). Brain development in early childhood [CoLab Evidence Report]. Retrieved from <https://colab.telethonkids.org.au/resources/>

Center on the Developing Child at Harvard University (2016). *From Best Practices to Breakthrough Impacts: A Science-Based Approach to Building a More Promising Future for Young Children and Families*. <http://www.developingchild.harvard.edu>

Committee on Children and Young People, Legislative Assembly, Parliament of New South Wales. Inquiry into Children, Young People and the Built Environment. New South Wales: 2006.

Eapen, V., Walter, A., Guan, J., Descallar, J., Axelsson, E., Einfeld, S., Eastwood, J., Murphy, E., Beasley, D., Silove, N., Dissanayake, C., Woolfenden, S., Williams, K., Jalaludin, B., & The 'Watch Me Grow' Study Group (2017). Maternal help-seeking for child developmental concerns: Associations with socio-demographic factors. *Journal of paediatrics and child health*, 53(10), 963–969. <https://doi.org/10.1111/jpc.13607>

Fox, S., Southwell, A., Stafford, N., Goodhue, R., Jackson, D. and Smith, C. (2015). *Better Systems, Better Chances: A Review of Research and Practice for Prevention and Early Intervention*. Canberra: Australian Research Alliance for Children and Youth (ARACY).

HighScope Educational Research Foundation (2020), *Perry Preschool Project*. <https://highscope.orgperrypreschool-project/>

Moore, T.G., Arefadib, N., Deery, A., Keyes, M. & West, S. (2017). *The First Thousand Days: An Evidence Paper – Summary*. Parkville, Victoria: Centre for Community Child Health, Murdoch Children's Research Institute.

NSW Health: South West Sydney Local Health District (2019). Child Protection in Your Hands Framework.

NSW Ministry of Health (2019). *The First 2000 Days: Conception to Age 5 Framework*. North Sydney, NSW.

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Teager, W., Fox, S. & Stafford, N. (2019). How Australia can invest early and return more: A new look at the \$15b cost and opportunity. Early Intervention Foundation, The Front Project and CoLab at the Telethon Kids Institute, Australia.

World Health Organization, United Nations Children's Fund, World Bank Group. Nurturing care for early childhood development: a framework for helping children survive and thrive to transform health and human potential. Geneva: World Health Organization; 2018.



Brighter Beginnings references

Backend Summary of Evidence for Interventions

intervention	Reference	Key finding
Access to comprehensive antenatal care.	Hollowell, J., Oakley, L., Kurinczuk, J.J., Brocklehurst, P. & Gray, R. (2011). The effectiveness of antenatal care programmes to reduce infant mortality and preterm birth in socially disadvantaged and vulnerable women in high-income countries: a systematic review. <i>BMC Pregnancy Childbirth</i> 11, 13. https://doi.org/10.1186/1471-2393-11-13	Systematic review. The purpose of this review was to evaluate the effectiveness of interventions focused on the delivery or organisation of antenatal care as a means of reducing infant mortality or its three major causes (PTB, congenital anomalies, SIDS/SUDI) in disadvantaged and vulnerable women. Overall, there was insufficient evidence to conclude that these interventions effectively reduce PTB or neonatal mortality, mostly because the quality of evidence was poor and, for most of the interventions considered, there was insufficient evidence to evaluate consistency of findings across multiple studies.
	Catling, C. J., Medley, N., Foureur, M., Ryan, C., Leap, N., Teate, A., & Homer, C.S. (2015). Group versus conventional antenatal care for women. <i>The Cochrane database of systematic reviews</i> , 2015(2), CD007622. https://doi.org/10.1002/14651858.CD007622.pub3	Systematic review. 4 studies included. Group based antenatal care did not differ from standard care in its impact on the pregnancy outcomes of preterm birth, infant birthweight or perinatal mortality. No differences in neonatal intensive care admission, initiation of breastfeeding or spontaneous vaginal birth were observed between groups. In one trial, women who attended group pregnancy care rated their satisfaction as non-significantly higher than women receiving individual care. The number of studies was small; evidence quality varied from low to high.
	Wondemagegn, A. T., Alebel, A., Tesema, C., & Abie, W. (2018). The effect of antenatal care follow-up on neonatal health outcomes: a systematic review and meta-analysis. <i>Public health reviews</i> , 39, 33. https://doi.org/10.1186/s40985-018-0110-y	Systematic review and meta-analysis. 18 studies included. Results showed that antenatal care visits significantly decreased the risk of neonatal mortality (by 34%)
Continuity of antenatal care	Sandall, J., Soltani, H., Gates, S., Shennan, A., & Devane, D. (2016). Midwife-led continuity models versus other models of care for childbearing women. <i>The Cochrane database of systematic reviews</i> , 4, CD004667. https://doi.org/10.1002/14651858.CD004667.pub5	Systematic review to establish whether there are differences in morbidity and mortality, effectiveness and psychosocial outcomes between midwife-led continuity models and other models of care. 15 trials included. Results suggests that women who received midwife-led continuity models of care were less likely to experience intervention and more likely to be satisfied with their care with at least comparable adverse outcomes for women or their infants than women who received other models of care.
	Kroll-Desrosiers, A. R., Crawford, S. L., Moore Simas, T. A., Rosen, A. K., & Mattocks, K. M. (2016). Improving Pregnancy Outcomes through Maternity Care Coordination: A Systematic Review. <i>Women's health issues : official publication of the Jacobs Institute of Women's Health</i> , 26(1), 87-99. https://doi.org/10.1016/j.whi.2015.10.003	Systematic review. 33 observational studies included; study quality varied significantly. Roughly one-third of the included studies reported improved birth weights among care coordination participants.



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Backend Summary of Evidence for Interventions

<p>Prevention and cessation of smoking, alcohol and substance use during pregnancy.</p>	<p>Gaillard, R., Wright, J., & Jaddoe, V. W. V. (2019). Lifestyle intervention strategies in early life to improve pregnancy outcomes and long-term health of offspring: a narrative review. <i>Journal of developmental origins of health and disease</i>, 10(3), 314-321. Retrieved from https://link.lis.curtin.edu.au/cgi-bin/ezproxy/ezpgateway.cgi?url=http://ovidsp.ovid.com/ovidweb.cgi?T=-JS&CSC=Y&NEWS=N&PAGE=fulltext&D=e-mexb&AN=628870063</p>	<p>Narrative review. Despite strong evidence about how adverse maternal lifestyle factors (smoking, alcohol consumption, obesity, poor nutrition) during pregnancy and the post-natal period impact child development, translation to lifestyle interventions aiming to modify these factors has been stunted by a lack of sufficient evidence establishing the efficacy of these interventions in improving mother and child outcomes. Randomised controlled trials evaluating these interventions are scarce, characterised by major limitations and/or do not show strong effects on maternal and offspring outcomes.</p>
	<p>Gould, G. S., Lim, L. L., & Mattes, J. (2017). Prevention and Treatment of Smoking and Tobacco Use During Pregnancy in Selected Indigenous Communities in High-Income Countries of the United States, Canada, Australia, and New Zealand An Evidence-Based Review. <i>Chest</i>, 152(4), 853-866 doi:10.1016/j.chest.2017.06.033</p>	<p>Evidence based review. Effective approaches to encouraging smoking cessation in pregnancy include behavioural counselling and nicotine replacement therapy, however these interventions do not appear to be effective in preventing tobacco use in Indigenous populations in high-income countries.</p>
	<p>Coleman, T., Chamberlain, C., Cooper, S., & Leonardi-Bee, J. (2011). Efficacy and safety of nicotine replacement therapy for smoking cessation in pregnancy: systematic review and meta-analysis. <i>Addiction (Abingdon, England)</i>, 106(1), 52-61. https://doi.org/10.1111/j.1360-0443.2010.03179.x</p>	<p>Systematic review and meta-analysis. Systematic review of 5 RCTs in which NRT was used with or without behavioural support to promote smoking cessation in pregnancy. 5/7 safety outcomes were more positive in infants born to women who underwent NRT, but none reached statistical significance. Authors concluded that there is insufficient evidence to recommend NRT for smoking cessation during pregnancy.</p>
	<p>Lumley, J., Chamberlain, C., Dowswell, T., Oliver, S., Oakley, L., & Watson, L. (2009). Interventions for promoting smoking cessation during pregnancy. <i>The Cochrane database of systematic reviews</i>, (3), CD001055. https://doi.org/10.1002/14651858.CD001055.pub3</p>	<p>Systematic review. This review assessed the effects of smoking cessation interventions during pregnancy on smoking behaviour and perinatal health outcomes. 72 RCTs included. Results showed that smoking cessation interventions in pregnancy significantly reduced the proportion of women who continued to smoke in late pregnancy, but had no significant effect on relapse prevention. Interventions were effective in reducing lowbirthweight and preterm births. There were no statistically significant differences in neonatal intensive care unit admissions, very low birthweight, stillbirths, perinatal or neonatal mortality, but these analyses had very limited power. Providing incentives appeared to be the most effective intervention.</p>



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Backend Summary of Evidence for Interventions

	<p>Naughton, F., Prevost, A. T., & Sutton, S.(2008). Self-help smoking cessation interventions in pregnancy: a systematic review and meta-analysis. <i>Addiction</i> (Abingdon, England), 103(4), 566-579. https://doi.org/10.1111/j.1360-0443.2008.02140.x</p>	<p>Systematic review. 15 trials (randomised and quasi randomised). Primary meta-analysis showed that compared to standard care, self-help smoking cessation interventions nearly doubled the odds of quitting smoking. Unclear whether more intensive interventions are more effective.</p>
<p>Support for carer’s mental health</p>	<p>Dennis, C. L., Ross, L. E., & Grigoriadis, S. (2007). Psychosocial and psychological interventions for treating antenatal depression. <i>The Cochrane database of systematic reviews</i>, (3), CD006309. https://doi.org/10.1002/14651858.CD006309.pub2</p>	<p>Systematic review. This review sought to assess the effects, on mothers and their families, of psychosocial and psychological interventions compared with usual antepartum care in the treatment of antenatal depression. Search for RCTs, only one trial met inclusion criteria. This trial showed that interpersonal psychotherapy, compared to parent education, reduced risk of depressive symptomatology immediately post treatment. The authors concluded that the evidence is insufficient to support recommendations for interpersonal psychotherapy for the treatment of antenatal depression, given that the one trial included was too small (38 women), with a non-generalisable sample, to make any recommendations.</p>
	<p>Dennis, C. L., & Hodnett, E. (2007). Psychosocial and psychological interventions for treating postpartum depression. <i>The Cochrane database of systematic reviews</i>, (4), CD006116. https://doi.org/10.1002/14651858.CD006116.pub2</p>	<p>Systematic review. This review assessed the effects of all psychosocial and psychological interventions, compared with usual postpartum care, in the reduction of postnatal depressive symptomatology. Ten trials included in review (RCTs and q-RT). The main findings were; any psychosocial or psychological intervention, compared to usual postpartum care, was associated with a reduction in the likelihood of continued depression, however measured, at the final assessment within the first year postpartum. Both psychosocial and psychological interventions were effective in reducing depressive symptomatology. Trials selecting participants based on a clinical diagnosis of depression were just as effective in decreasing depressive symptomatology as those that enrolled women based on self-reported depressive symptomatology. Although the methodological quality of trials was generally low, meta-analyses nonetheless suggest that psychosocial and psychological interventions are an effective treatment option for women suffering from postpartum depression.</p>



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Backend Summary of Evidence for Interventions

	<p>Dennis, C. L., & Dowswell, T. (2013). Psychosocial and psychological interventions for preventing postpartum depression. The Cochrane database of systematic reviews, (2), CD001134. https://doi.org/10.1002/14651858.CD001134.pub3</p>	<p>Systematic review. This review examined the effect of diverse psychosocial and psychological interventions compared with usual antepartum, intrapartum, or postpartum care in reducing the risk of developing postpartum depression. 28 RCTs included. Overall, psychosocial and psychological interventions significantly reduced the number of women who develop postpartum depression. Promising interventions include the provision of intensive, professionally-based postpartum home visits, telephone-based peer support, and interpersonal psychotherapy. Professional and lay based interventions were both effective. Interventions initiated post-natally were effective.</p>
	<p>Molyneaux, E., Telesia, L. A., Henshaw, C., Boath, E., Bradley, E., Howard, L. M. (2018). Antidepressants for preventing postnatal depression. <i>Cochrane Database of Systematic Reviews</i>, Issue 4. Art. No.: CD004363. DOI:10.1002/14651858.CD004363.pub3.</p>	<p>Systematic review. This review assessed the effectiveness of antidepressant medication for the prevention of postnatal depression, in comparison with any other treatment, placebo or standard care. 2 RCTs included. Not able to draw conclusions on the effectiveness of antidepressants in preventing postnatal depression, given the small number of studies, small sample sizes, incomplete outcome data due to study drop-out, very low quality evidence, and lack of data on secondary outcomes of interest including child development, the mother-infant relationship, breastfeeding, maternal daily functioning, family relationships or maternal satisfaction.</p>
<p>Education and support programs for early initiation, exclusive breastfeeding.</p>	<p>Abbass-Dick, J., Brown, H. K., Jackson, K. T., Rempel, L., & Dennis, C. L. (2019). Perinatal breastfeeding interventions including fathers/partners: A systematic review of the literature. <i>Midwifery</i>, 75, 41-51. https://doi.org/10.1016/j.midw.2019.04.001</p>	<p>Systematic review of 12 studies. The inclusion of fathers/partners in breastfeeding interventions improves breastfeeding initiation, duration, and exclusivity rates. Interventions that include face-to-face information delivery, are designed in a culturally appropriate manner, and provide information on how partners can support breastfeeding are more likely to have a beneficial effect.</p>



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Backend Summary of Evidence for Interventions

	<p>Arikpo, D., Edet, E. S., Chibuzor, M. T., Odey, F., & Caldwell, D. M. (2018). Educational interventions for improving primary caregiver complementary feeding practices for children aged 24 months and under. <i>The Cochrane database of systematic reviews</i>, 5(5), CD011768. https://doi.org/10.1002/14651858.CD011768.pub2</p>	<p>Systematic review and meta-analysis. 23 RCTs. Educational interventions targeting complementary feeding practices reduced the number of caregivers that introduced semi-solid foods to their infants before six months of age by up to 12% (moderate-quality evidence). Hygiene practices of caregivers who received education also showed some improvement compared to those that did not (moderate-quality evidence). In studies conducted in the community, education increased the duration of exclusive breastfeeding, but not in studies conducted in health facilities. There was no convincing evidence of an effect of education on the growth of children (low to very low-quality evidence).</p>
	<p>Balogun, O. O., O’Sullivan, E. J., McFadden, A., Ota, E., Gavine, A., Garner, C. D., Renfrew, M. J., & MacGillivray, S. (2016). Interventions for promoting the initiation of breastfeeding. <i>The Cochrane database of systematic reviews</i>, 11(11), CD001688. https://doi.org/10.1002/14651858.CD001688.pub3</p>	<p>Systematic review. 28 randomised controlled trials included, mixed quality. Compared to standard care, both healthcare professional led and non-healthcare professional led breastfeeding education and support interventions improved rates of breastfeeding initiation.</p>
	<p>Cheng, L. Y., Wang, X., & Mo, P. K. (2019). The effect of home-based intervention with professional support on promoting breastfeeding: a systematic review. <i>International journal of public health</i>, 64(7), 999-1014. https://doi.org/10.1007/s00038-019-01266-5</p>	<p>Systematic review of 26 studies. Home-based interventions with professional support are supported by robust evidence to suggest they improve breastfeeding outcomes, particularly the rate and duration of exclusive breastfeeding.</p>
	<p>Chetwynd, E. M., Wasser, H. M., & Poole, C. (2019). Breastfeeding Support Interventions by International Board Certified Lactation Consultants: A Systemic Review and Meta-Analysis. <i>Journal of human lactation: official journal of International Lactation Consultant Association</i>, 35(3), 424-440. https://doi.org/10.1177/0890334419851482</p>	<p>Systemic Review and Meta-Analysis. 17 interventions included. Breastfeeding interventions that include lactation consultant support in the postpartum period have the potential to improve breastfeeding outcomes. For any breastfeeding at 6 months, the pooled difference was 0.08, meaning we’d expect to observe 1 additional case of any breastfeeding at 6 months postpartum for every 12 women who received an IBCLC intervention. Designand timing of breastfeeding measures lacked consistency.</p>



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Backend Summary of Evidence for Interventions

	<p>Kim, S. K., Park, S., Oh, J., Kim, J., & Ahn, S. (2018). Interventions promoting exclusive breastfeeding up to six months after birth: A systematic review and meta-analysis of randomized controlled trials. <i>International journal of nursing studies</i>, 80, 94-105. https://doi.org/10.1016/j.ijnurstu.2018.01.004</p>	<p>Systematic review and meta-analysis. 27 RCTs examining the efficacy of breastfeeding support interventions to promote exclusive breastfeeding in the first 6 months after birth. The effectiveness of breastfeeding support interventions to promote EBF for 6 months was significant (odds ratio [OR] = 2.77;95% confidence interval [CI]: 1.81-3.76). A further subgroup analysis of intervention effects shows that a baby friendly hospital initiative (BFHI) intervention (OR = 5.21; 95% CI: 2.15-12.61), a combined intervention (OR = 3.56; 95% CI:1.74-7.26), a professional provider led intervention (OR = 2.76;95% CI: 1.76-4.33), having a protocol available for the provider training program (OR = 2.87; 95% CI:1.89-4.37) and implementation during both the prenatal and postnatal periods (OR = 3.32; 95% CI: 1.83-6.03) increased the rate of EBF for 6 months.</p>
	<p>Lumbiganon, P., Martis, R., Laopaiboon, M., Festin, M. R., Ho, J. J., & Hakimi, M. (2011). Antenatal breastfeeding education for increasing breastfeeding duration. <i>The Cochrane database of systematic reviews</i>, (11), CD006425. https://doi.org/10.1002/14651858.CD006425.pub2</p>	<p>Systematic review. 24 RCTs. Antenatal breastfeeding education (including peer counselling, lactation consultation, formal BF education during pregnancy) does not appear to improve uptake of breastfeeding or breastfeeding duration.</p>
<p>Nutritional interventions for mums and babies. This includes micronutrient supplementation for those who need it, as well as management of obesity in both mothers and children.</p>	<p>Petry, N., Olofin, I., Boy, E., Donahue Angel, M., & Rohner, F. (2016). The Effect of Low Dose Iron and Zinc Intake on Child Micronutrient Status and Development during the First 1000 Days of Life: A Systematic Review and Meta-Analysis. <i>Nutrients</i>, 8(12). Retrieved from https://link.lis.curtin.edu.au/cgibin/ezproxy/ezpgateway.cgi?url=http://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=emed17&AN=615251467</p>	<p>Systemic Review and Meta-Analysis. Delivering iron or zinc in doses up to the recommended nutrient intake (RNI) levels to children aged 6 - 23 months of age has a positive effect on child iron and zinc status, including reducing the risk of anaemia by 41%, iron deficiency by 78% and iron deficiency anemia by 90%, but has no effect on growth or psychomotor development.</p>
	<p>Vaivada, T., Gaffey, M. F., & Bhutta, Z. A. (2017). Promoting early child development with interventions in health and nutrition: A systematic review. <i>Pediatrics</i>, 140 (2) (no pagination)(e20164308). Retrieved from https://link.lis.curtin.edu.au/cgibin/ezproxy/ezpgateway.cgi?url=http://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=emed18&AN=617625455</p>	<p>Systematic review. Authors found that food and micronutrient supplementation for mothers reduced the risk of small for gestational age and iodine deficiency. Strategies to reduce iron deficiency anaemia in infancy were also particularly effective. However, although various health and nutritional interventions reduced morbidity and improved child growth and nutritional status, there was limited evidence of their direct impact on child developmental outcomes.</p>



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	<p>Ota, E., Hori, H., Mori, R., Tobe-Gai, R., & Farrar, D. (2015). Antenatal dietary education and supplementation to increase energy and protein intake. <i>The Cochrane database of systematic reviews</i>, (6), CD000032. https://doi.org/10.1002/14651858.CD000032.pub3</p>	<p>Systemic Review. 17 trials included. This review provides encouraging evidence that antenatal nutritional education with the aim of increasing energy and protein intake in the general obstetric population appears to be effective in reducing the risk of preterm birth, low birthweight, increasing head circumference at birth, increasing birthweight among undernourished women, and increasing protein intake. Balanced energy and protein supplementation seems to improve fetal growth, and may reduce the risk of stillbirth and infants born small-for-gestational age. High-protein supplementation does not seem to be beneficial and may be harmful to the fetus. Balanced-protein supplementation alone had no significant effects on perinatal outcomes.</p>
<p>Universal parenting programs, to promote caregiver sensitivity and responsiveness.</p>	<p>Pontoppidan, M., Klest, S. K., Patras, J., & Rayce, S. B. (2016). Effects of universally offered parenting interventions for parents with infants: a systematic review. <i>BMJ Open</i>, 6(9), e011706. Retrieved from https://link.lis.curtin.edu.au/cgibin/ezproxy/ezpgateway.cgi?url=http://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=medp&AN=27683513</p>	<p>Systematic review and meta-analysis. 14 RCTs examining universally offered parenting interventions for parents with infants 0 - 12 months in OECD countries. Found no conclusive evidence of their benefit to child development outcomes or the parent-child relationship.</p>
	<p>Peacock-Chambers, E., Ivy, K., & Bair-Merritt, M. (2017). Primary care interventions for early childhood development: A systematic review. <i>Pediatrics</i>, 140 (6) (no pagination) (e20171661). Retrieved from https://link.lis.curtin.edu.au/cgibin/ezproxy/ezpgateway.cgi?url=http://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=emed18&AN=619680461</p>	<p>Systematic review of 48 studies including 24 interventions administered in primary care settings to improve parenting behaviours. Many interventions showed benefits for parenting behaviours and child developmental outcomes, including reduced developmental delay, improved cognitive development scores, improved behavioural intensity and reduced behavioural problems. Whilst many of these interventions may show benefits to child development, heterogeneity in the outcomes measures makes it difficult to compare between programs and firmly establish their efficacy.</p>
	<p>Amin, N. A. L., Tam, W. W. S., & Shorey, S. (2018). Enhancing first-time parents' self-efficacy: A systematic review and meta-analysis of universal parent education interventions' efficacy. <i>International Journal of Nursing Studies</i>, 82, 149-162. Retrieved from https://link.lis.curtin.edu.au/cgibin/ezproxy/ezpgateway.cgi?url=http://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=emed19&AN=624929005</p>	<p>Systematic review and meta-analysis. 10 RCTs included. Universal parent education interventions aimed at enhancing first time parent self-efficacy are supported by robust evidence to indicate their efficacy ($p < 0.001$), and these benefits are maintained over time ($p < 0.0001$). Longer parenting programs (> 10 weeks) produced larger benefits (SMD = 0.71, $p < 0.001$) than shorter interventions (SMD = 0.41, $p < 0.001$).</p>



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	<p>Rayce, S. B., Rasmussen, I. S., Klest, S. K., Patras, J., & Pontoppidan, M. (2017). Effects of parenting interventions for at-risk parents with infants: A systematic review and meta-analyses. <i>BMJ Open</i>, 7 (12) (no pagination)(e015707). Retrieved from https://link.lis.curtin.edu.au/cgi-bin/ezproxy/ezpgateway.cgi?url=http://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=emed18&AN=623794041</p>	<p>Systematic review and meta-analysis, 16 RCTs included. parenting interventions offered to at-risk families (e.g. experiencing poverty) in the first year of the child's life appear to improve child behaviour, the parent-child relationship and maternal sensitivity, with effect sizes ranging from small to medium. There do not appear to be benefits for child internalising or externalising behaviour.</p>
	<p>Rayce, S. B., Rasmussen, I. S., Vaever, M. S., & Pontoppidan, M. (2020). Effects of parenting interventions for mothers with depressive symptoms and an infant: systematic review and meta-analysis. <i>BJPsych Open</i>, 6(1), e9. Retrieved from https://link.lis.curtin.edu.au/cgi-bin/ezproxy/ezpgateway.cgi?url=http://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=prem&AN=31928569</p>	<p>Systematic review of 7 RCTs. Concluded that there is little evidence to support the efficacy of parenting interventions for mothers experiencing depressive symptoms in improving either the parent-child relationship or child development outcomes.</p>
<p>Home visiting programs.</p>	<p>Filene, J. H., Kaminski, J. W., Valle, L. A., & Cachat, P. (2013). Components associated with home visiting program outcomes: a meta-analysis. <i>Pediatrics</i>, 132 Suppl 2(0 2), S100-S109. https://doi.org/10.1542/peds.2013-1021H</p>	<p>Meta-analysis of 51 studies. Impact of universal and selective home visiting programs on 6 outcomes: birth outcomes, parenting behaviour and skills, maternal life course, child cognitive outcomes, child physical health, and child maltreatment. Mean effect sizes were significant and positive for 3 of the 6 outcome domains (maternal life course outcomes, child cognitive outcomes, and parent behaviours and skills). No consistent pattern of effective intervention components emerged.</p>
	<p>Peacock, S., Konrad, S., Watson, E. et al. Effectiveness of home visiting programs on child outcomes: a systematic review. <i>BMC Public Health</i> 13, 17 (2013). https://doi.org/10.1186/1471-2458-13-17</p>	<p>Systematic review. RCTs. Significant improvements to the development and health of young children as a result of a home-visiting program are noted for particular groups. These include: (a) prevention of child abuse, particularly when the intervention is initiated prenatally; (b) developmental benefits to cognition and problem behaviours, and less consistently, language skills; and (c) reduced incidence of low birth weights and health problems in older children, increased incidence of appropriate weight gain in early childhood.</p>
	<p>Sweet, M. A., & Appelbaum, M. I. (2004). Is home visiting an effective strategy? A meta-analytic review of home visiting programs for families with young children. <i>Child development</i>, 75(5), 1435-1456. https://doi.org/10.1111/j.1467-8624.2004.00750.</p>	<p>Meta analytic review. Home visiting programs had positive effects on parenting behaviours, parent attitudes, child socioemotional and cognitive outcomes, and lower rates of abuse; small effect sizes. No one program characteristic consistently affected effect sizes across outcome groups; it remains unclear what specific program characteristics make an intervention effective.</p>



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<p>Supported playgroups</p>	<p>Williams, K.E., Berthelsen, D., Nicholson, J.M., & Viviani, M. (2015). Systematic literature review: Research on Supported Playgroups. Brisbane, Australia: Queensland University of Technology.</p>	<p>Systematic literature review. This review synthesised evidence of the effectiveness of supported playgroups to improve child, parent and community outcomes. 34 research publications included; 29 different programs; experimental and non-experimental designs. Lack of rigorous research limits conclusions that we can draw on the efficacy of these interventions in improving outcomes, although many studies demonstrated the potential promise of these interventions.</p>
<p>Mental health programs for young children</p>	<p>Landa R. J. (2018). Efficacy of early interventions for infants and young children with, and at risk for, autism spectrum disorders. <i>International review of psychiatry</i> (Abingdon, England), 30(1), 25-39. https://doi.org/10.1080/09540261.2018.1432574</p>	<p>Literature review. Review of ASD early intervention (EI) literature, focussing on efficacy studies published within the past 15 years. The evidence indicates that young children with ASD benefit from EI, particularly when a parent-coaching intervention is provided. Evidence supports combining parent-mediated and direct clinician-implemented intervention to maximize child developmental gains. Younger age at intervention enrolment and greater intervention intensity were predictors of better outcomes.</p>
	<p>Reichow, B., Hume, K., Barton, E. E., Boyd, B. A. (2018). Early intensive behavioral intervention (EIBI) for young children with autism spectrum disorders (ASD). <i>Cochrane Database of Systematic Reviews</i>, Issue 5. Art. No.: CD009260. DOI: 10.1002/14651858.CD009260.pub3.</p>	<p>Systematic review. Five studies (4 CCTs, 1 RCT). Evidence that at post-treatment EIBI improves adaptive behaviour but not autism symptom severity. Some evidence that EIBI improves IQ and receptive and expressive language, but does not improve problem behaviour. Overall there is weak evidence to suggest EIBI may be an effective treatment for young children with ASD (quality of evidence was rated as low-very-low).</p>
	<p>Oono, I. P., Honey, E. J., & McConachie, H. (2013). Parent-mediated early intervention for young children with autism spectrum disorders (ASD). The Cochrane database of systematic reviews, (4), CD009774. https://doi.org/10.1002/14651858.CD009774.pub2</p>	<p>Systematic review. Review of 17 studies. Overall, the authors did not find statistical evidence of gains from parent-mediated interventions in most of the primary outcomes assessed (most aspects of language and communication; frequency of child initiations in observed parent-child interaction; child adaptive behaviour; parents' stress), with findings largely inconclusive and inconsistent across studies. The review however finds some evidence for the effectiveness of parent-mediated interventions on patterns of parent child interaction; on more distal indicators of child language comprehension; and reduction in autism severity. Small effect sizes and wide CIs.</p>



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<p>Universal access to affordable, high quality early education.</p>	<p>Blewitt, C., Fuller-Tyszkiewicz, M., Nolan, A., Bergmeier, H., Vicary, D., Huang, T., . . . Skouteris, H. (2018). Social and Emotional Learning Associated With Universal Curriculum-Based Interventions in Early Childhood Education and Care Centers A Systematic Review and Meta-analysis. <i>JAMA Network Open</i>, 1(8). doi:10.1001/jamanetworkopen.2018.5727</p>	<p>Systematic review (79 studies) and meta-analysis (63 studies). Compared to controls, children aged 2 - 6 who received universal curriculum-based socioemotional learning interventions in early childhood centre contexts had improved social competence (Cohen d = 0.30, p < .001), emotional competence (Cohen d = 0.54, p < .001), behavioural selfregulation (Cohen d = 0.28, p < .001), and early learning skills (Cohen d = 0.18, p = .03), as well as reduced behavioural and emotional challenges (Cohen d = 0.19, p < .001). Programs delivered by facilitators, specialists, or researchers appeared more effective than those delivered by classroom teachers.</p>
	<p>Murano, D., Sawyer, J. E., & Lipnevich, A. A. (2020). A Meta-Analytic Review of Preschool Social and Emotional Learning Interventions. <i>Review of Educational Research</i>, 90(2), 227-+. doi:10.3102/0034654320914743</p>	<p>This meta-analysis summarised the effects of universal and targeted social and emotional learning (SEL) interventions in 48 studies on the development of social and emotional skills and the reduction of problem behaviors in preschool students. For universal SEL interventions delivered to all students, there were small to medium effects for the overall development of social and emotional skills (Hedges's g = .34) and for the reduction of problem behaviors (g = .32). For targeted interventions, delivered to at risk students identified as being in need of additional supports, there were medium effects for the overall development of social and emotional skills (Hedges's g = .44) and for the reduction of problem behaviors (g = .50).</p>
	<p>Hahn, R. A., Barnett, W. S., Knopf, J. A., Truman, B. I., Johnson, R. L., Fielding, J. E., . . . Hunt, P. C. (2016). Early Childhood Education to Promote Health Equity: A Community Guide Systematic Review. <i>Journal of public health management and practice : JPHMP</i>, 22(5), E1-E8. Retrieved from https://link.lis.curtin.edu.au/cgibin/ezproxy/ezpgateway.cgi?url=http://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=emed17&AN=621056917</p>	<p>Community Guide Systematic Review. This review found evidence that centre-based early childhood education programs improve educational, social and health-related outcomes for low-income and minority children aged 3 and 4 years. For children who underwent intervention compared to control children, there were increases in standardised test scores and high school graduation, and decreases in grade retention and special education assignment, decreases in crime and teen births) and increases in emotional self-regulation and emotional development. This represents a promising strategy for advancing health equity.</p>
<p>Prevention of domestic and family violence.</p>	<p>Jahanfar, S., Janssen, P. A., Howard, L. M., & Dowswell, T. (2013). Interventions for preventing or reducing domestic violence against pregnant women. <i>The Cochrane database of systematic reviews</i>, (2), CD009414. https://doi.org/10.1002/14651858.CD009414.pub2</p>	<p>Systematic review. 10 RCTs included in analysis. There was insufficient evidence to judge the effectiveness of interventions in preventing or reducing domestic violence against pregnant women. Lack of data and heterogeneity in how outcomes were reported limits ability to draw conclusions about the efficacy of these interventions.</p>



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	<p>O'Doherty, L., Hegarty, K., Ramsay, J., Davidson, L. L., Feder, G., & Taft, A. (2015). Screening women for intimate partner violence in healthcare settings. <i>The Cochrane database of systematic reviews</i>, 2015(7), CD007007. https://doi.org/10.1002/14651858.CD007007.pub3</p>	<p>Systematic review. 13 RCTs. The evidence shows that screening in healthcare settings (antenatal care, maternal health services, emergency departments) increases the identification of women experiencing intimate partner violence. However whilst pregnant women in antenatal settings may be more likely to disclose IPV when screened, there was no evidence of an effect for other outcomes (referral, reexposure to violence, health measures, harm arising from screening).</p>
<p>Supporting housing stability.</p>	<p>Slopen, N., Fenelon, A., Newman, S., & Boudreaux, M. (2018). Housing Assistance and Child Health: A Systematic Review. <i>Pediatrics</i>, 141(6), e20172742. https://doi.org/10.1542/peds.2017-2742</p>	<p>Systematic review. 14 controlled trials. Unclear relationship between housing assistance and child health outcomes (weight and other body measures, emotional and behaviour problems, general health, violence, birth weight, substance use). No clear conclusions can be drawn.</p>