



FIRST 1,000 DAYS

NUTRITION MATTERS FOR LIFELONG HEALTH

Practical tips from preconception
through to toddlerhood



The first 1,000 days

A CRITICAL WINDOW OF OPPORTUNITY TO INFLUENCE YOUR CHILD'S LIFELONG HEALTH

The beginning of a new life is an amazing time, when a child's whole future is before them. You may not realise the positive and practical steps you can take – from before you conceive until your child is a toddler – to influence their long term health.

Shaping long term health isn't just about genetics. Whilst your baby's DNA is inherited, the way their genes behave can be strongly influenced by their environment. Nutrition during their early life is a key factor that can positively shape your child's future health.

The PSANZ Early Life Nutrition Coalition is a group of academics, healthcare professionals, educators and advisors who are committed to improving nutritional intake prior to conception, throughout pregnancy, during infancy and into toddlerhood.

This period – known as the First 1,000 Days – provides a window of opportunity where a healthy environment, particularly good nutrition, can reduce your child's risk of disease, notably obesity and allergy, in later life.

The PSANZ Early Life Nutrition Coalition believes every child deserves the best possible start to life and is pleased to provide practical recommendations on how you can make the most of these first 1,000 days.

The information provided in this booklet is not intended to replace advice from a healthcare professional.

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Before conception

Even when your child is just a twinkle in your eye, the foundations for their later health are being laid. Your weight and diet before conceiving can influence a successful conception, and are important for a healthy pregnancy and birth, and the health of your child through infancy and beyond.



Create the best future for your child, through your own diet and lifestyle

ENCOURAGE A HEALTHY WEIGHT FOR LIFE

The weight of both partners before conception is important. A GP can check your BMIs (Body Mass Indices) to see they're within a healthy range.

Women with a healthy BMI have a lesser risk of developing gestational diabetes, which in turn helps decrease the risk of diabetes and excessive weight gain in later life.

A man's BMI can affect his sperm health and influence his partner's chances of falling pregnant. Healthy weight in males is linked to normal development of the unborn child and reduced risk of miscarriage.

PRE-PREGNANCY CHECKLIST

- ☐ Check you and your partner's BMI and ensure they're within the healthy weight range.
- ☐ Get any existing health conditions under control (if you have type 2 diabetes, ensure you have good glycaemic control).
- ☐ Check your nutritional status with a GP before conceiving.
- ☐ Take a folic acid and iodine supplement whilst trying to conceive.



Pregnancy

There are particular aspects of health to be aware of during pregnancy. The conditions you help create through your own nutrition and lifestyle can make all the difference to your child's lifelong health, including reducing their risk of developing obesity and allergies.



Now they're on their way, do all you can to positively influence their lifelong health

ENCOURAGE A HEALTHY WEIGHT FOR LIFE

A baby's birth weight can be a predictor of future health. Mothers can help influence a healthy birth weight in their baby by gaining pregnancy weight at levels recommended for your starting BMI.

1. Weight gain through pregnancy

Eating for two is a myth, and restrictive dieting throughout pregnancy is also not recommended. Gaining weight at the recommended rate is associated with reducing the risk of overweight and obesity in later life. Australian Guidelines suggest there should be no, or minimal, weight gain in the first trimester.

2. Healthy birth weight

Maternal weight affects the baby's weight at birth, which is strongly linked to later metabolic risk in the child.

While monitoring your own weight gain, your healthcare professional will also monitor the baby's growth in the womb to ensure it is within a healthy range.

Use the table below to help keep your weight gain healthy throughout your pregnancy.

Pre-pregnancy Body Mass Index (BMI)*	Recommended total weight gain
Less than 18.5	12.5 to 18 kg
18.5 to 24.9	11.5 to 16 kg
25 to 29.9	7 to 11.5 kg
More than 30	5 to 9 kg

*Your BMI = Your Weight (kg)/Height (m)²

HELP PROTECT AGAINST ALLERGIES

A mother's nutrition through pregnancy may reduce her child's susceptibility to allergic disease in later life. Below, you will find several areas mums can focus on to potentially protect their child against allergies:

1. Build a healthy gut flora

A healthy balance of the 'gut flora' is essential for development of a healthy immune system. A mother's gut flora is likely to be transferred from mother to child during pregnancy. This means a healthy balance of microorganisms in a mother's gut may be important for the child's later health. It's been shown that infants with allergic disease and infants born via C-section have an altered gut flora in early life.

Probiotic (good) bacteria can help build gut flora. Foods containing probiotics, like yoghurt, are a good choice during pregnancy.

Prebiotics are specific foods for probiotics, so eating prebiotic foods keeps the good gut bacteria thriving. Not all fibres are prebiotics! Vegetables like Jerusalem artichokes, asparagus, onions, and fruits like bananas and kiwifruit are good sources.



2. Eat foods containing omega-3

Long chain polyunsaturated fatty acids such as omega-3 DHA* and EPA; found in oily fish like tuna and salmon, have anti-inflammatory properties that may lower the risk of allergic disease in the infant. Aim for two to three serves of fish per week, but watch out for mercury levels in certain fish, such as swordfish, deep sea perch and shark. Omega-3 fatty acids can also be found in other foods such as nuts, seeds and wild rice.



*Docosahexaenoic Acid; *Eicosapentaenoic Acid.

3. Include potentially allergenic foods in your diet

Current guidelines recommend there's no need to steer clear of potentially allergenic foods in your diet (e.g. nuts and nut products, dairy, seafood and eggs), as this has not been shown to prevent allergies in a child. Avoidance restricts your exposure to a wider variety of foods during pregnancy. Only avoid these foods if you're allergic yourself.

4. Vitamin D levels

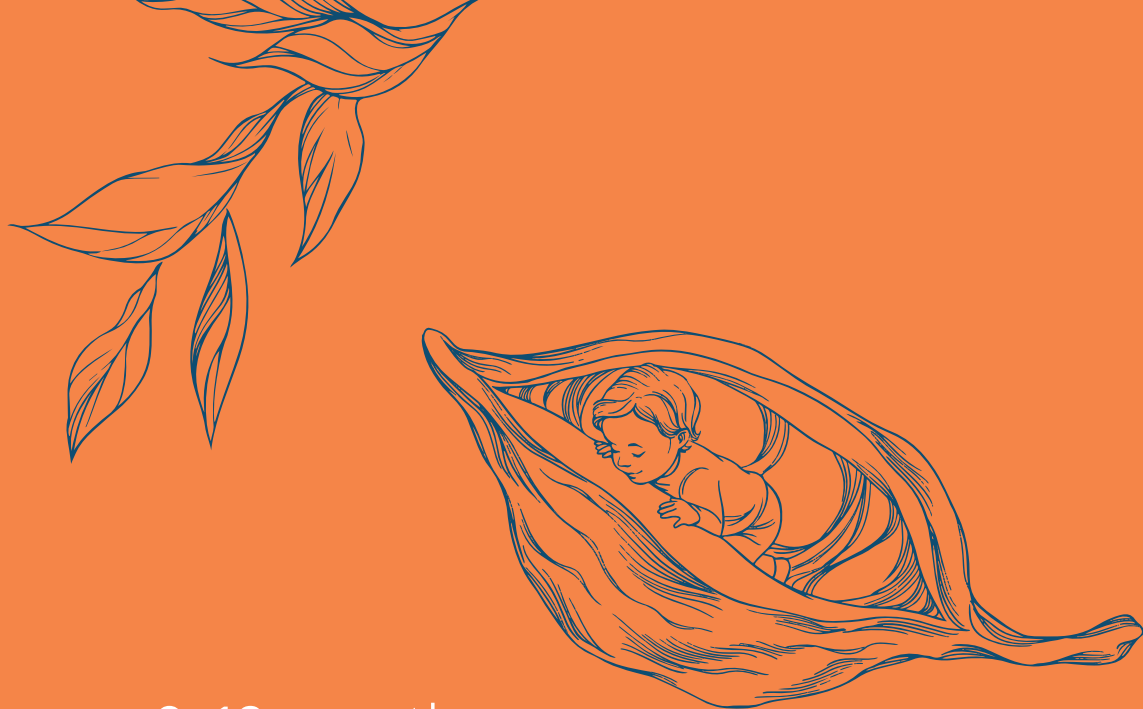
It's important that you have enough stores of vitamin D during pregnancy. Low levels of vitamin D have been associated with higher prevalence of allergic disease. Low levels of vitamin D are common in pregnant women. Mothers who wear a veil, have dark skin, use sunscreen often or are overweight should see a healthcare professional about their vitamin D levels.



PREGNANCY CHECKLIST

- ☐ Monitor weight gain (see above); get weighed regularly by your healthcare professional and discuss any issues.
- ☐ Don't avoid potentially allergenic foods.
- ☐ Go for plenty of prebiotics and probiotics in your diet.
- ☐ Eat 2–3 servings of oily fish each week.
- ☐ Take folic acid until the end of the first trimester.
- ☐ Take a 150 mcg iodine supplement each day throughout your pregnancy.
- ☐ If you're at risk of low vitamin D, check with your healthcare professional about supplementation.





0-12 months

What a child eats during their first years and the taste preferences they establish at this time have a significant impact on their future health.

Some practical tips and advice follow, to help you through this crucial time.



Give them the best nutritional start for their future health

BREASTFEED AS LONG AS POSSIBLE

Breastfeeding is one of the single most important ways to improve a child's lifelong health: from promoting growth and development, to protecting against obesity and other non-communicable diseases, to enhancing mother-child bonding. Whether it's exclusive or partial, for months or for years, every feed of breast milk brings benefits.

It's recommended that, if you can, breastfeed exclusively for your baby's first 6 months, then continue to partially breastfeed (while introducing solid foods) up to 2 years of age or beyond.

The amount you eat while breastfeeding matters too. Typically, exclusively breastfeeding mums need an additional 2,000–2,100 kJ per day on top of the recommended daily intake for women. That's around one extra sandwich per day. (Think 2 slices of whole grain bread with tomato, lettuce, egg and tuna.) Keeping up your energy intake may help prolong milk production.



ENCOURAGE A HEALTHY WEIGHT FOR LIFE

1. Breastfeed for healthier weight gain

It's been shown breastfed babies gain weight at a slower, steadier rate than formula-fed babies. This may help reduce weight issues and obesity risk when they're older.

2. Eat a varied diet

A mother's diet while breastfeeding can help shape her child's food preferences in later life. So consume a wide variety of healthy food while breastfeeding.

HELP PROTECT AGAINST ALLERGIES

1. Introduce solids at the recommended time

When your infant is ready, at around 6 months, start to introduce a variety of solid foods, starting with iron-rich foods, such as iron-fortified cereal and minced meat, while continuing breastfeeding.

2. Include potentially allergenic foods in their solids



All infants, including those at high risk of allergy, should be given potentially allergenic solid foods – including peanut butter, cooked egg, dairy and wheat products – in the first year of life. Carefully monitor any reactions to potentially allergenic foods, and consult your healthcare professional for advice.





0–12 MONTHS CHECKLIST

- ☐ Every feed of breast milk provides a benefit, so breastfeed as much and as long as you're able to. Long term breastfeeding benefits the mother by reducing the risk of developing breast and ovarian cancer, diabetes and cardiovascular diseases.
- ☐ Remember, breastfeeding is supported by law in Australia and New Zealand. Know your rights and talk to your employer about your breastfeeding options.
- ☐ Eat well and widely while breastfeeding. Ensure you keep up with your extra energy requirements while exclusively breastfeeding (around one extra sandwich per day).
- ☐ Introduce solids at around 6 months.
- ☐ Include potentially allergenic foods in your and your baby's diet (especially while introducing solids to your baby).





1–3 years

Your toddler is now becoming a little person, growing fast and learning fast. They need a varied diet, with more and more solids, to get the nutrients they need for healthy growth and development.

This is a great time to role model and set healthy behaviours for life! Parents can have a huge influence in opening toddlers up to broad food tastes, and setting good examples for them to follow.



Ensure the lifelong patterns established now are healthy ones

ENCOURAGE A HEALTHY WEIGHT FOR LIFE


As a parent, try to stick to healthy patterns of eating and physical activity yourself, so you can be a role model for your child.

The first two or three years after birth are critical for establishing their lifelong regulation of energy. They need a regular routine, eating as part of the family with serving sizes tailored to their appetite.


Steer clear of foods low in nutrients and high in saturated fat or sugar – think about nutritional value over quantities of food.

Toddlers may also go through a picky eating stage. Did you know it could take over 10 exposures to a new food before a child will give it a go? Whilst it can be frustrating when carefully cooked foods are rejected, it's important to persevere and continue to offer a wide variety of foods.

The activities of food shopping, preparing ingredients, cooking, and eating the same foods together are crucial role modelling opportunities that can help create a child's healthy food preferences and habits.



12-36 MONTHS CHECKLIST

- ☐ Breastfeed as long as you can.
 - ☐ Give nutrient-dense meals, tailored to their appetite.
 - ☐ Offer a wide variety of tastes and textures.
 - ☐ If they're picky, persevere. It can take up to 10 times before some foods are accepted.
 - ☐ Get them into a regular routine, eating as part of the family.
 - ☐ Make sure you and other family members are great role models for your little ones.
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NUTRIENTS

Some additional information on key nutrients during the first 1,000 days to help you positively influence your child's lifelong health

Changing nutrient requirements from

Throughout the journey from preconception to pregnancy and beyond
Below is a summary of specific nutrients that are important by stage, along

	Preconception	1st Trimester	2nd Trimester	3rd Trimester
Iodine ¹	✓	✓	✓	
Folic acid ¹	✓	✓		
Iron ²		✓	✓	
Vitamin D3 ³		✓	✓	
Omega-3 ⁴		✓	✓	

*1. RANZCOG Vitamin and Mineral supplementation and Pregnancy November 2014. § See <http://www.foodauthority.nsw.gov.au> for Australia and New Zealand (2015) available at www.nrv.gov.au, last accessed 8 March 2016. 2. Australian Dietary Guidelines (2013). 3. Vitamin D and health in pregnancy, infants, children and adolescents in Australia and New Zealand: a position statement (2014). 4. Omega-3 fatty acids and pregnancy outcomes: a systematic review (2014).

From preconception to breastfeeding

When breastfeeding, your nutritional intake requirements will vary.
with the recommended intake (through food sources or supplementation).

Trimester	breastfeeding	
✓	✓	*150 mcg daily supplementation throughout.
		At least 400 mcg daily supplementation from 12 weeks before conception and throughout the first trimester.
✓		Iron is important during pregnancy, try to include 2 servings of iron rich foods daily. Including a regular source of iron rich food continues to be important while breastfeeding.
✓	✓	Check your levels with your doctor for supplementation advice.
✓	✓	Aim to eat 2–3 servings per week of oily fish throughout pregnancy and breastfeeding. Oily fish are excellent sources of omega-3 DHA [§]

www.eatforhealth.gov.au/foodsafetyandyou/life-events-and-food/pregnancy/mercury-and-fish **Sources:** 1. Nutrient Reference Values Guidelines (2015) available at www.eatforhealth.gov.au, last accessed 8 March 2016. 3. Paxton *et al*, 2013. MJA 198 statement 4. World Association of Perinatal Medicine. Koletzko *et al*, 2008. J Perinat Med. 2008;36(1):5–14.

Iodine

Getting adequate iodine helps ensure a baby's normal thyroid function, and may also help with cognitive and physical development. Iodine levels may also play a role in preventing pregnancy loss. That's why a daily supplement of 150 µg/0.15 mg is recommended from preconception, throughout pregnancy and as long as you breastfeed.

Women diagnosed with a thyroid condition or who consume seaweed soup daily should check with a healthcare professional before taking extra iodine.

Folic acid

Taking folic acid has been clinically shown to reduce the risk of spina bifida and other development problems in a baby's central nervous system.

At least a month before conception, start taking a folic acid supplement of at least 400 µg/0.4 mg. Keep taking it until the end of the first trimester. (There's no benefit in continuing supplementation after this time.)

You should speak with a healthcare professional if you're on anticonvulsant medication, are overweight, have type 2 diabetes, or have previously had a child with neural tube defects (NTD).

Iron

Pregnancy can deplete a mother's iron stores. Therefore, it is important to have an appropriate intake of iron to help build and maintain these stores. Low iron levels in early pregnancy have been linked to premature birth and low birth weight and increase risk of anemia in the mother.

Red meat is the best source of iron then chicken and fish. Iron can also be found in leafy green vegetables, legumes and iron-enriched breakfast cereal. However, it is not as easily absorbed as meat sources, so consume a range of iron containing food throughout pregnancy. Including a regular source of iron rich food continues to be important while breastfeeding.

References: 1. Davies P.S. *et al*, Early life nutrition and the opportunity to influence long-term health: an Nutrition Working party (2014), Early Life Nutrition: The opportunity to influence long-term health, available at www.last accessed 8 March 2016. 4. Australian Dietary Guidelines (2015) available at www.eatforhealth.gov.au, last and adolescents in Australia and New Zealand: a position statement. 6. World Association of Perinatal Medicine.

Vitamin D

Vitamin D is essential for bone development and skeletal health. It regulates calcium and phosphate absorption and metabolism. Vitamin D is mainly obtained through the skin from sun exposure or through food, in particular dairy products, eggs and fish. There is increasing recognition that a significant number of Australians and New Zealanders may have less than optimal Vitamin D levels, so speak with your doctor about any supplementation requirements during pregnancy.

Omega-3

A healthy dietary intake of Omega-3 DHA is essential for brain development and potentially reducing allergy in children. The World Perinatal Society recommends dietary intake of 200 mg Omega-3 DHA per day during pregnancy and while breastfeeding. This should come primarily from diet, with 2 servings of oily fish per week.

Like more information?

For more information on healthy eating during the first 1,000 days and nutrient intakes, you can download the Australian Dietary Guidelines and other helpful brochures at www.eatforhealth.gov.au



Australasian perspective J Dev Orig Health Dis. 2016 Jan 26:1-9. 2. Australia and New Zealand Early Life earlylifenuitrition.org 3. Nutrient Reference Values for Australia and New Zealand (2015) available at www.nrv.gov.au, accessed 8 March 2016. 5. Paxton *et al*, 2013. MJA 198 (3). Vitamin D and health in pregnancy, infants, children Koletzko *et al*, 2008. J Perinat Med. 2008;36(1):5-14. ANZ/NB/16/0025. October 2016. 13137.



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Early Life Nutrition Coalition

a sub committee of PSANZ

The Early Life Nutrition Coalition is a sub-committee of the
Perinatal Society of Australia and New Zealand.

Find out more at: www.elnc.psanz.com.au