NURTURING FUTURE HEALTH THROUGH NUTRITION

20 recommendations from pre-conception to toddlerhood to help lay the foundations for your child's life-long health

AUSTRALIA AND NEW ZEALAND, EARLY LIFE NUTRITION, WORKING PARTY

Recommendations contained in this booklet were developed by an expert panel whose members are:

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FOREWORD

Welcoming a new baby into the world is a joyful time. As new parents, you want the very best for your child in the years ahead. But as you may know, the world your child is entering is 1 with a significant global health problem – the rapid rise of metabolic and allergic disease.

In Australia, 65% of adults and 25% of children are overweight or obese, based on their BMI. Around 1 million of us have type 2 diabetes and it's the fastest growing chronic disease. Approximately 1 in 10 adults and 1 in 9 children in Australia have asthma. Food allergies affect 5% of children. In the past decade, anaphylaxis (serious and life-threatening allergic reaction) has increased five-fold in children 4 years old and under, with hospital admissions doubling.

For many of these diseases, it's not genes, but environmental factors in the earliest stages of life – including nutrition – that are most influential. During pregnancy and through infancy, there are critical times when a foetus and baby are particularly susceptible to these environmental factors.

Of all the environmental variables, nutrition is the 1 thing you can influence most. Evidence continues to grow that good nutrition not only helps maximise growth and development in early life, it also reduces risk factors for numerous diseases in later life.

In April 2014, a multidisciplinary panel of expert researchers and clinicians was convened to review this evidence and from it, develop practical recommendations for parents and healthcare professionals. The review framework, perspectives and recommendations were agreed by the panel, independent of any external influence. Its full report can be downloaded from www.earlylifenutrition.org

This booklet summarises the panel's key recommendations as clear nutritional guidelines that are easy to put into practice. It is not intended to replace advice from your own healthcare professional or nurse.

We hope the recommendations will help you take advantage of the critical window of opportunity now open to you, while the foundations of your child's future health are being laid.

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OPTIMISE YOUR BABY'S FUTURE HEALTH

Most of the dietary advice parents and carers receive is to help avoid health issues in their child, or minimise risk. This booklet is different. It has been produced specifically to help you *optimise* the future health of your child.

Recommendations are grouped according to key stages of your child's development – from before pregnancy right through to toddlerhood – to provide a simple guide to what you can do at every stage.

Each recommendation is presented in a way to help you understand:

- The principle behind the recommendation
- How it helps lay the foundation for your child's long term health
- Exactly what you can do, in practical terms

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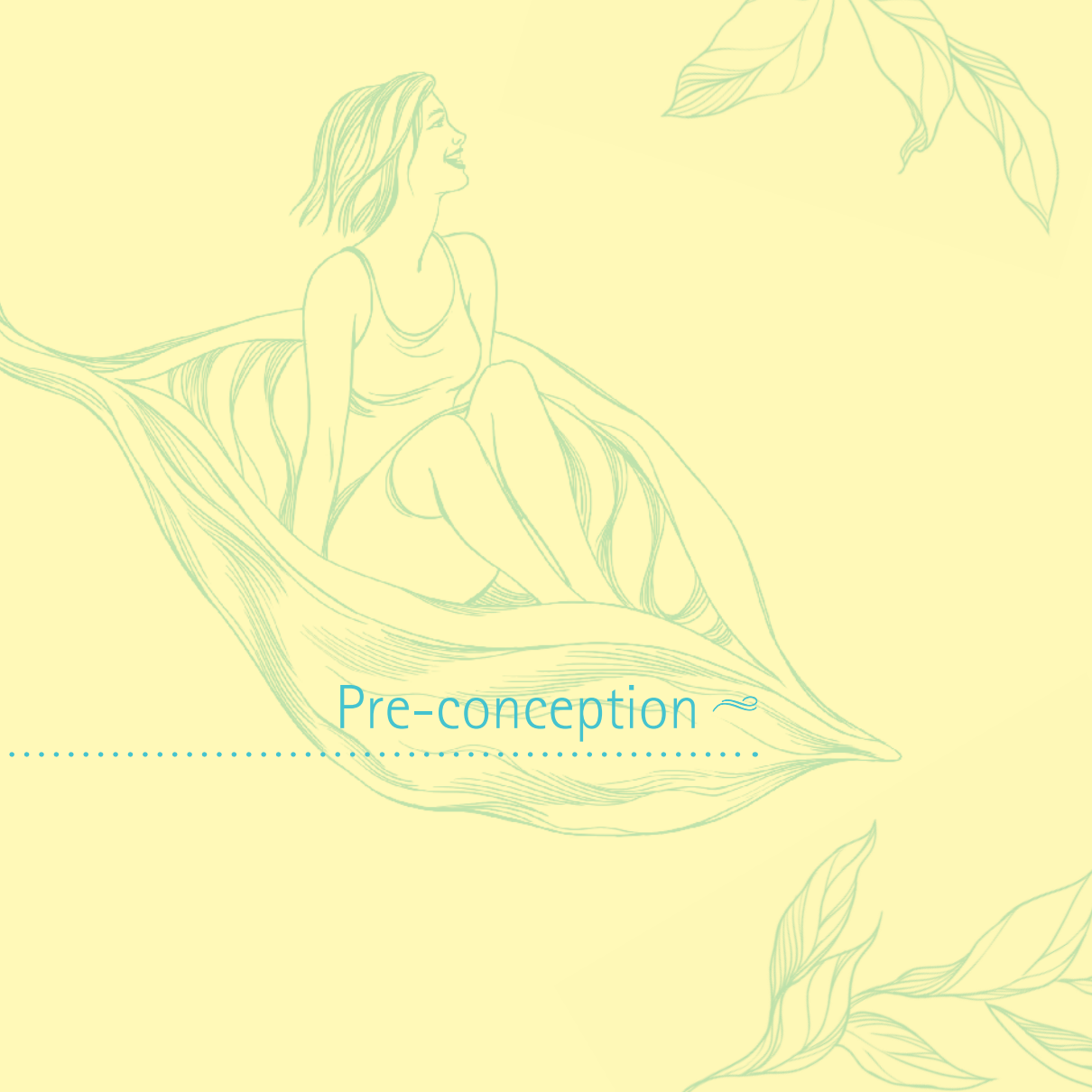

Pre-conception

KNOW YOUR NUTRITIONAL STATUS AND GET HEALTH CONDITIONS UNDER CONTROL

A FOUNDATION FOR

Successful conception and healthy pregnancy

Knowing whether your levels of essential micronutrients and vitamins are adequate is the first step in ensuring you maintain them at recommended levels for your own and your future baby's health. It's also very important to control existing health conditions like asthma and chronic kidney disease, and particularly type 2 diabetes, before and during pregnancy, to improve the odds of a healthy birth.

PRACTICAL ADVICE

- Ask your healthcare professional to check if you're deficient in any particular nutritional areas. It may also be helpful to review Australian guidelines for healthy eating.
- With your healthcare professional's help, aim to get any existing health conditions under control.
- If you have type 2 diabetes, ensure you achieve good glycaemic control before conception, and maintain it throughout pregnancy.

LOSE EXCESS WEIGHT
(men and women)

A FOUNDATION FOR

Fertility and healthy foetal development, and reducing your child's risk of diabetes and obesity

Increased body mass index (BMI) in men, as well as obesity in women, can lessen the chance of the female partner becoming pregnant. Studies have also linked male obesity to problems with embryo and foetal development, and miscarriage.

A mother who is obese when she becomes pregnant is more likely to develop gestational diabetes during pregnancy – increasing the risk of diabetes and weight problems for your child as well.

PRACTICAL ADVICE

- If you, or your partner, are overweight, support each other in your efforts to get to a healthy weight, before your baby is conceived.
- Losing 5–10% of body weight increases an overweight woman's chances of becoming pregnant, and has other important health benefits.
- Women with a BMI of 30kg/m^2 or more should definitely aim to reduce weight.
- If necessary, talk to your healthcare professional about getting the right balance of nutrients for safe weight loss, as well as appropriate physical activities.

TAKE EXTRA
FOLIC ACID

A FOUNDATION FOR

Healthy development of the central nervous system

Studies have linked a deficiency in maternal folic acid to development problems of the foetus, which can result in spina bifida or other conditions in your child.

PRACTICAL ADVICE

- Take a folic acid supplement for at least 1 month before conception. The recommended daily supplement intake is at least 400µg/0.4mg. (Folic acid should then be continued for the first trimester of pregnancy only. There's no evidence of benefits after this.)
- If you're taking anticonvulsant medication, are overweight, have type 2 diabetes, or have previously had a child with neural tube defects (NTD), ask your healthcare professional about your requirements.

ENSURE ADEQUATE
IODINE LEVELS

A FOUNDATION FOR

Healthy thyroid function and mental development

A severe lack of iodine can impair mental and physical development in an unborn child, and sometimes lead to pregnancy loss. Even a mild or moderate deficiency in their mother will affect an infant's thyroid function, and possibly their mental development.

PRACTICAL ADVICE

- Extra iodine is recommended while planning pregnancy, throughout pregnancy and as long as you breast feed.
- A daily supplement of 150µg/0.15mg is recommended.
- Women who have been diagnosed with a thyroid condition should check with their healthcare professional before taking extra iodine.
- Women who eat seaweed soup daily should also seek advice, as supplementation may lead to excess iodine and affect thyroid function.

Pregnancy

AVOID ALCOHOL

A FOUNDATION FOR

Healthy pregnancy, birth weight and brain development

There is no safe level of alcohol consumption during pregnancy. It's linked to miscarriage, low birth weight and 'foetal alcohol syndrome' (which damages a child's intellectual development).

PRACTICAL ADVICE

- Avoid alcohol altogether.
- Ask your healthcare professional for support and resources if you need it – they should be happy to assist you.

MAINTAIN A
HEALTHY WEIGHT

A FOUNDATION FOR

Reducing the risk of obesity, heart disease and type 2 diabetes

Putting on too much weight can lead to high (or low) birth weights, and increases your child's risk of diabetes and obesity in later years. Steady weight gain during pregnancy is normal, and important for your health and your baby's – but it's important to achieve this through a healthy, nutrient rich diet.

PRACTICAL ADVICE

- Your appetite will probably change during pregnancy. *Remember, it's certain nutrients that need boosting, focus on nutrient rich foods.*
- Get weighed regularly by your healthcare professional, and discuss any issues.

RECOMMENDED WEIGHT GAIN DURING PREGNANCY

Pre-pregnancy body mass index	Recommended total weight gain
Less than 18.5kg/m^2	12.5 to 18kg
18.5 to 24.9kg/m^2	11.5 to 16kg
25 to 29.9kg/m^2	7 to 11.5kg
More than 30kg/m^2	5 to 9kg

Focus on healthy eating, and don't diet while pregnant unless you get advice and supervision from your healthcare professional, as it may damage the health of your unborn child.

CONTINUE TAKING
FOLIC ACID AND IODINE

A FOUNDATION FOR

Neurological and mental development and thyroid function

Inadequate folic acid during the first 12 weeks of pregnancy can affect central nervous system development and cause conditions like spina bifida in your child, while iodine deficiency may hinder their mental development and affect thyroid function.

PRACTICAL ADVICE

- Take a folic acid supplement for at least a month before conception, and continue taking it for the first trimester of pregnancy. There's no need to take it beyond this point.
- You should take a supplement of 150µg/0.15mg of iodine each day (unless you have a pre-existing thyroid condition or consume seaweed soup daily, in which case you should ask your healthcare professional).

GET PLENTY OF
OMEGA-3 FATTY ACIDS

A FOUNDATION FOR

Brain development and reduced risk of cardiovascular and allergic disease

Omega-3 fatty acids are important for foetal development, including brain development. Dietary omega-3 also has anti-inflammatory benefits that can aid metabolism – helping reduce the child's risk of cardiovascular problems in later life and lowering their chances of developing allergic disease.

PRACTICAL ADVICE

Oily fish is a good source of omega-3 fatty acids.

- Aim for 2–3 serves of oily fish like salmon or tuna each week (as recommended in Australian dietary guidelines).
- Try to be aware of the mercury levels of different types of fish, as too much mercury can harm the child's developing nervous system.

BOOST YOUR IRON
AND ZINC INTAKE

A FOUNDATION FOR

Brain, behavioural and immunological development

Iron is needed as a foetus grows, and with it, a mother's blood volume. A shortage can lead to anaemia in the mother and affect brain development in the foetus, increasing the likelihood of poor mental processing, behavioural and motor development in your child.

Low zinc during pregnancy has been linked to problems with immunological development and sensory responses in the unborn child, as well as retarded growth and congenital abnormalities. It may also be a factor in low birth weight and premature delivery.

PRACTICAL ADVICE

- Get advice from your healthcare professional about dietary sources of iron, and factors affecting how well your body absorbs it.
- Ask your healthcare professional about monitoring your iron and zinc levels. If they're low, get their advice about supplements.

GET SUFFICIENT
VITAMIN B_{12}

A FOUNDATION FOR

Neurological development and metabolic health

Low levels of vitamin B_{12} in early pregnancy have been linked to a child having high levels of insulin resistance later (increasing their risk of diabetes and cardiovascular disease). Vitamin B_{12} is also essential for healthy cell and neurological function, including development of the central nervous system.

PRACTICAL ADVICE

- Make sure you get the recommended daily intake of vitamin B_{12} (6µg/0.006mg).
- Foods containing B_{12} include milk and milk products; eggs; and foods like soy milks which have been fortified with it.
- If you follow a vegetarian or vegan diet, consider taking a B_{12} supplement throughout pregnancy and breast feeding. Speak to your healthcare professional about this.
- Don't rely on the B_{12} in plant sources like spirulina and seaweed – it doesn't provide the type of B_{12} activity the human body needs.

KEEP UP YOUR VITAMIN D AND CALCIUM LEVELS

A FOUNDATION FOR

Healthy foetal growth and bone health

Low vitamin D during pregnancy can impede foetal growth and put your child at risk of rickets, a preventable early childhood bone disease. It can also affect bone mineralisation during your child's early adulthood, just as they are reaching 'peak bone mass'. Low calcium can also affect normal bone development.

PRACTICAL ADVICE

Vitamin D intake:

- If you wear a veil, have dark skin, use sunscreen regularly or are obese, your absorption of vitamin D through the sun may be limited.
- If you're at risk of vitamin D deficiency, ask your healthcare professional to check.
- If necessary, increase your intake with more sun exposure or a supplement (but seek advice on this from a healthcare professional).

Calcium intake:

- If you avoid dairy and don't consume an alternative high calcium food (e.g. calcium-enriched soy milk), a calcium supplement is advised. Speak to your healthcare professional for advice before commencing any supplementation.
- The total recommended daily calcium intake is 1,000mg a day if you're between 19 and 50 years, and 1,300mg if you're 18 or under.

INCREASE CARBOHYDRATE AND PROTEIN, MODERATE FAT

A FOUNDATION FOR

Promoting foetal growth and development

A pregnant woman's need for protein increases, especially into the third trimester.

PRACTICAL ADVICE

- Aim for 8.5 servings of breads and cereals (preferably wholegrain) each day.
- Increase your protein intake as your pregnancy progresses, but avoid a very high protein diet (over 20% of total energy), as it can lead to an increased birth weight.
- Around 20–35% of your energy should be from fat, which may mean reducing your intake, especially of saturated fat.

DON'T AVOID
ALLERGENIC FOODS

A FOUNDATION FOR

General health in the foetus and infant

Exposure to a wide range of nutritious foods consumed by the mother during pregnancy, and while breast feeding, has health benefits for the developing foetus and newborn infant.

PRACTICAL ADVICE

- Unless you're allergic to them yourself, there's no need to avoid allergenic foods (e.g. peanuts and peanut products) while pregnant or breast feeding.

INCLUDE PREBIOTICS, PROBIOTICS AND ANTIOXIDANTS

A FOUNDATION FOR

Metabolic health and possible prevention of allergies

A healthy balance of micro-organisms in a mother's gut is important for the child's later health. Prebiotics (food for probiotic bacteria) in late pregnancy may protect them against eczema and other allergic diseases. Probiotics help the developing immune system and metabolism. Antioxidants may have multiple benefits, including a reduced risk of obesity, asthma and eczema.

PRACTICAL ADVICE

- Fresh fruits and vegetables are good sources of both prebiotics and antioxidants, so ensure you get plenty.
- Unprocessed grains, nuts and seeds also contain soluble prebiotic fibre, and are important in the diet.
- Include yoghurt and foods containing yeast, as these provide probiotic bacteria.
- Consider boosting your probiotic intake with supplements (with healthcare professional advice).

PRACTICAL GUIDELINES FOR POSITIVE ACTION

Most dietary advice offered to mothers is done so with the aim of avoiding health issues, or *minimising risk*. The aim of this booklet is different. It has been developed specifically to provide parents and carers with nutritional guidance, from pre-conception right through to toddlerhood, which can help *optimise the long-term future health* of your baby.

Information and recommendations in the booklet are based on the findings of an expert panel, specially convened to review findings and develop recommendations around how early nutrition helps lay the foundations for future health.

Panel members included:

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Sources for all information in this booklet are detailed in the panel's report, *Early Life Nutrition: The opportunity to influence long-term health*, available at www.earlylifenutrition.org

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