

Wāhanga 2 Hapūtanga Hauora

Module 2 Healthy Pregnancy

Te Marautanga o ngā Akoranga Hapūtanga me te Mātuatanga The Pregnancy and Parenting Information and Education Curriculum



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Tirohanga Whānui – Overview

Being healthy while pregnant is important, not only for the woman's physical and mental wellbeing, but also for the growing baby. Health is a combination of a number of lifestyle choices, including having proper nutrition, exercising regularly and avoiding unhealthy lifestyle activities such as smoking and taking drugs or alcohol while pregnant. By making changes to be the healthiest possible, pregnant women significantly improve the health of their baby.

When mothers were interviewed* and asked about their pregnancy, many said having a healthy pregnancy was important and preparing for their pregnancy with the support of their whānau (close and extended) was essential. Whānau support was more than having someone support them during labour. It included wraparound support, particularly when a woman was a single parent. Women wanted to be reassured not only by their midwife but also by their whānau that no matter who was in their support network, everything was going to be OK, through encouraging words about them being a future mother and that their relationship as a daughter or partner would be preserved.

Ngā Whāinga – Objective

The aim of this module is to promote healthy eating and exercise during pregnancy while avoiding smoking, alcohol and drugs. Module 2 emphasises the benefits of healthy eating and exercise, and highlights the adverse effects of smoking, alcohol and drugs on pregnant women and their unborn babies.

Ngā Huanga Ako - Learning Outcomes

By the end of this module, participants will be able to:

- assess their nutrition and exercise needs, and describe the benefits of healthy eating and exercise
- discuss the adverse effects of smoking, alcohol and drugs on pregnant women and their unborn baby
- describe knowledge and beliefs regarding nutrition, physical activity, massage and traditional medicine in relation to pregnancy care, and be able to reflect on the impact of these beliefs.

Ngā Ngohe Whakawhanaungatanga – Ice Breaker Activities

- Have a discussion about pregnancy-related beliefs in relation to nutrition and exercise. Participants can state what their beliefs and practices are and the educator can try to understand the core reason behind them and what benefit they have today. Share current medical information supported by the latest evidence-based research and encourage further discussion about what is similar or different between the cultural beliefs discussed.
- 2. Ask mothers how they are feeling. Use this as an opportunity for further discussion.

*PPE Consultation interviews and focus groups with Māori and young mothers, 2015.



Ngā Kaupapa Matua – Key Messages

Key Messages and Tools	Delivery Guidelines, Details and Tips	Tools
Requirements of the Ministry of Health Pres Nationwide Service Framework 2014	gnancy and Parenting Inform	ation and Education Services
Provide advice on nutrition and physical activity through pregnancy This should include information about supplements, optimal weight gain and physical activity, and the importance of maintaining oral health during pregnancy.	Refer to the ministry's resources on supplements, food safety, healthy weight gain, and food and nutrition guidelines for healthy pregnant and breastfeeding women.	

Promote healthy eating

Provide guidance on what to eat and avoid and explain why

For example, eating healthy foods helps you stay strong during pregnancy and supports baby's development in the womb to ensure the best possible start to life.

What you eat determines what your baby receives to grow strong and healthy. Just as smoking is harmful to the baby, so too is excessive eating of foods and drinks high in sugar, fat and salt. Some of the risks of gaining more weight than recommended include:

- having a large baby
- needing a caesarean section
- increased blood pressure in pregnancy with complications (pre-eclampsia)
- diabetes in pregnancy (gestational diabetes).

Benefits of healthy eating include:

- protecting the long-term health of mother and baby
- reducing the chance of having a large baby and the risk of diabetes for mother and baby in adulthood.

Some pregnant women may need special advice from a dietician about eating. This includes women who:

- are 18 years old or younger
- have a medical condition affecting their eating, such as diabetes, and having more than one baby
- eat very little or have a history of eating problems.

- Have a brief discussion about what everyone generally eats, their favourite meal and why food is an important social, cultural event. Discuss whānau recipes; why are they favourites?
- Ask what the pregnant woman eats over a period of a week (write diary) and provide praise for the healthy food choices and advice or alternatives for others.
- Reflect on the cultural beliefs related to food, especially beliefs that encourage women to eat for two.
- Include whānau when discussing beliefs about food.
- Refer to Module 3 for specific information related to gestational diabetes.

Food safety in pregnancy:

https://www.healthed.govt.nz/system/ files/resource-files/HE9007-Avoiding%20 listeria.pdf

Eating healthy for pregnant women – Ministry of Health:

https://www.healthed.govt.nz/system/ files/resource-files/1805.pdf

For Māori

Toi Tangata

A Māori introductory course to grow awareness and understanding of Māori nutrition and physical activity principle: http://toitangata.co.nz/courses

Manaakitanga Tikanga related to food healthy kai:

http://www.bpac.org.nz/BPJ/2008/ August/tikanga.aspx

For Pacific

Healthy Eating – Tapuaki: http://www.tapuaki.org.nz/ im-pregnant-now-what/ healthy-eating

Pacific Heartbeat Certificate in Pacific Nutrition course and mentoring support for health professionals and community champions:

http://www.heartfoundation.org.nz/ programmes-resources/pacific-health/ pacific-healthy-eating/certificate-inpacific-nutrition

Promote healthy weight

to pregnancy, more.

Advise pregnant women on what

of Health guidelines) for women

pregnancy: if overweight prior to

Talk about her weight, and healthy

indicates that 10–15 kg is a normal

weight increase in pregnancy.

healthy weight gain is (see Ministry

who were a normal weight prior to

pregnancy, less; if underweight, prior

weight gain in pregnancy; all evidence

Delivery Guidelines, Details and Tips

Explain the increased daily food requirement in pregnancy being equivalent to two apples a day.

Provide advice that it is not healthy to eat for two.

Advise them to keep a food diary and review it with lead maternity carer to monitor intake.

As an activity, ask her to map out her weight to term – how much she wants to gain – and talk about how she is going to lose the weight after the pregnancy.

Tools

Overview of the recommended total weight gain during pregnancy: http://www.health.govt.nz/system/ files/documents/publications/healthyweight-gain-in-pregnancy-posteraug14.pdf

Healthy weight gain during pregnancy:

http://www.health.govt.nz/yourhealth/healthy-living/food-andphysical-activity/nutrition/healthyweight-gain-during-pregnancy

Online weight management training – Ministry of Health:

http://learnonline.health.nz/course/ category.php?id=18

New Zealand LMC midwives' approaches to discussing nutrition, activity and weight gain during pregnancy:

https://www.midwife.org.nz/pdf/ Journal/Nutrition%20with%20doi.pdf

Promote eating a variety of healthy foods every day from each of the four main food groups:

- vegetables and fruit
- breads and cereals (wholegrain is best)
- milk and milk products (reduced or low-fat milk is best)
- lean meat, chicken, seafood, eggs
- legumes, nuts and seeds.



NZ Heart Foundation Healthy Heart

The Heart Foundation Healthy Heart shows healthy portions of food to eat over a day and focuses on looking after your heart. It is a visual food guide that shows a balance of foods to eat, foods that can be substituted for each other within food groups, and the types of food to eat for good health.

- Discuss what's best to eat when going out and at gatherings and what not to eat. Discuss what snacks pregnant woman could take with them.
- Utilise a venue with kitchen facilities to provide a short cooking class to illustrate what a pregnant womancan eat.
- Discuss the practice of religious fasting.
- Identify locations for fresh seasonal affordable food locally.

Simple recipes are provided along with healthy delicious food to eat, for example, four-ingredient recipes.

Eating safely and well – Ministry of Health

http://www.health.govt.nz/yourhealth/pregnancy-and-kids/ pregnancy/helpful-advice-duringpregnancy/eating-safely-and-well

Eating for Healthy Pregnant Women



Tips for Pregnant Women

- Enjoy home-cooked meals, and reduce the amount of 'white' on the plate (rice, potatoes, bread) and use other choices such as brown rice, kumara or whole wheat bread.
- Encourage all cooks to prepare healthy meals, such as dishes with lots of vegetables, soups, cooked fish and lean cooked meats.
- Cook meals at home and reduce fat (especially saturated fat), salt and sugar foods, indulgent food and drinks.

A number of foods are considered high risk with regard to listeria and other bacterial contamination. During pregnancy, do not eat any of the following foods:

- processed meats* such as pâté, salami, ham and luncheon
- cold pre-cooked meat* such as chicken (plain or smoked) and corned beef
- raw (unpasteurised) milk and raw milk products
- soft pasteurised cheese* (i.e. brie, camembert, feta, blue, mozzarella and ricotta)
- pre-prepared or unrefrigerated salads, including rice or pasta salad, coleslaw, roasted vegetable and green salads
- hummus and other dips containing tahini
- raw, smoked* or pre-cooked fish* or seafood,* including sushi, smoked salmon, marinated mussels or oysters
- foods containing raw egg, such as smoothies, mayonnaise, hollandaise sauce or desserts such as mousse
- soft-serve ice cream
- cream or custard, especially in pre-made cakes or pastries (unless home-made or pre-packaged and eaten within two days of opening).
- *Note that these foods are safe to eat if heated thoroughly until piping hot, that is, above 70 °C.

Delivery Guidelines, **Details and Tips**

Tools

Food Plate

Eating the right quantities of different foods is important for overall health. The portions on a plate should be based on this ideal plate.



a pregnant woman' using cut-out

food. Get participants to organise

to eat often, to eat in moderation

Explain why certain foods should

be avoided, e.g. due to the risk of

Encourage pregnant woman to

Encourage shopping at a local

stock up on fruit and vegetables.

market or looking out for special

deals at the supermarket. Wash

fruit and vegetables well before

eating. A bag of frozen vegetables

provides a convenient way to add

• Provide a list of foods rich in iron,

folic acid and iodine, which are

essential to baby's development.

Note that midwives can prescribe

Encourage them to let everyone

in their family, household and

workplace know that they are

eating for their health and that of

vegetables to cooking.

iron and iodine.

their babies.

and to be avoided.

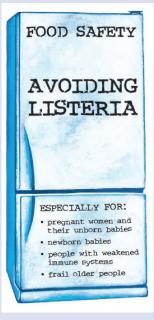
listeria/bacterial risk.

Tips for pregnant women

Source: Diagram provided courtesy of the Diabetes Project Trust. For more information refer to www.dpt.org.nz

Play a game 'what is good to eat for Guidance on food safety during pregnancy - Ministry magazine or newspaper images of of Prime Industries: www.foodsmart.govt.nz the images of food into three piles:





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Food safety

Eat fresh. Take care when buying, preparing, cooking and storing food so that the food is as safe as possible to eat. Don't eat foods that have been sitting out for longer than two hours.

Drink plenty of fluids each day, especially water and reduced- or low-fat milk.

Delivery Guidelines, Details and Tips



Tools

Guidance on food safety during pregnancy – Ministry of Prime Industries: www.foodsmart.govt.nz

Guidance on food safety during pregnancy – Ministry of Prime Industries: www.foodsmart.govt.nz

Eating safely and well – Ministry of Health: http://www.health.govt.nz/yourhealth/pregnancy-and-kids/

health/pregnancy-and-kids/ pregnancy/helpful-advice-duringpregnancy/eating-safely-and-well

Meal timing is important.

- It is important to eat breakfast, not eat late and have a little often.
- Eat breakfast even if you experience morning sickness; try small portions of cereal or fruit.
- Try to eat small portions but more often throughout the day.



Guidance on food safety during pregnancy – Ministry of Prime Industries: www.foodsmart.govt.nz

Eating safely and well – Ministry of Health: http://www.health.govt.nz/yourhealth/pregnancy-and-kids/ pregnancy/helpful-advice-duringpregnancy/eating-safely-and-well

Folic Acid, Iodine and Vitamin D

A healthy diet is important during pregnancy but women can't always get everything they and their baby needs from food.

Folic acid helps the body to make new cells. Folic acid is important because it can help to prevent birth defects of a baby's brain and spine, such as spina bifida. Spina bifida can cause walking, bladder and bowel problems.

lodine helps the body to grow and develop, especially the brain. Because babies get iodine from their mothers, pregnant and breastfeeding women need more iodine.

Vitamin D is needed for strong bones and joints as well as healthy muscle and nerve activity. If women don't have enough vitamin D during pregnancy, their baby may be born with low vitamin D levels. This can affect how baby develops.

Delivery Guidelines, Details and Tips

Emphasise the importance of taking folic acid and iodine to help prevent baby from getting neural tube defects such as spina bifida.

Provide a list of foods rich in iron, folic acid and iodine.

Encourage getting a prescription from their LMC or GP for folic acid and iodine.

Tools

Information on folic acid and neural tube defects:

http://nationalwomenshealth.adhb. govt.nz/Portals/0/A%20to%20 Z/A%20to%20F/F/F%20Folic%20 acid%20and%20iodine.pdf

Information on folic acid and iodine tablets and how to get enough vitamin D:

http://www.health.govt.nz/yourhealth/pregnancy-and-kids/ pregnancy/helpful-advice-duringpregnancy/folic-acid-iodine-andvitamin-d

Delivery Guidelines, Details and Tips

Tools

Promote exercise

Promote exercise relative to fitness level prior to pregnancy

Pelvic floor, optimal foetal positioning exercises, and stretching and swimming are generally suitable for most pregnant woman.

The benefits of exercise include:

- gives muscle strength, which will be needed to carry baby, baby bag, car seat and all other baby equipment
- improves posture, which helps to avoid backache common in pregnancy
- may reduce the length of labour and the need for intervention and pain relief
- can ease problems common in pregnancy such as leg cramps, high blood pressure and constipation
- improves circulation, which helps to prevent varicose veins
- helps to avoid putting on excess weight
- improves stamina during pregnancy and labour, and the sleepless nights ahead
- makes the pregnant woman feel good.

Promote exercise once baby is born

tailored to the woman's stage of healing. For example, with a baby, buggy resistance training; with pre-schoolers, exercises when children are playing at the playground.

- Ensure the session is held in a comfortable environment, suitable for pregnant women to move and stretch.
- Play popular music and lead the group exercise (walking, stretching) for 10 minutes, tailored to the level appropriate for the group.
- Encourage them to do this at home in front of the TV (C4, MTV, etc.).
- Recommend going for a walk every day to the shops to visit a friend or to church or during lunchtime break with colleagues.
- Recommend ending the session with a goal-setting exercise for the next week to report back on changes made with food.

Note that certain cultures and families disapprove of aerobics and dancing exercises; be mindful and promote other forms of exercise, such as walking – suggest around two blocks or to the next church and back or walking around the office.

Stereo/iPod/phone with music/ speakers.

Sport New Zealand (formerly called SPARC): http://www.sportnz.org.nz

Pregnancy and Activity –

Sport New Zealand brochure http://nationalwomenshealth. adhb.govt.nz/Portals/0/A%20 to%20Z/M%20to%20S/P/P%20 pregnancy%20and%20activity.pdf

Green Prescription Programme contacts:

http://www.health.govt.nz/yourhealth/healthy-living/food-andphysical-activity/green-prescriptions/ green-prescription-contacts



Key Messages and Tools	Delivery Guidelines, Details and Tips	Tools
Requirements of the Ministry of Heals and Education Services Nationwide S	th Pregnancy and Parenting Informatio ervice Framework 2014	n
Provide information on lifestyle choices during pregnancy — alcohol, tobacco, drugs.	Refer to the Ministry of Health's advice on avoidance of alcohol, tobacco and other drugs for pregnant women and the smoking cessation guidelines structured around the ABC (ask, brief advice and cessation support) memory aid, and immunisation during pregnancy.	



Delivery Guidelines, Details and Tips

Tools

Smoking, Alcohol and Other Substances

Discourage consumption of smoking, alcohol and other substances

Encourage pregnant women not to smoke, drink or use other substances.

Outline that smoking during pregnancy affects baby and can cause health problems such as:

- a low birth weight that could be harmful
- an increased risk of pneumonia, asthma or glue ear, as well as the risk of babies dying suddenly in their sleep
- a risk of losing the baby (miscarriage or stillbirth).

Advise that it's never too late for women to quit smoking for their baby. Phone, web (blog), text and face-to-face services are available to help women

quit smoking. *Explain the benefits of quitting, including:*

- if stopped in the first trimester, risk of stillbirth reduced to that of a non-smoker
- reduced risk of miscarriage, premature birth, low birthweight, prenatal death, etc.
- avoiding learning difficulties associated with cannabis during pregnancy.

Outline support networks for smoking cessation: • family as key support

- Quitline: 0800 778 778
- Face-to-face stop smoking services: health.govt.nz/your-health/healthy-living/ addictions/smoking/stop-smoking/face-face-stopsmoking-services
- nicotine replacement therapy (NRT)
- pregnancy stop smoking services: health.govt.nz/your-health/healthy-living/ addictions/smoking/stop-smoking/face-facestop-smoking-services/pregnancy-stop-smokingservices

Ministry of Health

- **A.** is for Asking about and documenting every person's smoking status
- **B.** is for giving Brief advice to stop to every person who smokes
- **C.** is for strongly encouraging every person who smokes to use Cessation support (a combination of behavioural support and stop smoking medicine works best) and offering them help to access it.

Discuss ways of enjoying social events, without drinking alcohol, smoking or taking drugs.

Ensure the 'no smoking' message is clear. The term 'smoke free' can be misinterpreted to smoke freely.

Involve all family members who may be smoking to access smoking cessation services.¹

Suggest placing the 'No Smoking' signs from the National Heart Foundation in their car or home.





Implementing the ABC approach for smoking cessation:

https://www.health.govt.nz/system/ files/documents/publications/ implementing-abc-approachsmoking-cessation-feb09.pdf

Stop Smoking Training

Heart Foundation fully-funded training opportunities for health care workers (both registered and unregistered) by stop smoking specialists:

http://www.heartfoundation.org. nz/programmes-resources/healthprofessionals/resource-centre/stopsmoking-training

Online Smoking Cessation training for health professionals:

http://learnonline.health.nz/course/ category.php?id=68

Online video clips:

http://www.quit.org.nz/59/ media/ad-campaigns/tvcampaigns#MATARIKI

Pictures, diagrams and support material.

For Māori

Aukati KaiPaipa – a free face-toface stop smoking service available in various locations around New Zealand, based on a Māori framework: www.aukatikaipaipa.co.nz/

For Pacific

Quitline's Pacific video clips: http://www.quit.org.nz/197/ media/ad-campaigns/pacificcampaign-2015

Tala Pasifika – National Pacific Quit Smoking Services Directory http://www.heartfoundation.org.nz/ programmes-resources/tala-pasifika

Discourage passive smoking

- Second-hand smoke is dangerous.
- Second-hand smoke has been estimated to contribute to 50 sudden unexplained death in infancy (SUDI) or sudden infant death syndrome (SIDS) cases a year.²
- Certain groups of children such as Māori and Pacific are more likely than non-Pacific children to be exposed to second-hand smoke.³
- Children exposed to second-hand smoke:
- can get middle ear damage
- have a higher risk of croup, pneumonia and bronchiolitis in their first 18 months
- can get asthma, and have severe asthma attacks more often.⁷

Delivery Guidelines, Details and Tips

Tools

Invite local DHB Smoking in Pregnancy service to speak

Information on second-hand smoke: http://smokefree.org.nz/secondhand-smoke



Source: Health Administration website

Discourage alcohol consumption

No amount of alcohol consumption is considered safe during pregnancy and when breastfeeding.⁴

Outline why alcohol is bad for baby, and the harm it can cause, including:

- miscarriage and stillbirth
- prematurity, brain damage, birth defects, growth restriction, developmental delay, and cognitive, social, emotional and behavioural deficits
- as the child grows, social and behavioural problems
- low IQ, inattention, impulsivity, aggression and problems with social interaction
- foetal alcohol spectrum disorder.

All types of alcoholic beverages can be harmful during pregnancy. There is no safe time to drink alcohol during pregnancy.

Breastfeeding should be encouraged – noting that feeding mothers should be aware that alcohol crosses into the breast milk.

Fetal alcohol spectrum disorder – Dr Valerie McGinn: youtube.com/watch ?v=DaaxYk2CQ-A



National Addictions Treatment Directory: http://alcoholdrughelp.org.nz/ directory/

Alcohol Drug Helpline 0800 787 797

Pregnancy and Alcohol Cessation Toolkit (PACT) – Alcohol Healthwatch and the University of Otago online resource to help health professionals:

akoaotearoa.ac.nz/projects/pact

Alcohol and Pregnancy – Understanding the New Zealand Context: http://www.superu.govt.nz/ alcoholandpregnancy

Alcohol and Pregnancy – A Practical Guide for Health Professionals:

https://www.health.govt.nz/system/ files/documents/publications/ alcohol-pregnancy-practical-guidehealth-professionals.pdf

Fetal Alcohol Network: http://www.fan.org.nz/

ABC Alcohol – Ministry of Health course for health practitioners designed to raise awareness of alcohol-related harm in NZ, and promote the ABC Alcohol approach:

http://www.learnonline.health.nz/

Outline that all **illegal drugs** affect an unborn baby. These include marijuana (cannabis), cocaine, amphetamines, hallucinogens and ecstasy.

Harder drugs (cocaine, heroin and 'P') come with the additional threat of addiction, which means babies will experience very unpleasant withdrawal effects after birth. If a pregnant woman has a drug habit, provide support and access to services and agencies that may be able to help.

Delivery Guidelines, Details and Tips

Watch a video that describes how almost all drugs pass through the placenta to reach and affect the baby.

Advise that midwives or doctors won't judge mothers for taking drugs. By telling them about the drugs, mothers show how much they care about their babies. The more they know, the more they can help the mothers and their babies to get the right treatment.

Refer to CADS Pregnancy and Parental Service.

Tools

Confidential support

National Addictions Treatment Directory: http://alcoholdrughelp.org.nz/ directory/

Pregnancy and Parental Service – CADS http://www.cads.org.nz/ Pregnancy.asp

Alcohol Drug Helpline:

0800 787 797 http://alcoholdrughelp.org.nz/ about-us/

FAMILY VIOLENCE IS NEVER OK

Everything an unborn baby experiences affects their brains forever.

Explain that the unborn baby's brain can be affected by experiences. If a woman is the victim of violence or abuse during pregnancy, stress hormones will affect the baby's developing brain. It is even more damaging if these stress hormones combine with alcohol or drugs.

Partner abuse is an important health issue. If you are concerned about a pregnant woman, help her to find assistance. Refer to websites under Tools.

Look out for warning signs that a pregnant woman may be in serious danger, which include:

- The pregnant woman is very afraid.
- Threats to kill or commit suicide have been made.
- The woman is experiencing excessive jealousy or controlling behaviour from a partner or is being stalked by an ex-partner.
- A relationship has ended or a court order has been issued (women and children are most at risk from death and serious violence when these occur).
- There have been previous incidents of violence, especially if it is getting more severe and frequent the victim is isolated.
- Aggravating problems exist, such as drug or alcohol misuse and mental health problems.
- Violence is being shown to others.
- Cruelty to animals is occurring.

Delivery Guidelines, Details and Tips

Ask about family violence. Be direct and have a plan about how to manage a disclosure.

Explain that women and unborn babies have the right to live free of violence, drugs and alcohol. It is important to get help straight away.

Video clip that highlights the important measures individuals and health professionals are taking to ensure that everyone is aware that family violence is never OK: http://www.raisingchildren.org.nz/ stories/family-violence-2/

Family violence guidelines:

http://www.health.govt.nz/ourwork/preventative-health-wellness/ family-violence/family-violenceguidelines

Recognising and responding to partner abuse:

http://www.health.govt.nz/ publication/recognising-andresponding-partner-abuse

Relationships

(Refer to Module 1 about managing relationships)

It is recommended that facilitators undertake training in the Violence Intervention Programme (VIP) available through district health boards.

Tools

Are You Ok: 0800 456 450.

Aroha in Action booklet:

http://areyouok.org.nz/assets/ AreyouOK/Resources/aroha-inaction-booklet.pdf

Shine's domestic abuse helpline: 0508 744 633

Help is available seven days a week, from 9am to 11pm, with an after-hours message redirecting callers in the case of an emergency

Women's Refuge:

https://www.womensrefuge. org.nz/WR/Get-help/Helpingsomeone-you-know.htm

National Network of Stopping Violence:

http://www.nnsvs.org.nz/ understanding-violence/helpfriends-and-whanau

Jigsaw Family Services:

http://anzasw.org.nz/social_ work_practice/web_links/ show/293-jigsaw-family-servicesincorporated

Shine:

http://www.2shine.org.nz/

Child, Youth and Family: http://www.cyf.govt.nz/

Barnardos: http://www.barnardos.org.nz/

Child Matters: http://www.childmatters.org.nz/

SAFE Network: http://www.safenetwork.org.nz/

Ngā Tatauranga – Statistics

Topics	Statistics				Impact on Pregnancy or Infant
WeightMaternal obesity (BMI > 30) is associated with higher maternal risks during pregnancy for gestational diabetes and pre-eclampsia. Also, the foetus is at risk for stillbirth and congenital abnormalities. Obesity in pregnancy can also affect health later in life for both mother and child. For women, these risks include heart disease and high blood pressure. Offspring have increased risks of future obesity and heart disease. ⁵ A higher intervention rate in labour and birth, and lower rates of breastfeeding success have also been attributed to maternal obesity. ⁶ Māori and Pacific have high rates of BMI > 35 compared with Indian, Asian and European/Other ethnicities (see Table below). In 2013, Counties Manukau DHB had the highest rates of obesity (13.8%) in the Greater Auckland region. ³⁴ Percentage and number of women giving birth with BMI > 35 kg/m² by district health board of residence and ethnicity (013), ⁷⁸		 Obesity (high pre-pregnancy BMI and excessive weight gain during pregnancy) is one of the contributing factors to: pregnancy complications: gestational diabetes, hypertensive disorders, caesarean section^{9,10} congenital abnormalities¹² higher perinatal mortality (stillbirth and neonatal death rates)¹¹ large babies (macrosomia)⁵ higher rates of women bleeding post-partum⁵ poorer health outcomes for the pregnant woman¹² higher newborn admission to the neonatal unit⁵ predisposing infants to obesity and other diseases later in life⁷ post-partum haemorrhaging (PPH).⁸ 			
	Nationality	Auckland % (n)	Counties Manukau % (n)	Waitemata % (n)	Excessive weight gain during pregnancy and/or post-partum weight retention can lead to an increased BMI for subsequent pregnancies.
	Māori	8.6 (242)	14.4 1,051)	9.2 (557)	An increase in a woman's pre-
	Pacific	21.0 (738)	26.1 (2,009)	17.6 (694)	pregnancy weight from overweight to obese between a first and second
	Indian	1.9 (36)	2.2 (38)	1.5 (22)	pregnancy can result in a threefold
	Asian	0.4 (18)	0.4 (14)	0.4 (23)	increased risk of pre-eclampsia. Women should be encouraged to
	European/ Other	1.9 (226)	6.4 (572)	3.8 (707)	monitor their own weight gain at regular periods during pregnancy and
Total* 5.3 (258) 13.8 (792) 5.8 (425)		discuss it with their health practitioner and/or lead maternity carer as part of their care plan ¹³			
					their care plan. ¹³

Topics	Statistics	Impact on Pregnancy or Infant		
Nutrition	Research suggests that a mother's diet around the time of conception can permanently influence her baby's DNA. ¹⁴ Women who eat a high-fat diet during pregnancy have children who are fatter prior to puberty, and who also tend to start puberty at an earlier age. Importantly, this effect is transmitted to subsequent generations. ¹⁵ On the other hand, poor maternal weight gain in pregnancy due to an inadequate diet increases the risk of premature delivery, low birthweight and birth defects. ¹⁶ According to the Growing Up in New Zealand study (GUINZ), 37.9% of pregnant women avoided caffeinated drinks (i.e. coffee, tea, energy drinks; 36.2% avoided ham and other chilled meats, salads and coleslaw (32.8%), soft cheese (31.3%) (i.e. camembert, brie, feta, mozzarella, etc.) and sushi (16.7%). ¹⁷ The study also found that almost one in six women did not take folic acid at all around or during the time of their pregnancy (if their pregnancy was planned or unplanned).15 Micronutrient deficiencies such as calcium, iron, vitamin A and iodine can lead to poor maternal health outcomes and pregnancy complications, which can also put the mother and baby at risk. ¹⁸	Pregnant women have lower levels of immunity than usual and may be more at risk of getting diseases carried by food such as listeria. Pregnancies are commonly unplanned, and this impacts a mother's diet, including folic acid supplementation rates – particularly prior to conception. Encourage and support pregnant women to eat safely and healthily: ¹⁹ http://www.foodsmart.govt.nz/information-for/ pregnant-women/list-of-safe-food.htm)		

Topics	Statistics	Impact on Pregnancy or Infant
Exercise	Approximately 61% of pregnant women in the GUINZ study undertook physical activity for at least 30 minutes on five (or more) days per week prior to this pregnancy. As pregnancy progressed, fewer women met these criteria for being physically active. Activity levels during pregnancy were influenced markedly by pre-pregnancy activity levels. Of those women that were active before pregnancy, approximately 60% continued the same level of activity during the first three months of their pregnancy. In their second and third trimesters, 30% of this group reduced their exercise further. The group of pregnant women who were inactive prior to pregnancy. Only 4% of this group became active during the first three months of their pregnancy and approximately half of them continued that activity into their second and third trimesters. ²⁰ Research from the Gravida centre shows that moderate exercise during pregnancy may have a positive effect on the babies of overweight and obese mothers. This provides a potentially important intervention for numerous overweight and obese women in NZ and overseas, who are more likely to give birth to larger babies, who in turn are more likely to develop obesity and diabetes in later life. ²¹	In pregnancy, women are likely to continue their pre-pregnancy physical activity patterns. Overall, the number of pregnant women that were physically active decreased during pregnancy. Activity and/or movement during pregnancy needs to be encouraged. Encourage and support pregnant women to move during their pregnancy, whether it be swimming or walking around the block.
Tobacco	In the GUINZ NZ study, nearly 11% of women were active smokers during their pregnancy. A further 7% of all mothers stated that they often spent time in the same vicinity as a regular smoker during their pregnancy. ²² Despite a reduction in smoking rates overall during pregnancy, more than 1 in 10 mothers continued to smoke, and there was an over-representation of smokers in mothers who identified as Māori and those who lived in the most deprived areas. ²³ Babies who are born to mothers who smoke before and after birth are three times more likely to die from SUDI/SIDs.6 Babies born to mothers who smoke are four times more likely to have allergic skin diseases by 18 months. ⁶ Second-hand smoke has been estimated to contribute to 50 SUDI/SIDs cases a year. ⁶	 Smoking can cause: miscarriage⁴ perinatal death (including stillbirth)^{5,6} increased risk of experiencing SUDI⁶ pregnancy complications – abruptio placentae⁶ intrauterine growth retardation⁶ premature birth^{5,6} low baby birthweight⁴ damage to babies' organs, especially the lungs⁴ the narrowing of blood vessels so less blood gets through; food and oxygen are cut back, which means babies suffer mentally⁴ due to smaller brain, stunted growth and stifled or slower development⁴ babies to have pneumonia, glue ear,⁴ allergies⁶ babies to have a greater risk of respiratory disorder such as asthma and wheezing⁶ higher blood pressure in childhood⁶ increased risk of obesity in childhood and adolescence.⁶

Topics	Statistics	Impact on Pregnancy or Infant
Alcohol	In the GUiNZ study, approximately 70% of women were alcohol drinkers before pregnancy. Of mothers who had planned their pregnancy, 83% stopped drinking alcohol, in contrast to 69% of those who had unplanned pregnancies. The gap between the two groups continued to reduce from the second trimester of pregnancy onwards, when more mothers in the unplanned pregnancy group stopped drinking alcohol (upward trend from 69% to 89%) and 85% of the planned group abstained. Although the majority of all mothers avoided alcohol during pregnancy, a number did continue to consume some alcohol throughout their pregnancy. The Ministry of Health 2006 guidelines recommend that mothers avoid alcohol altogether in pregnancy – the GUINZ study shows that not all mothers are choosing to do so.	It is important to encourage mothers not to consume alcohol during pregnancy. Alcohol use while pregnant can cause: • perinatal death due to spontaneous preterm birth and death – particularly sudden infant death syndrome (SIDS), postnatally acquired infection, accidents and sudden unexplained death in infancy deaths (SUDI) ⁵ • foetal alcohol syndrome ¹⁰ • the infant not growing properly, being more difficult to look after – and having permanent learning, behavioural or social problems. ¹⁰
Other Substances	There is little information available about the number of pregnant women in NZ that use drugs during pregnancy. The known effects of drug use during pregnancy have been collated internationally and have been described on the right. If a pregnant woman has a drug habit, provide support and encourage access to services and agencies that may be able to help.	Substance use has been associated with increased risks for placental abruption and antepartum haemorrhage. Babies who have been exposed have increased risks for preterm birth, small for gestational age, congenital abnormalities, hospital stays longer than 7 days, stillbirth and neonatal death. ²⁴ A meta-analysis of 31 studies found that cocaine use during pregnancy was associated with significantly higher odds of preterm birth, low birthweight, small for gestational age infants as well as shorter gestational age at delivery and reduced birthweight. ²⁵

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