Te reo Māori

BLOOD CANCERS AND CONDITIONS

NGĀ MATE PUKUPUKU O TE TOTO ME ĒTAHI ATU MATE TOTO

A guide for patients and families

He aratohu mā ngā tūroro
me ngā whānau

leukaemia & blood cancer
NEW ZEALAND

Vision to Cure. Mission to Care.

INTRODUCTION

This booklet has been written to help you and your family understand more about blood cancers and conditions when English is not your first language.

This booklet is laid out with English content on the left-hand side of the page, and Te reo Māori content on the right-hand side. The content has been translated from English by a certified translation service.

You may be feeling anxious or a little overwhelmed if you or someone you care for has been diagnosed with a blood cancer or blood condition. This is normal. Perhaps you have already started treatment or you are discussing different treatment options with your doctor and your family. Whatever point you are at, we hope that the information contained in this booklet is useful in answering some of your questions. It may raise other questions, which you should discuss with your health care team.

This booklet is a generic resource for people who have been diagnosed with a range of conditions. This means that not everything mentioned in this booklet will necessarily be relevant to you.

It is not the intention of this booklet to recommend any particular form of treatment to you. You need to discuss your circumstances at all times with your doctor and treatment team.

Interpreter service

New Zealand's Code of Health and Disability states that everyone has the right to have an interpreter present when they go to a medical appointment. If a patient and their health care professional do not speak the same language, a family member or friend may assist. The hospital can organise a trained interpreter if needed.

DRY JULY® FOUNDATION

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KUPU WHAKATAKI

Kua tuhia tēnei pukaiti hei āwhina i a koe me tō whānau kia nui ake tō koutou mātau ki ngā mate pukupuku me ētahi atu mate o te toto mēnā ehara tō reo tuatahi i te reo Ingarihi.

Kua whakatakotoria tēnei pukaiti ko ngā kupu Ingarihi i te taha mauī o te whārangi, ko ngā kupu reo Māori/Hāmoa/Tonga/Hainamana i te taha matau. Kua whakamāoritia ngā kupu Ingarihi e tētahi ratonga whakamāori whaimana.

Tēnā pea kei te mānukanuka koe, kei te āhua mae rānei mēnā kua whakataua he mate pukupuku toto, tētahi atu mate toto rānei tōu. Ko te tikanga noa iho tēnei. Tēnā pea kua tīmata kē tō maimoatanga, kei te matapakitia rānei e koutou ko tō tākuta me tō whānau ngā kōwhiringa maimoatanga rerekē. Ahakoa te wāhi kei reira koe, ko te tūmanako he mea whaitake ngā mōhiohio kei tēnei pukaiti hei whakautu i ētahi pātai āu. Tēnā pea ka ara ake i konei ētahi atu pātai, me matapaki koe ki tō rōpū whakamaimoa hauora.

He rauemi whānui noa tēnei pukaiti mā ngā tāngata kua whakataua ki te whānuitanga o ngā mate toto. Ko tōna tikanga kāore rawa e pā ki a koe tonu ngā kōrero katoa o tēnei pukaiti.

Ehara te whāinga o tēnei pukaiti i te whakahau i tētahi momo maimoatanga ki a koe. I ngā wā katoa, me matapaki tahi e koe ō āhuatanga ki tō tākuta rātou ko te kapa maimoa.

He ratonga whakamāori ā-waha

E ai ki te Rārangi Tikanga o te Hauora me te Whaikaha, kei a tātou katoa te mōtika ki te hari i tētahi kaiwhakamāori ki ngā hui i te taha o te rata. Ki te kore e mārama te tūroro ki te reo o te rata, kei te pai kia noho tētahi whanaunga, hoa rānei, ki te āwhina i a ia. Mā te hohipera tētahi kaiwhakamāori whai tiwihikete e whakarite mēnā e hiahiatia ana.

DRY JULY FOUNDATION

Nā te pūtea a Dry July NZ i whakaputaina tēnei pukaiti.

HOW TO USE THIS BOOKLET

Important information

More information available online

There are many resources available at **leukaemia.org.nz** such as fact sheets, booklets and more. Separate disease-specific booklets are available in English about each of the cancers and conditions mentioned in this booklet. Ask your LBC Support Services Coordinator for a copy of the relevant booklet so that your family or friends who read English can learn more.

HE PĒHEA TE WHAKAMAHI I TE PUKAITI NEI

Ngā mōhiohio nui tonu

Kei te ipurangi ētahi anō mohiohio

Haere ki **leukaemia.org.nz** tiki ai i ngā rauemi huhua pērā i ngā pepa meka, ngā pukaiti, ngā aha rā, ngā aha rā. Kei a mātou ētahi pukaiti reo Ingarihi mō tēnā mate pukupuku, mō ētahi atu mate hoki e tuhia ai i roto i tēnei pukaiti. Tonoa tō Kairuruku Ratonga Tautoko LBC ki te hoatu ki a koe te pukaiti e hāngai ana hei tirohanga mā tō whānau, mā ō hoa matatau ki te reo Ingarihi.

CONTENTS

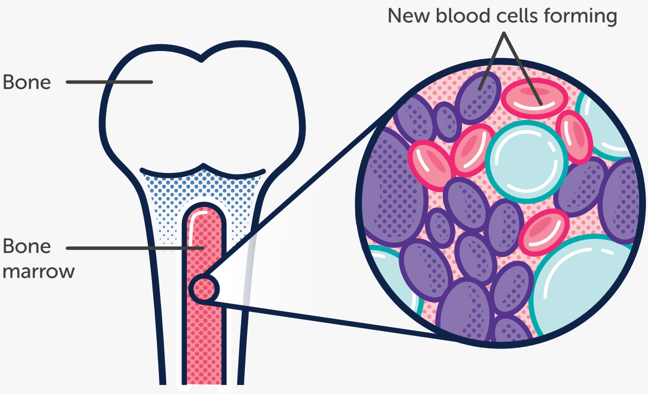
NGĀ IHIRANGI

BONE MARROW AND BLOOD STEM CELLS

Bone marrow is the spongy material inside your bones (see Figure 01).

All of your blood cells are made in your bone marrow. The process by which blood cells are made is called haemopoiesis. There are three main types of blood cells: red blood cells, white blood cells and platelets.

Figure
01
Bone marrow

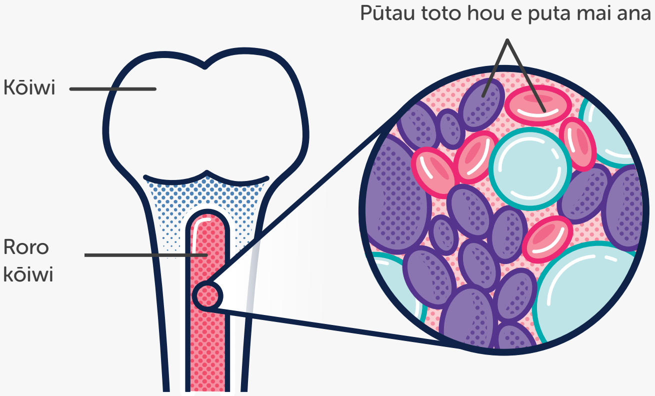


TE RORO KŌIWI ME NGĀ PŪTAU PŪRUA O NGĀ TOTO

Ko te roro kōiwi he kiko pūkahu i roto i ngā kōiwi (Tirohia te Hoahoa 01).

E waihangatia ana ō pūtau toto katoa i roto i ō roro kōiwi. Ko te tukanga e hanga nei i ngā pūtau toto e huaina nei ko te haemopoiesis. E toru ngā momo pūtau toto matua: he pūtau toto whero, he pūtau toto mā, he mōtepe.

Hoahoa
01
Roro kōiwi



You might like to think of the bone marrow as the blood cell factory. The main workers of the factory are the blood stem cells. Blood stem cells create the new blood cells in your body. The two main functions of blood stem cells are to:

- Make exact copies of themselves.
- Divide and make two different cell groups: myeloid stem cells and lymphoid stem cells.

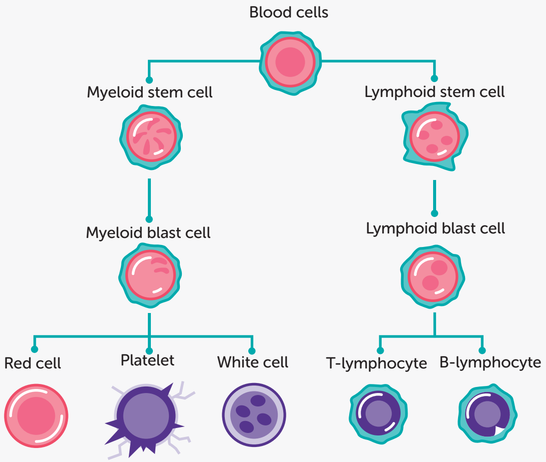
Myeloid and lymphoid stem cells create the blood cells for your body, including white blood cells, red blood cells and platelets.

In Figure 02 you can see that the blood stem cell has divided to create a myeloid stem cell and a lymphoid stem cell. You can also see the blood cells that each of these cell groups create.

Figure

02

The cells created from blood stem cells



Me whakaaro pea te roro kōiwi hei aupoke hanga pūtau toto. Ko ngā kaimahi matua i te aupoke ko ngā pūtau pūrua o te toto. Hangaia ai ngā pūtau toto hou o te tinana e ngā pūtau pūrua o ngā toto. Ko ngā mahi matua e rua o te pūtau pūrua, he:

- Whakapūrua i a ia anō.
- Whakawehe hei mahi i ngā rōpū pūtau e rua: he pūtau pūrua roro kōiwi, he pūtau pūrua waitinana.

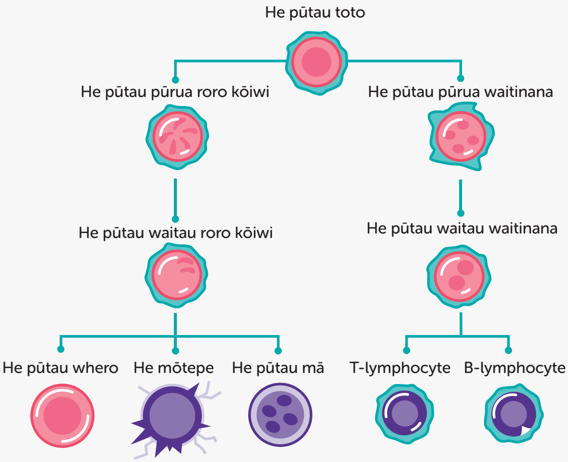
Hangaia ai ngā pūtau toto mā te tinana e ngā pūtau pūrua roro kōiwi me ngā pūtau pūrua waitinana, tae atu ki ngā pūtau toto mā, ki ngā pūtau toto whero, ki ngā mōtepe.

Kei runga i te Hoahoa 02, kua wehe te pūtau pūrua toto hei hanga i te pūtau pūrua roro kōiwi me te pūtau pūrua waitinana. Kei te kitea ngā pūtau toto e hangaia ai e aua rōpū pūtau.

Hoahoa

02

Ngā pūtau kua hangaia mai i ngā pūtau pūrua toto



YOUR BLOOD

Blood is made up of plasma, red blood cells, white blood cells and platelets.

Plasma

Plasma is the light-yellow coloured fluid in which blood cells travel around your body.

Red blood cells

Red blood cells contain haemoglobin (Hb), which transports oxygen from the lungs to all parts of the body. Haemoglobin also carries carbon dioxide to the lungs where it is breathed out. A low level of haemoglobin in your body is called anaemia. Symptoms of anaemia are explained further on page 18.

White blood cells

White blood cells fight infection. For example, if bacteria entered your bloodstream through a cut, the white blood cells would attack and kill the bacteria cells before they divide and spread. If your white blood cell count is low, you are more at risk of getting an infection.

Following is a list with the names of different types of white blood cells and what they do.

- Neutrophils (new-tra-fils) kill bacteria and fungi.
- Eosinophils (ee-o-sin-o-fils) kill parasites.
- Basophils (bay-so-fils) work with neutrophils to fight infection.
- T-lymphocytes (T-lim-fo-sites) (T-cells) kill viruses, parasites and cancer cells.
- B-lymphocytes (B-cells) make antibodies, which target harmful microorganisms (small germs).
- Plasma cells develop from mature B-lymphocytes. They play an important role in protecting the body against infection by producing immunoglobulins, which are also known as antibodies.
- Monocytes (mono-sites) work with neutrophils and lymphocytes to fight infection. They also help to produce antibodies that act as scavengers (cleaners) to remove dead tissue.
- Macrophages (mac-row-fages) monocytes are known as macrophages when they move to body tissue to help fight infection there.

Neutropenia is the term given to describe a lower than normal neutrophil count. If you have a neutrophil count of less than 1.0 (1.0×10^9/L), you are considered to be neutropenic and at risk of developing frequent and sometimes severe infections. Symptoms of infection are explained further on page 18.

Platelets

Platelets help your blood clot and prevent bleeding. If a blood vessel is damaged (for example by a cut), the platelets gather at the site of injury, stick together and form a plug to help stop the bleeding.

Thrombocytopenia (throm-bo-sy-toe-pee-nee-a) is the term used to describe a reduction in the normal platelet count. If your platelet count is low, you are at a higher risk of bleeding and tend to bruise easily.

Children

In children, normal blood cell counts vary with age. If your child has been diagnosed with a blood cancer or condition, you can ask your doctor or nurse for a copy of their blood results, which should include the normal ranges for each blood cell test for a male or female child of the same age.

Ō TOTO

He wētoto, he pūtau toto whero, he pūtau toto mā, he mōtepe kei roto i ngā toto.

Te Wētoto

Ko te wētoto he wē kōmā e kawe nei i ngā pūtau toto huri noa i te tinana.

Ngā pūtau toto whero

Ko tā te kawehā (Hb) kei roto i ngā pūtau toto whero, he kawe i te hāora mai i ngā pūkahukahu ki ngā pito katoa o te tinana. E kawe ana hoki te kawehā i te hauhā ki ngā pūkahukahu hei whakahā. He iti rawa te kawehā i te tinana, ko te mate toto ngoikore tērā. Kei te whārangi 19 ngā kupu whakamārama i ngā tohumate o te mate toto ngoikore.

Ngā pūtau toto mā

Ko tā te pūtau toto mā he whawhai i te mate hōrapa. Hei tauira, ka uru te huakita ki te ia toto mā te motu, ka patua ngā pūtau huakita e ngā pūtau toto mā, ka wehe ai, ka horapa haere ai. Mehemea ka heke te kaute o ngā pūtau toto mā, ka noho mōrea koe ki te pā o te whakapokenga.

Anei he rārangi ingoa mō ngā momo pūtau toto mā, me te mahi a tēnā, a tēnā.

- Ko tā te Neutrophil (new-tra-fil) he patu huakita me te hekaheka.
- Ko tā te Eosinophil (ee-o-sin-o-fil) he patu pirinoa.
- Ko tā te Basophil (bay-so-fil) he mahi tahi me ngā neutrophil ki te patu mate hōrapa.
- Ko tā te Lymphocyte-T (T-lim-fo-site) (Pūtau-T) he patu huaketo, pirinoa me ngā pūtau mate pukupuku.
- Ko tā te Lymphocyte-B (Pūtau-B) he waihanga paturopi e patu nei i ngā moromoroiti (moroiti tahumaero).
- Puta mai ai te pūtau wētoto i te B-lymphocytes pakari. He mahi nui tāna ki te pare i te whakapokenga mā te hanga i te pūtau whakaārai, arā he paturopi tērā.
- Ko tā te Monocyte (mono-site) he mahi tahi me ngā neutrophil me ngā lymphocyte ki te whawhai i te mate. Ko tētahi anō mahi āna he hanga i ngā paturopi e kai ai i te kiko kua hemo.
- Ka huaina hoki te monocyte macrophage (mac-row-fage) ina whiti ki ngā kiko o te tinana hei patu mate.

Ko te Neutropenia te ingoa kua tapaina hei whakaahua i te tatauranga neutrophil kei raro i te mea māori. Mēnā kei raro tō tatauranga neutrophil i te 1.0 (1.0 x 109/L) ka whakaarohia koe kei te neutropenic, nā reira kei te tino mōrea i te pā auau o ngā mate hōrapa, mate taumaha hoki i ētahi wā. Kei te whārangi 19 ngā kupu whakamārama i ngā tohumate o te whakapokenga.

Ngā Mōtepe

Ko tā te mōtepe he kati toto kia kore ai e totototo. Mehemea kua whara tētahi ia toto (hei tauira nā tētahi motu), ka emi ki te wāhi o te whara ngā mōtepe, ka piripiri ki te hanga puru hei kati i te totonga.

Ko te thrombocytopenia (throm-bo-sy-toe-pee-nee-a) te kupu ka whakamahia hei whakaahua i te whakahekenga o te tatauranga mōtepe māori. Mēnā kua pāpaku tō tatauranga mōtepe, ka piki te mōrea totonga ki a koe, ā, ko te tikanga ka kaha ake te marū haere.

Ngā Tamariki

I ngā tamariki, ka rerekē haere ngā tatauranga toto māori noa i runga i te pakeke. Ki te mea kua tautuhia he mate pukupuku toto, tētahi atu mate toto rānei tō tāu tamaiti, e āhei ana koe te tono i tō tākuta, tō nēhi rānei kia homai he tārua o tōna huanga toto, kei roto hoki ko ngā nuinga māori noa mō tētahi tamaiti tāne, tamaiti wahine rānei he rite te pakeke.

THE LYMPHATIC SYSTEM

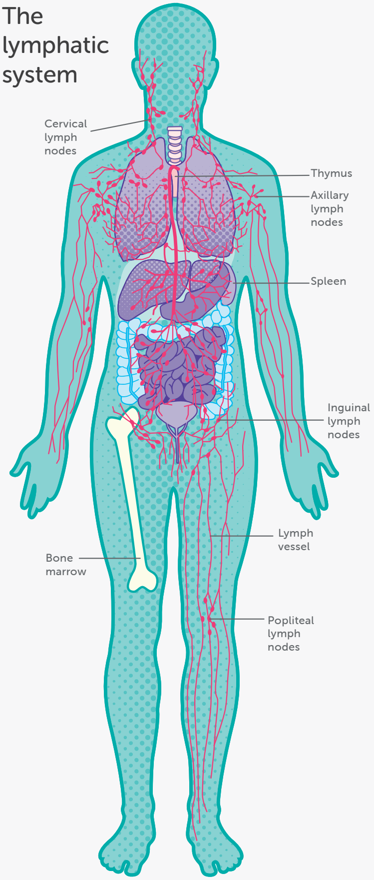
The lymphatic system is made up of a vast network of vessels, similar to blood vessels, that branch out into all the tissues of the body (see Figure 03).

These vessels contain lymph, a colourless watery fluid that carries lymphocytes, which are specialised white blood cells that fight infection. There are two types of lymphocytes, B-lymphocytes and T-lymphocytes (also called B cells and T cells). These cells protect us by making antibodies and destroying harmful microorganisms such as bacteria and viruses. The lymphatic system forms part of the immune system, which protects our bodies against disease and infection.

Clusters of small bean-shaped organs called lymph nodes (also known as lymph glands) are found at various points throughout the lymphatic system. The lymph nodes, which are filled with lymphocytes, act as important filtering stations, cleaning the lymph fluid as it passes through them. Here, bacteria, viruses and other harmful substances are removed and destroyed. When you have an infection, for example a sore throat, you may notice that the lymph nodes under your jawbone become swollen and tender. This is because the lymphocytes that live there become activated and multiply in response to the virus or bacteria causing the infection.

The spleen (an organ on the left side of the abdomen), thymus (a gland found behind the breastbone), tonsils and adenoids (glands in the throat) and bone marrow (spongy material inside bones) all contain lymphatic tissue and are therefore considered to be part of the lymphatic system. Lymphatic tissue is also found in the stomach, gut and skin.

Figure
03
The lymphatic system



TE PŪNAHA WAITINANA

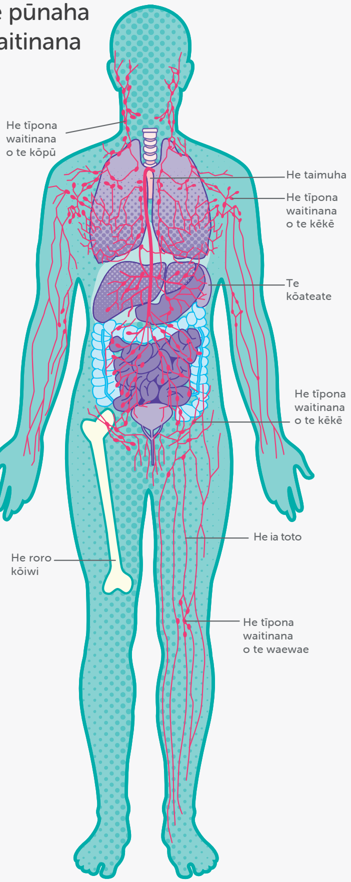
He mea hanga te pūnaha waitinana ki tētahi whatunga nui tonu o ngā iaia, he rite ki ngā ia toto, e torotoro atu rā ki ngā kiko katoa o te tinana (tirohia Hoahoa 03).

Kei roto i ēnei iaia ko te waitinana, he wē ātea e kawe ana i ngā ngeni waitinana, koia ngā pūtau toto mā ka riri ki te mate. E rua ngā momo ngeni waitinana, ko ngā lymphocyte-B me ngā lymphocyte-T (e huaina nei hoki ko ngā pūtau-B me ngā pūtau-T). E parea ana tātou e ēnei pūtau mā te waihanga i ngā paturopi, mā te patu hoki i ngā moromoroiti kino pērā i ngā huakita me ngā huaketo. He wāhi anō te pūnaha waitinana nō te pūnaha ārai mate, e pare ana i ō tātou tinana i te tahumaero me te whakapokenga.

Ka kitea ētahi kāhui o ngā puku iti he pīni nei te āhua e huaina nei he tīpona waitinana (he repe waitinana hoki) i ngā wāhi rerekē o te pūnaha waitinana. Ka tū nei ngā tīpona waitinana, kī katoa nei i te ngeni waitinana, hei pokapū tātari hirahira, e horoi ana i te wē waitinana e haere ana rā reira. Ko ngā wāhi ēnei e tangohia ai, e whakangaromia ai te huakita, te huaketo me ērā atu mea tūkino. Ina mate koe i tētahi whakapokenga, hei tauira he korokoro mamae, tēnā pea ka kite koe ka puhipuhi ngā tīpona waitinana i raro i tō kauae, ka pāwera. Ka pēnei nō te mea ka whakahohea ngā ngeni waitinana e noho nā ki reira ka rea hei urupare ki te huaketo, te huakita rānei, te pūtake o te whakapokenga.

Kei roto i te kōateate (he wāhi whēkau kei te taha mauī o te kōpū), te taimuha (tētahi repe e takoto ana i muri i te kōuma), ngā pūreke korokoro (ngā repe o te korokoro) me te roro kōiwi (te kiko pūkahu i roto i ngā kōiwi) te kiko waitinana, nā reira ka whakaarohia ēnei katoa hei wāhi o te pūnaha waitinana. Ka kitea anō te kiko waitinana i roto i te puku, ngā whēkau me te kiri.

Hoahoa
03
Te pūnaha waitinana



BLOOD CANCERS AND CONDITIONS

In this section we provide a brief overview of blood cancers and blood conditions. It is important to note that the information provided here is of a general nature and may not necessarily apply to the specific type or severity of disease that you or your family member have been diagnosed with.

Leukaemia

Leukaemia is a group of cancers that affect the blood and bone marrow. Leukaemia always starts in the bone marrow where developing blood cells undergo a malignant (cancerous) change. This means that they multiply in an uncontrolled way, crowding the bone marrow and interfering with normal blood cell production. Increasing numbers of abnormal cells (called blast cells or leukaemic blasts) eventually spill out of the bone marrow and travel around the body in the bloodstream. In some cases, these abnormal cells accumulate in various organs including the lymph nodes, spleen, liver and central nervous system (brain and spinal cord).

Types of leukaemia

The different types of leukaemia are classified by how quickly the disease develops, and by the type of blood cell involved.

- Acute leukaemia develops quickly and needs to be treated urgently.
- Chronic leukaemia develops more slowly and may not need to be treated for some time after diagnosis, if at all.
- Myeloid leukaemia arises from myeloid cells and are characterised by the accumulation of cancerous cells called myeloblasts.
- Lymphoid leukaemia arises from lymphoid stem cells and are categorised by the accumulation of cancerous cells called lymphoblasts.

The four main types of leukaemia are:

- Acute myeloid leukaemia (AML)
- Acute lymphoblastic leukaemia (ALL)
- Chronic myeloid leukaemia (CML)
- Chronic lymphocytic leukaemia (CLL)

Acute myeloid leukaemia (AML)

Acute myeloid leukaemia is characterised by an accumulation of abnormal immature myeloid cells. It develops and progresses very quickly, which is why it is called ‘acute’. Once AML is diagnosed, treatment starts very quickly to reduce symptoms and kill the leukaemic cells.

Acute myeloid leukaemia is rare in children and more common in adults.

Acute lymphoblastic leukaemia (ALL)

ALL is characterised by abnormal immature lymphoid cells and also develops very quickly like AML. ALL is more common in children than adults but can affect people of all ages.

Chronic myeloid leukaemia (CML)

CML is characterised by the slow accumulation of abnormal myeloid cells. The onset is gradual and progression is generally over months and years. Many people may have no symptoms when they are diagnosed and only found out about their condition by coincidence from a routine blood test.

NGĀ MATE PUKUPUKU O TE TOTO

Kei roto i tēnei wāhanga he whakarāpopototanga mō ngā mate pukupuku o te toto. He mea nui kia mahara he mōhiohio arowhānui ēnei e hoatu nei mātou i konei, nā reira kāore pea e pā tika ai ki te momo tauwhāiti, ki te taumaha rānei o te tahumaero kua tautuhia ki a koe, ki tētahi o tō whānau rānei.

Te Mate Ruru Toto

He rōpūtanga mate pukupuku ngā mate ruru toto ka pā ki te toto me te roro kōiwi. Ka tīmata ngā mate ruru toto i te roro kōiwi e hurihia ai rā ngā pūtau toto tipu tonu ki tētahi whakarerekētanga mate marere (mate pukupuku). Arā ka whakarea kore tikanga noa, me te kōpipiri rawa i te roro me te whakararuraru i te whakaputanga o ngā pūtau toto māori. Ka nui haere ēnei pūtau hē (e huaina nei he pūtau wa itau, he waitau mate ruru toto rānei), ā, maringi rawa mai i te roro kōiwi kia rere haere i te tinana i roto i te toto. I ētahi wā ka whakaemi ēnei pūtau hē ki ētahi o ngā wāhi whēkau, tae ki ngā tīpona waitinana, te kōateate, te ate me te pūnaha ioio matua (te roro me te aho tuaiwi).

Ngā momo mate ruru toto

He mea whakarōpū ngā mate ruru toto mā te tere e tipu ai te tahumaero,mā te momo pūtau toto hoki kua pāngia.

- Tere tonu te tipu a ngā mate ruru toto tārūrū, ā kia kōhukihuki rawa hoki te maimoa.
- He mea āta tipu te mate ruru toto mautonu, ā, kāore pea e hiahiatia kia maimoatia mō tētahi wā i muri i te tautuhitanga, ina hiahiatia rawa.
- Huaranga ai te mate ruru toto roro kōiwi i ngā pūtau pūrua roro kōiwi, he tino āhua ko te whakaeminga o ngā pūtau mate pukupuku ka huaina nei he waitau-rorokōiwi.
- Huaranga ai te mate ruru toto roro kōiwi i ngā pūtau pūrua roro kōiwi, he tino āhua ko te whakaeminga o ngā pūtau mate pukupuku ka huaina nei he waitau-rorokōiwi.

E whā ngā momo mate ruru toto matua:

- Te mate ruru toto roro kōiwi tārūrū - Acute myeloid leukaemia (AML)
- Te mate ruru toto waitau-waitinana tārūrū - Acute lymphoblastic leukaemia (ALL)
- Te mate ruru toto roro kōiwi mautonu - Chronic myeloid leukaemia (CML)
- Te mate ruru toto ngeni waitinana mautonu - Chronic lymphocytic leukaemia (CLL)

Te mate ruru toto roro kōiwi tārūrū - Acute myeloid leukaemia (AML)

Ko ngā āhuatanga o te mate ruru toto roro kōiwi tārūrū he whakaeminga o ngā pūtau roro kōiwi rerekē kāore anō kia pakari. Tere tonu te tipu a te mate nei, nā reira e kīia nei he 'tārūrū'. Ka tautuhi te AML, ka wawe te tīmata o te maimoatanga ki te whakaiti i ngā tohumate, ki te patu i ngā pūtau mate ruru.

Kitea ai te mate ruru toto roro kōiwi tārūrū i roto i te pakeke, kitea mokorea noa i roto i te tamaiti.

Te mate ruru toto waitau-waitinana tārūrū (ALL)

Ko ngā āhuatanga o ALL he pūtau waitinana rerekē kaore anō kia pakari.ā he tere tonu te tipu pērā i te AML. Puta noa ai te ALL ki te tamaiti, kāore ki te pakeke, heoi anō ka pāngia tonutia te tangata, ahakoa ōna tau.

Te mate ruru toto roro kōiwi mautonu (CML)

Ko ngā āhuatanga o te CML he eminga pōturi o ngā pūtau roro kōiwi rerekē. He tipuranga pōturi mō ētahi marama, mō ētahi tau rawa. I ētahi wā ka tautuhia ki taua mate ahakoa karekau he tohumate; he tūpono noa te kite i te mate i roto i tētahi whakamātautau toto māori noa.

CML can occur at any age but it is more common in adults over age 40 and slightly more common in men. Over time CML may progress to a more aggressive type of disease resembling acute leukaemia.

Chronic lymphocytic leukaemia (CLL)

CLL is a slow-growing type of leukaemia that effects the lymphoid blood cell line. Many people are diagnosed without experiencing any symptoms and may not immediately start treatment. Some people with CLL may just be monitored through regular blood tests and appointments with their doctor.

The majority of people with CLL are over the age of 60 but it can be diagnosed in younger people around the age of 40 years.

Cause

The cause of leukaemia is usually unknown and there are likely to be a number of factors involved.

Like all cancers, leukaemia may result from a change in one or more of the genes that normally control the growth and development of blood cells.

Some risk factors for leukaemia are:
- High levels of radiation
- Exposure to chemicals
- Previous chemotherapy for another cancer
- Inherited genetic disorder

Pre-existing blood conditions may have a higher chance of developing leukaemia. For example, MDS and CML can develop into acute leukaemia if unmanaged.

Signs and symptoms

The main symptoms of leukaemia are caused by lack of normal blood cells.

Low red blood cells (anaemia) may cause the following symptoms:
- Lack of energy
- Feeling tired all the time
- Dizziness
- Shortness of breath
- Pale skin

Low platelets (thrombocytopenia) may cause the following symptoms:
- Bruising easily
- Frequent and severe nosebleeds
- Unusually heavy periods in women
- Bleeding, e.g. bleeding gums
- Red or purple pinhead-sized skin spots (called petechiae)

Important information

If you have a low white blood cell count, you are at risk of getting potentially serious infections. The body's immune system that usually fights infection doesn't work so a small skin infection can quickly get worse and become fatal. It is important to call the hospital if you are feeling unwell or have a high temperature. Check with your haematologist or nurse about how to check your temperature properly with a thermometer, and what is considered to be a 'high temperature'. They will usually want to start intravenous (IV) antibiotics and take blood tests as soon as possible.

Puta ai te CML ahakoa te pakeke o te tangata, heoi anō kitea maha ake i roto i te tangata kua hipa i te 40 tekau tau, he tāne. Nā wai rā, nā wai rā, ka kino haere te CML ka huri hei momo mate ruru toto tārūrū.

Te mate ruru toto ngeni waitinana mautonu (CLL)

Ko te CLL he mate ruru toto e pōturi ai te tipu, he mate e whakapā atu i te rārangi pūtau toto waitinana. I ētahi wā ka tautuhia te mate i roto i te tangata ahakoa kāore e rangona ngā tohumate, ka mutu ka takaroatia te maimoatanga. I ētahi wā ka aroturukitia mā te whakamātautau toto me te haere ki te rata noa iho te tangata kua pāngia ki te CLL.

Ko te nuinga o ngā tangata kua pāngia ki te CLL he pakeke ake i te 60 tau, heoi anō kitea ai i roto i ngā tāngata āhua 40 tau, hoki.

Pūtake

Kāore i te tino mōhiotia e takea mai i hea te mate ruru toto; kāore e kore he take huhua.

Pērā i ngā mate pukupuku katoa, ka hua pea ngā mate ruru toto i tētahi rerekētanga ki tētahi neke atu rānei o ngā ira e whakahaere noa ana i te rea me te tipu o ngā pūtau toto.

Ko ētahi o ngā āhuatanga mōrearea he:

- Te nui o te kōmaru
- Noho mōrearea ki ētahi matū pū
- Rongo hahau mō tētahi atu mate pukupuku
- Mate ā-ira rānei kua tukuna iho

He nui ake pea te mōrearea o te tipu o ētahi momo mate ruru toto i roto i te hunga kei te pāngia kētia e tētahi momo mate toto. Hei tauira, ki te kore e āta whakahaerehia te MDS me te CML, ka huri hei mate ruru toto tārūrū.

Ngā Tohu me ngā tohumate

Ko ngā tohumate nui o te mate ruru toto ko te iti rawa o ngā pūtau toto māori.

Ka iti rawa ngā pūtau toto whero (toto ngoikore) ka puta mai ēnei tohumate i ētahi wā, he:

- Ngehe
- Ngenge pūtohe
- Āmai
- Whakangā poto
- Teatea

Ka heke haere te tatauranga o ngā mōtepe (thrombocytopenia) ka puta pea ngā tohu mate, arā he:

- Māmā noa te marū haere
- Ihu toto maha, he ihu toto pūtohe
- Mate wahine taumaha rawa
- Toto e.g.he pae toto
- Ira kiri pakupaku he whero, he waiporoporo rānei te tae (he petechiae)

Ngā mōhiohio nui tonu

Ka heke ana te tatauranga pūtau toto mā, ka noho mōrea ki ngā whakapokenga kino. Kāore e tika te mahi a te pūnaha ārai mate o te tinana ki te patu whakapokenga, ka mutu ka tere kino rawa te whakapokenga iti noa o te kiri, tēnā pea ka hemo te tangata. Ka māuiui haere ana, ka kirikā rānei, me waea ki te hōhipera. Pātai atu ki tō mātanga toto, ki tō tapuhi rānei, he pēhea te whakaine tika i te wera o te tinana mā te ine-mahana, ā, he aha hoki te 'wera rawa'. Ko te tikanga ka wawe te tīmata i te maimoa ā-ia-auraki ki te rongoā paturopi, i te whakamātautau i te toto, hoki.

Low white blood cells, specifically low neutrophils (neutropenia), may cause the following symptoms:

- Fever
- Reoccurring infections

Treatment

Treatment varies depending on the exact type of leukaemia you have and other factors like age, general health and severity of the disease.

The main treatment for leukaemia is chemotherapy. This is given to destroy the leukaemia cells and allow the bone marrow to function normally again. Usually people are given a combination of chemotherapy treatments that work together to kill the leukaemia cells.

The different treatment options are explained in more detail on page 38.

Lymphoma

Lymphoma is cancer of the lymphatic system. Lymphoma arises when developing lymphocytes (a type of white blood cell) undergo malignant (cancerous) change and multiply in an uncontrolled way. Increasing numbers of abnormal lymphocytes (called lymphoma cells) accumulate and form collections of cancer cells (also called malignant tumours) in lymph nodes and other parts of the body.

Types of lymphoma

There are many different subtypes of lymphoma. Five of these subtypes belong to a group of diseases called Hodgkin lymphoma. All other subtypes are commonly grouped together and called non-Hodgkin lymphoma.

Non-Hodgkin lymphoma

Non-Hodgkin lymphoma actually represents many different subtypes of lymphoma. Each subtype can act differently and their treatment and monitoring is likely to be different as well. In addition, lymphoma can arise from a B-lymphocyte (most common) or a T-lymphocyte. Non-Hodgkin lymphoma can be broadly divided into two groups, indolent lymphoma or aggressive lymphoma.

Indolent (low grade) lymphoma is a type of lymphoma that grows slowly. It may cause few symptoms and may not need to be treated urgently. Follicular lymphoma is one type of indolent lymphoma. It is the second most common type of lymphoma.

Aggressive (high grade) lymphoma is a type of lymphoma that grows quickly and treatment is needed at the time of diagnosis. Because these lymphomas grow quickly, they tend to respond well to chemotherapy and radiotherapy. Diffuse large B-cell lymphoma is the most common type of lymphoma.

Hodgkin lymphoma

In terms of presentation and treatment, this lymphoma is most similar to diffuse large B-cell lymphoma. It has five different subtypes. The chemotherapy combination is different to that of other aggressive lymphomas so the correct histologic diagnosis is important in distinguishing lymphoma types.

Ka heke rawa te tatauranga o ngā pūtau toto mā, me kī he neutrophils kua heke (neutropenia) ka puta mai ēnei tohumate i ētahi wā, he:

- Kirikā
- Whakapokenga hokihoki

Ngā Tikanga Maimoa

Ka rerekē te tikanga maimoa i runga i te momo pū o te mate ruru toto, te pakeke o te tangata, tōna hauora whānui, me te taumaha o te mate.

Ko te tikanga maimoa matua mō te mate ruru toto he rongoā hahau. Ka mahia tēnei hei patu i ngā pūtau mate ruru toto, hei tuku hoki i te roro kōiwi kia mahi anō i runga i te tikanga. Ko te tikanga ka whakamahia he huinga rongoā hahau e mahi tahi ai ki te patu i ngā pūtau mate ruru toto.

Kei te whārangi 39 ngā kōrero whakamārama i ngā kowihiringa maimoa huhua.

Te Mate Pukupuku Waitinana

Nō te pūnaha waitinana te mate pukupuku waitinana. Ka ara ake ngā pukupuku waitinana mēnā ka hurihia ngā ngeni waitinana e tipu tonu (he momo pūtau toto mā) e tētahi whakarerekētanga mate marere (mate pukupuku), nā ka whakarea i runga i te kore tikanga. Ka nui haere ēnei ngeni waitinana hē, (e huaina nei he pūtau pukupuku waitinana), ka whakaemi me te hanga i ngā kohinga pūtau pukupuku (ka huaina nei he puku hē) ki ngā tīpona waitinana me ētahi atu wāhi o te tinana.

Ngā momo mate pukupuku waitinana

He maha ngā momo mate pukupuku pūtau waitinana. E rima o aua momo mate he mate nō te rōpū mate pukupuku waitinana Hodgkin. Kua whakarōpūhia te toenga o aua momo mate kia mōhiotia ai hei mate pukupuku waitinana ehara nō Hodgkin.

Te mate pukupuku waitinana ehara nō Hodgkin

He tauira te mate pukupuku waitinana Hodgkin mā ngā momo mate pukupuku waitinana huhua. He rerekē te mahi a tēnā momo, a tēnā momo, ko te tikanga he rerekē te tikanga maimoa, te aroturuki hoki. Ka mutu, ka puta mai te mate pukupuku waitinana i te lymphocyte-B (te nuinga o te wā), i te lymphocyte-T rānei. E wehea ana ngā mate pukupuku waitinana ehara nō Hodgkin ki ngā rōpū e rua, he mate pukupuku waitinana māngere, he mate pukupuku kaitaua rānei.

Ko te mate pukupuku waitinana māngere (taumata hahaka), he mate pukupuku waitinana pōturi ki te tipu. He torutoru noa iho ngā tohumate i ētahi wā, ka mutu, ehara i te mea me kōhukihuki te maimoa. He momo mate pukupuku waitinana māngere te mate pukupuku waitinana follicular. Koia te mate pukupuku waitinana tuarua e kitea nuitia ana.

Ko te mate pukupuku waitinana kaitaua (taumata teitei) he mate pukupuku waitinana tere ki te tipu, ā, me tīmata te maimoa i te wā tonu o te tautuhitanga. Nā te tere o te tipu o ēnei mate pukupuku waitinana, ko te maimoa pai he rongoā hahau, he haumanu iraruke. Ko te mate pukupuku waitinana mahora te pūtau-B nui tonu, koia te mate pukupuku waitinana e rangiwhāwhā nei te kitea.

Te mate pukupuku waitinana nō Hodgkin.

He ōrite te putanga me te maimoatanga o tēnei tū mate pukupuku waitinana ki te mate pukupuku waitinana pūtau-B nui tonu. E rima ōna momo. He rerekē te whakatōpū rongoā hahau ki tērā o ētahi atu mate pukupuku waitinana kaitaua, nā reira he mea nui te tautuhitanga ā-mātai-mōkitokito ki te tautuhi i ngā momo mate pukupuku waitinana.

Cause

The incidence of lymphoma is increasing every year. In most cases we don't know why but there are likely to be a number of factors involved. Like all cancers, lymphoma may result from a change in one or more of the genes that normally control the growth and development of blood cells. We know that people with a weakened immune system (either due to an immune-deficiency disease or drugs that supress the function of the immune system) are at an increased risk of developing lymphoma. Certain types of viral infections may also play a role, especially in people with a weakened immune system.

Signs and symptoms

Lymphoma commonly presents as a firm painless swelling of a lymph node (swollen glad), usually in the neck, under the arms or in the groin. Lymphoma may develop in the lymph nodes in deeper parts of the body like those found in the abdomen (causing swelling and pain), or in the chest (causing coughing, discomfort in the chest and difficulty breathing).

Other symptoms may include:
- Recurrent fever
- Excessive sweating at night
- Unintentional weight loss
- Persistent lack of energy
- Generalised itching
- New skin rashes
- Fatigue
- Unexplained and/or persistent cough
- Abdominal swelling and pain

The signs and symptoms of lymphoma can often be mistaken for other less-serious illnesses.

Treatment

Treatment will vary depending on the type of lymphoma diagnosed, how fast it is likely to grow and cause problems in the body, as well as the person's age and general health.

Some types of lymphoma grow slowly and cause few troubling symptoms, and may not need to be treated urgently. Others grow more quickly and need to be treated as soon as they are diagnosed. Treatment can involve chemotherapy, radiotherapy and immunotherapy. Occasionally, a stem cell transplant is used to treat lymphoma that has relapsed (come back), or where there is a high likelihood that the lymphoma will relapse in the future.

There is more information about these treatments on page 38.

Myeloma

Myeloma (also known as multiple myeloma) is a cancer of the plasma cells. Plasma cells are mature B-lymphocytes that live predominantly in the bone marrow and normally produce antibodies to help fight infection. In myeloma, plasma cells undergo a malignant (cancerous) change and multiply in an uncontrolled way, causing problems in different parts of the body. Large numbers of abnormal plasma cells, called myeloma cells, collect in the bone marrow and may interfere with blood cell production, and damage adjacent bones, causing pain. Myeloma cells produce an abnormal type of antibody called a paraprotein that can usually be detected in blood and/or urine.

Each year in New Zealand approximately 400 people are diagnosed with myeloma. The majority of those diagnosed are over the age of 50 years.

Te Pūtake

E piki ana te pupūtanga o te mate pukupuku waitinana ia tau. I te nuinga tē mōhio ai mātou he aha ai, engari he maha tonu pea ngā āhuatanga e pā ana. Pērā i ngā mate pukupuku katoa, ka hua pea ngā mate pukupuku waitinana i tētahi rerekētanga ki tētahi neke atu rānei o ngā ira e whakahaere noa ana i te rea me te tipu o ngā pūtau toto. E mōhio ana mātou ko ngā tāngata e ngoikore nei te pūnaha āraimate (ahakoa rānei nā tētahi tahumaero āraikore, nā ngā rongoā rānei e tāmi ana i te mahi a te pūnaha āraimate) ko rātou kei te mōrearea rawa ki te tipunga o te mate pukupuku waitinana. Kei te whai wāhi hoki pea ētahi momo whakapokenga huaketo, inā tonu i roto i ngā tāngata e ngoikore nei te pūnaha āraimate.

Ngā tohu me ngā tohumate

Puta noa ai ngā mate pukupuku waitinana hei punga kore mamae o tētahi tīpona waitinana (repe pupuhi), ko te tikanga i te kakī, i ngā kēkē, i te tapatapa rānei. Ka tipu pea te mate pukupuku waitinana i ngā tīpona waitinana o roto rawa o te tinana pērā i ērā e kitea rā i te puku (mea ana he pupuhitanga), i te poho rānei (mea ana te maremare, te hūhi i te poho, te ngāngā).

Ko ētahi atu tohumate he:

- Kirikā hokihoki
- Werawera nui rawa i te pō
- Hekenga pōkerehū o te taumaha
- Ngoikoretanga pūtohe
- Māeneene o ngā wāhi tinana katoa
- Kiri kōpukupuku hou
- Rūhā
- Maremare whanokē/pūtohe rānei
- Pupuhitanga me he mamae i te puku

Kei te pōhēhētia i ētahi wā, ko ngā tohumate mate pukupuku waitinana he tohumate o mate kē, he mate māmā noa iho.

Ngā Tikanga Maimoa

Ka huri kē te tikanga maimoa i runga i te momo pū o te mate pukupuku waitinana, he pēhea pea te tere o tōna tipu, te whakararuraru i te tinana, te pakeke o te tangata, metōna hauora whānui.

Ka āta tipu noa ētahi mate pukupuku waitinana, ka ruarua noa ngā raruraru ka puta, ā, kāore e hiahiatia kia kōhukihuki rawa te tikanga maimoa. He tere ake te tipu o ētahi atu, nā kia wawe tonu te maimoa i ēnei ina tautuhia. Kei roto i te tikanga maimoa pea ko te rongoā hahau, te haumanu iraruke me te haumanuārai. I ētahi wā, ka whakamahia he whakatōnga pūtau pūrua hei maimoa i te tahumaero kua taka anō (kua hoki mai), ina nui rānei te tūpono ka matahoki mai te tahumaero ā te wā.

Kei te whārangi 39 ētahi atu mōhiohio mō ēnei tikanga maimoa.

Te Mate Pukupuku Roro Kōiwi

He mate pukupuku nō ngā pūtau wētoto te mate pukupuku roro kōiwi (e mōhiotia anō hei mate pukupuku roro kōiwi maha). He lymphocyte-B pakari ngā pūtau wētoto e noho ana i te roro kōiwi i te nuinga o te wā, e whakaputa noa ana hoki i ngā paturopi hei whawhai i te whakapokenga. Kei te mate pukupuku roro kōiwi ka hurihia ngā pūtau wētoto e tētahi huringa mate marere (mate pukupuku) ka whakarea i runga i te kore tikanga me te whakararuraru i ngā wāhi rerekē o te tinana. Ka whakaemi te manotini o ngā pūtau wētoto hē, ka huaina nei he pūtau mate pukupuku roro kōiwi, ki roto ki te roro kōiwi, ka whakararu pea i te whakaputanga o ngā pūtau toto, ka whara i ngā kōiwi pātata e rangona ai te mamae. Ka whakaputa ngā pūtau pukupuku roro kōiwi i tētahi momo paturopi hē e huaina nei he parapūmua (paraprotein) ka taea te kite i roto i te toto, i te mimi hoki/rānei.

La tau i Aotearoa, tata ki te 400 ngā tāngata ka tautuhitia ki te mate pukupuku roro kōiwi. Ko te nuinga o rātou i tautuhitia kua neke atu i te 50 tau te pakeke.

Cause

In most cases, the cause of myeloma remains unknown, but there are likely to be a number of factors involved. Like all cancers, myeloma may result from a change in one or more of the genes that normally control the growth and development of blood cells. In a small number of cases, exposure to high doses of radiation and ongoing exposure to certain industrial or environmental chemicals may be involved.

Signs and symptoms

The most common symptoms of myeloma are:

- Bone pain and/or fractures
  Often myeloma cells can interfere with the normal bone maintenance process and cause holes, or lesions in some bones. This can make the bones more fragile and at risk of getting fractures.
- Fatigue
  Persistent fatigue or an overwhelming tiredness is common in myeloma. It might be caused by the disease itself or from myeloma treatment.
- Recurring infection
  Infections can be more common because myeloma and its treatments lower the immune system, making you at higher risk of getting infections.
- Anaemia
  Anaemia is when you have a low number of red blood cells, which can happen with myeloma or as a side effect of treatment.
- Hypercalcaemia (high calcium levels)
  High levels of calcium in the blood can occur as a result of bone damage, which releases too much calcium into the bloodstream. Symptoms of hypercalcaemia can include thirst, nausea, vomiting, confusion and/or constipation.
- Kidney damage
  Myeloma produces an abnormal protein (called paraprotein) that can damage the kidneys.
- Peripheral neuropathy (damage to nerves in hands and/or feet)
  Peripheral neuropathy can be caused by myeloma itself or as a side effect to some common treatments used for myeloma. The nerves that are affected can cause tingling, altered sensation and pain.

It is important to remember that not everyone will experience all of these signs and symptoms.

Treatment

The main form of treatment is chemotherapy, usually in combination with other drugs. Steroids and other types of anti-myeloma drugs are often used in combination with chemotherapy, which work effectively together.

High-dose chemotherapy followed by an autologous stem cell transplant is also used for younger patients who are fit enough and would benefit from this type of treatment.

Drugs called bisphosphonates are a standard part of therapy used to strengthen bones affected by myeloma.

Radiotherapy may also be used to prevent and treat problems caused by bone damage.

There is more information about these treatments on page 38.

Pūtake

I te nuinga o ngā wā tē mōhiotia te pūtake o te mate pukupuku roro kōiwi, engari he maha tonu pea ngā āhuatanga e pā ana. Pērā i ngā mate pukupuku katoa, ka hua pea ngā mate pukupuku roro kōiwi i tētahi rerekētanga ki tētahi neke atu rānei o ngā ira e whakahaere noa ana i te rea me te tipu o ngā pūtau toto. I ētahi mate ruarua, ka whai wāhi pea te noho mōrearea ki ngā potonga nui rawa o te iraruketanga me te noho mōrearea haere tonu ki ētahi matū ahumahi, taiao rānei.

Ngā tohu me ngā tohumate

Ko te tino tohumate o te mate pukupuku roro kōiwi he:

- Kōiwi mamae, he kōiwi whati hoki/rānei.
  I ētahi wā ka raruraru te hātepe tiaki kōiwi i ngā pūtau mate pukupuku roro kōiwi, ā, ka puta te rua, te tūnga rānei i runga i te kōiwi. I ētahi wā ka mōwhaki haere ngā kōiwi, ā, ka māmā ake te whati.
- Rūhā
  Ko te rūhā pūtohe, te rūhā e poke ai i te tangata tētahi āhuatanga e kitea nuitia i roto i te mate pukupuku roro kōiwi. Ko te mate pea te raru, ko te maimoa i te mate pukupuku roro kōiwi rānei.
- Whakapokenga hokihoki
  I ētahi wā ka nui ake ngā whakapokenga nā te mea kua whakangoikoretia te pūnaha ārai mate, ā, tēnā pea ka nui haere ngā pānga whakapoke.
- Mate Toto Ngoikore
  Ko te mate toto ngoikore he hekenga o te nuinga pūtau whero, he āhuatanga mate pukupuku roro kōiwi pea, he āhuatanga e hua mai ai i te maimoatanga rānei.
- Hypercalcaemia (he teitei te taumata konupūmā)
  I ētahi wā ka raru te kōiwi, ko te teitei rawa o te taumata konupūmā i ngā toto te take, ka mutu ka tukuna rawatia te konupūmā ki te ia toto. Ko ētahi o ngā tohumate o te mate konupūmā teitei rawa he mateinu, he paipairuaki, he ruaki, he rangirua, he kōroke.
- Mate Tākihi
  Puta mai ai tētahi pūmua rerekē (he paraprotein ki ētahi) he mea e patu ai ngā tākihi.
- Mate io (ka raru ngā io o te ringaringa te waewae hoki/rānei)
  Ko te mate io he hua nō te mate pukupuku roro kōiwi tonu, he pānga nō ētahi maimoatanga māori noa mō te mate pukupuku roro kōiwi. He wheoro, he kēkerewai, he mamae te hua o taua mate io.

Kia maumahara, ehara i te mea ka rongo te katoa i ēnei tohu, i ēnei tohumate.

Ngā Tikanga Maimoa

Ko te tikanga maimoa matua ko te rongoā hahau, he mea whakakotahi ki ētahi atu rongoā. Whakamahia ai ngā pūtaiaki me ētahi atu momo rongoā patu-mate pukupuku roro kōiwi i te taha o te rongoā hahau.

Ko te rongoā hahau potonga nui me te whakatōnga o ōna ake pūtau pūrua i muri ka whakamahia hoki ki ngā tūroro taitamariki ake e kaha tonu ana, e whiwhi painga anō i tēnei tikanga maimoa.

Ko ngā rongoā e huaina nei he bisphosphonate ka whakamahia ki te whakakaha i ngā kōiwi e patua ana e te mate pukupuku roro kōiwi .

Ka whakamahia hoki te haumanu iraruke hei ārai, hei maimoa hoki i ngā raruraru e hua ana i te wharanga o ngā kōiwi.

Kei te whārangi 39 ētahi atu mōhiohio mō ēnei tikanga maimoa.

Myelodysplastic syndrome

Myelodysplastic syndrome (MDS) is a condition that affects normal blood cell production in the bone marrow. In MDS, the bone marrow does not produce enough red blood cells, white blood cells and/or platelets, and can produce an excess of immature blood cells known as blast cells.

There are several different types of MDS. The disease can vary in its severity and the extent to which blood cell production is disrupted. Some people may have few symptoms, (for example anaemia), while others might have very low numbers of blood cells causing increased risk of infection, bruising and bleeding, and severe anaemia.

In up to 30 per cent of people with MDS, it can progress to a type of leukaemia called acute myeloid leukaemia (AML). While MDS can occur at any age, the majority of cases develop over the age of 60 years.

Cause

MDS occurs as a result of a change (or mutation) in one or more of the genes that normally control the growth and development of blood cells. The exact reason for this change remains unclear but there are likely to be a number of factors involved. Increasing age remains the greatest risk factor for developing MDS. Exposure to high doses of radiation and ongoing exposure to certain industrial or environmental chemicals may be linked to the development of MDS.

People who have been previously treated for cancer or other conditions with cytotoxic chemotherapy are at an increased risk of developing what is called secondary or treatment-related MDS.

Signs and symptoms

In general, the types of symptoms you might experience depend on the severity of your disease, and the type of blood cell that is affected.

In many cases, MDS develops slowly and may be picked up with a routine blood test if you have no symptoms.

The most common symptoms are those caused by anaemia (low red blood cells). These symptoms include:

- Persistent tiredness or fatigue
- Dizziness
- Paleness
- Shortness of breath when physically active

Other symptoms may include frequent or repeated infections and slow healing, and increased or unexplained bleeding or bruising.

Treatment

Treatment for MDS will vary depending on several factors, including the severity of disease.

Many people, particularly in the early stages of MDS, don’t have any symptoms and don’t need to be treated. In these cases, the doctor may simply recommend regular blood tests to carefully monitor health and blood levels.

In more severe or progressive disease, chemotherapy may be used to control a rising blast cell count, and allow the bone marrow to resume normal blood cell production. This may involve low-dose chemotherapy given in tablet form, or more intensive treatment using a combination of drugs given subcutaneously (injected under the skin like an insulin injection).

Ngā mate myelodysplastic

He huinga mate ngā mate myelodysplastic (MDS) ka pā ki te whakaputanga tikanga noa o ngā pūtau toto i te roro kōiwi. I te MDS, he torutoru rawa ngā pūtau whero, ngā pūtau mā, ngā mōtepe hoki/rānei e whakaputaina ana e te roro kōiwi, ā, inati tonu te whakaputanga o ngā pūtau toto kānewha e mōhiotia nei he pūtau waitau (blast cell).

He maha tonu ngā momo MDS rerekē. Ka rerekē anō te taumaha o tōna pātanga me te kaha o tōna whakararu i te whakaputanga o ngā pūtau toto. I ētahi wā he torutoru noa iho ngā tohumate (hei tauira ko te mate toto ngoikore), i ētahi wā he tino iti rawa ngā pūtau toto, ka mutu ka nui ake te mōrea o te whakapokenga, ka wawe ake te marūtanga me te totototo.

Tae ki te 30 ōrau o ngā tāngata e pāngia ai ki te mate nei, ka neke ake rawa te MDS ki tētahi momo mate pukupuku roro kōiwi (AML). Ahakoa puta ai ngā MDS ki ngā pakeke katoa, ka puta te nuinga ki te hunga e 60 neke atu ngā tau.

Pūtake

Ka hua te MDS i tētahi rerekētanga (irakētanga) ki tētahi neke atu pea o ngā ira e whakahaere noa ana i te rea me te tipu o ngā pūtau toto. Tē mōhiotia rawa ngā tino pūtake o tēnei rerekētanga, engari he maha tonu pea ngā āhuatanga e pā ana. Ka noho ko te koroheketanga te āhuatanga mōrearea tino nui mō te tipu o te MDS. Ka whai wāhi pea te noho mōrearea ki ngā potonga nui rawa o te iraruketanga me te noho mōrearea haere tonu ki ētahi matū ahumahi, taiao rānei ki te tupuranga o te MDS.

Ko ngā tāngata kua maimoatia kētia mō te mate pukupuku me ētahi atu mate ki te rongoā hahau (cytotoxic) ka noho mōrearea ake rātou ki te tiputanga o te MDS tuarua, te MDS rānei ka ahu mai nā te maimoatanga.

Ngā tohu me ngā tohumate

Ko te tikanga kei runga tonu i te taumaha o te tahumaero, me te momo pūtau toto kua pāngia ngā tohumate ka pā ki tētahi tangata.

I ngā tāngata maha, ka āta tipu haere te MDS, kāore he tohumate, ā, kitea ai te tahumaero i roto i tētahi whakamātauranga toto tikanga noa.

Ko ngā tohumate nui he tohumate ka puta i te mate toto ngoikore (iti rawa te tatauranga o ngā pūtau toto whero. Ko ētahi o aua tohumate he:

- Ngenge pūtohe
- Āmai
- Teatea
- Whakangāngā rānei ina korikori

Ko ētahi atu tohumate pea ko te whakapokenga auau, hohoki tonu me te roa o te whakaoranga, tae ki te totototo, te marūtanga rānei kāhore nei he take.

Ngā Tikanga Maimoa

Ka rerekē tonu te maimoatanga mō te MDS i runga i ngā āhuatanga maha tae ki te taumaha o te tahumaero.

He maha ngā tāngata, inā tonu i ngā wā tōmua o te MDS, kāhore ō rātou tohumate, ā, kāore he tikanga kia maimoatia. Mō ēnei ka whakahau tirotirohanga auau noa pea te tākuta kia āta aroturukitia te hauora me te taumata toto.

Mō te tahumaero taumaha ake, kaikaha ake rānei, ka whakamahia te rongoā hahau ki te tāmi i te tipu o te nuinga pūtau waitau, me te tuku i te roro kōiwi kia hoki anō ki te whakaputanga māori o ngā pūtau toto. Kei roto pea i tēnei ko te rongoā hahau inati iti mā te pire, te maimoatanga kaha ake rānei mā tētahi huinga rongoā ka whāngai ā-kiko (ka werohia ki raro i ngā kiri; he ōrite ki te wero taiaki huka).

Ko te maimoa matua ki te nuinga o te hunga MDS ko te maimoa tautoko. Kei roto anō ko te

The main treatment for the majority of people with MDS is supportive care. This involves the use of antibiotics to treat infection and (where necessary) blood transfusions to replenish vital numbers of red blood cells and platelets. Some people might need growth factors that are used to promote normal blood cell production in the bone marrow.

A stem cell transplant may be used in younger patients who have good general health. This type of intensive treatment may increase the chance of a cure.

There is more information about these treatments on page 38.

Myeloproliferative neoplasms (MPN)

MPNs are a group of diseases that affect normal blood cell production in the bone marrow. The bone marrow produces too many blood cells (either red blood cells, white blood cells or platelets). When present in large numbers, these cells cannot function properly and cause various problems in the body.

There are four main types of chronic myeloproliferative neoplasms:

- **Essential thrombocythaemia (ET)**
  An overproduction of platelets.
- **Polycythaemia vera (PV)**
  An overproduction of red blood cells as well as platelets and white blood cells.
- **Primary myelofibrosis (MF)**
  Excessive blood cell production damages bone marrow tissue and is gradually replaced with abnormal fibrous tissue.
- **Chronic myeloid leukaemia (CML).**

In most cases, these blood cancers develop slowly and get worse gradually over many years. In some people it can progress to acute myeloid leukaemia (AML).

While MPNs can occur at any age, the majority of cases occur between the ages of 40 and 60 years. They are uncommon under the age of 20 years and rarely occur in children.

Cause

The exact cause of MPNs remains unknown but there are likely to be a number of factors involved, including a mutation in one or more of the genes that normally control the growth and development of blood cells.

Signs and symptoms

Symptoms vary depending on the particular type of MPN involved. Symptoms of an enlarged spleen (splenomegaly) are common, which include feelings of discomfort, pain or fullness in the upper left side of the abdomen. Excess circulating blood cells can cause easy bruising and bleeding, or blood clotting problems.

Treatment

Treatment will vary depending on the type of MPN you have, the severity of your symptoms, your age and general health. Treatment is generally aimed at reducing excess numbers of blood cells in the bloodstream and preventing and/or treating any symptoms and complications of the disease. It may include the use of oral chemotherapy drugs or other agents such as interferon, aspirin or anagrelide.

Sometimes people may also need to have a procedure called venesection, which is the removal of blood (a very similar pr ocedure to donating blood).

whakamahinga rongoā paturopi hei maimoa i te mate me (ina hiahiatia) te whakatōnga toto hei whakapuni i ngā nuinga pūtau toto whero me ngā mōtepe. I ētahi mate ka whakamahia ngā kaiwhakatipu ki te āwhina i te whakaputanga māori o ngā pūtau toto i roto i te roro kōiwi.

Ka whakamahia ki ētahi tūroro tamariki hauora pai, atu i tēnei mate, te whakatōnga pūtau pūrua. Mā tēnei tū tikanga maimoa e nui ake ai pea te tūpono o te whakaoranga ki etahi tūroro.

Kei te whārangi 39 ētahi atu mōhiohio mō ēnei tikanga maimoa.

He Mate Pukupuku Myeloproliferative (MPN)

He huinga mate myeloproliferative (MPN) ka pā ki te whakaputanga tikanga noa o ngā pūtau toto i te roro kōiwi. Whakaputaina ai ngā pūtau toto maha rawa (pūtau whero, pūtau mā, mōtepe rānei). Ina rahi rawa ngā pūtau, kāore ēnei pūtau e āhei ki te mahi tōtika, nā reira te putanga o ētahi raruraru ki te tinana.

E whā ngā momo mate pukupuku myeloproliferative:

- **Ko te mate thrombocythemia taketake (ET)**
  He whakaputanga nui rawa o ngā mōtepe.
- **Ko te mate olycythaemia vera (PV)**
  He whakaputanga nui rawa o ngā pūtau toto whero, o ngā mōtepe, o ngā pūtau mā.
- **Ko te mate myelofibrosis (MF)**
  He whakaputanga inati o ngā pūtau toto e tūkino ai i te kiko roro kōiwi, ā, ka āta tukutukutia te whakakapi ki te kiko nawe hē.
- **Te mate ruru toto roro kōiwi mautonu (CML).**

I te nuinga, ka āta tipu haere ēnei mate toto ka kino haere i roto i ngā tau maha. I ētahi wā ka tipu pea te mate ki te mate ruru toto (AML).

Ahakoa puta ai ngā mate ngaringari inati roro kōiwi ki ngā pakeke katoa, ka puta te nuinga ki ngā pakeke i waenganui i te 40 me te 60 tau. He mate onge ēnei i raro i te tau 20, ā, he tino onge rawa i roto i te tamariki.

Pūtake

Kāore i te mōhiotia rawa te pūtake pū o ngā mate MPN engari he nui pea ngā āhuatanga ka whai pānga tae ki te irakētanga, te rerekētanga rānei ki te ira kotahi neke atu rānei e whakahaere noa i te rea me te tipu o ngā pūtau toto.

Ngā tohu me ngā tohumate

Ka rerekē ngā tohumate i runga i te momo pū o te MPN Ka puta noa ngā tohumate o te kōateate whakarahi (splenomegaly), nā, kei roto nei te rongonga o te hūhi, te mamae, te kīkītanga rānei ki te taha whakarunga o te puku i te taha mauī. Nā te rere o ngā pūtau toto inati ka hua ngāwari noa ai te marūtanga, te totototo, ngā raru katinga toto rānei.

Ngā Tikanga Maimoa

Ka rerekē te tikanga maimoa i runga i te momo pū o te mate MPN me tōna taumaha, te pakeke o te tangata me tōna hauora whānui. Ka whai te tikanga maimoa ki te whakaheke i te rere o ngā pūtau toto inati, ki te ārai me te maimoa i ngā tohumate me ngā uauatanga o te tahumaero. Kei roto tonu pea te rongoā hahau ā-waha, ētahi atu rongoā rānei pērā i te interferon, te aspirin, te anagrelide rānei.

I ētahi wā ka hiahiatia kia tango auau ai he itinga toto i te tūroro mā te tikanga e huaina nei te unuiaia (venesection - he rite tēnei ki te tikanga takoha toto).

TESTS AND INVESTIGATIONS

There are several common tests your doctor will ask you to have that will help them make a diagnosis.

These tests are:

- Blood tests
- Bone marrow biopsy
- X-rays and other imaging tests

Blood tests

The main blood test used to diagnose blood cancers is called a full blood count (FBC) or complete blood count (CBC). Blood is taken from a vein in your arm and sent to a laboratory where it is looked at under a microscope.

The doctor might also ask to test your blood chemistry, which may include your levels of calcium, creatinine or different proteins important for detecting some blood cancers. Very specialised genetic testing can be done to confirm the diagnosis of certain blood cancers (i.e. MPNs).

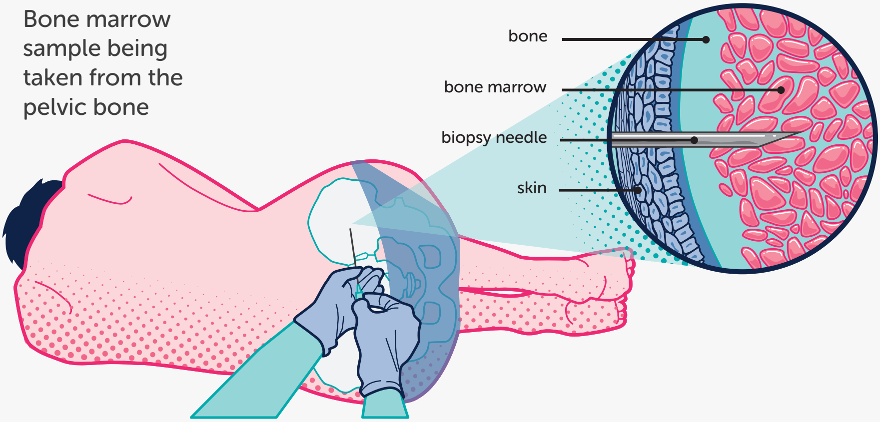
Bone marrow biopsy

A bone marrow biopsy is a test where a doctor takes samples of your bone marrow and sends them to a laboratory to be looked at under a microscope. A sample of bone marrow is usually taken from the back of your hip bone (the iliac crest) (see Figure 04).

Figure

04

Bone marrow sample being taken from the pelvic bone



NGĀ WHAKAMĀTAUTAU ME NGĀ MĀTAITANGA

He maha ngā whakamātautau māori noa e whakahautia ai e tō takuta ki te āwhina i a ia ki te whakaoti i te tautuhitanga.

Ko aua whakamātautau he:

- Whakamātautau toto
- Mātaitanga o te roro kōiwi
- Whakaahua whakaroto me ētahi atu whakamātautau whakaahua

Ngā whakamātautau toto

Huaina ai te whakamātautau toto matua ki te tautuhi i ngā mate pukupuku toto ko te Tatauranga Toto Kikī (FBC), te Tatauranga Toto Katoa (CBC) rānei. Ka tangohia ngā toto atu i te ia-auraki o te ringaringa, ka tonoa ki te taiwhanga pūtaiao ki reira tirohia ai e te karu whārahi.

Ka tonoa pea e tō takuta kia whakamātautautia tō matū toto, arā ko ō taumata konupūmā, ō para matū, ētahi atu pūmua ko ā rātou mahi he tautuhi i ētahi mate pukupuku toto. Mā te whakamātautau iranga tino whāiti e whakaū te tautuhitanga o ētahi mate pukupuku toto (i.e.he MPN).

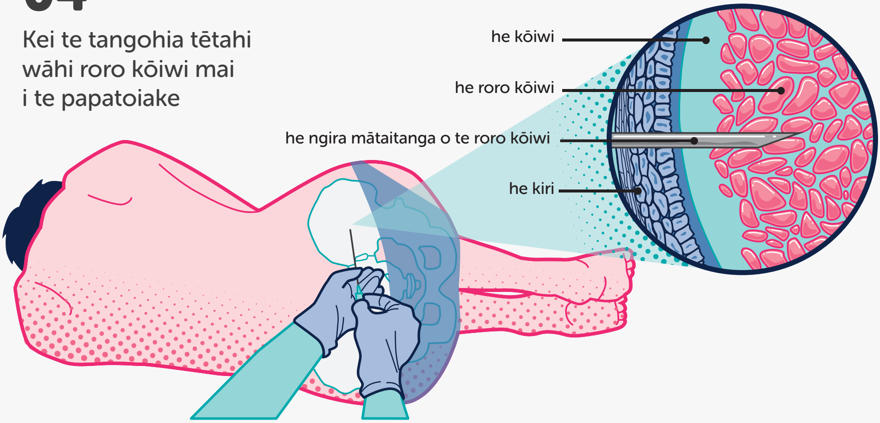
Mātaitanga o te roro kōiwi

Ko te mātaitanga o te roro kōiwi he tango i tētahi tautauira roro kōiwi, ka tonoa ai ki te taiwhanga pūtaiao ki reira tirohia ai e te karu whārahi. Ka tangohia tētahi wāhi roro kōiwi, he mea tango mai i te kōiwi kei muri o te hope (te 'iliac crest') (tirohia Te Hoahoa 04).

Hoahoa

04

Kei te tangohia tētahi wāhi roro kōiwi mai i te papatoiake



To do a bone marrow biopsy, the doctor puts a long needle through your numbed skin into the bone and then into the bone marrow. Bone marrow has liquid and solid parts. A small sample of your bone marrow liquid is taken out. This is called a bone marrow aspirate. A sample of the solid part of the bone marrow is also taken. This is called a bone marrow trephine (tre-fine).

Some people who have had a bone marrow biopsy say that it was painful and other people describe it as uncomfortable. Everybody is different. We recommend that you bring a support person with you when you have a bone marrow biopsy. If you have a sedative, you will still feel a bit drowsy afterwards. Your support person can make sure you get home safely.

After the biopsy, your doctor or nurse will put a plaster or small dressing over the biopsy site. You may need paracetamol to help ease some discomfort in the area afterwards. Your doctor or nurse will talk to you about this.

X-rays and other imaging tests

Many people require x-rays or other imaging tests as part of being diagnosed with a blood cancer and also for ongoing monitoring. These might include:

- Chest x-ray to detect a chest infection or any other abnormalities.
- Electrocardiogram (ECG) and echocardiogram (ECHO) to see how well your heart is working.
- CT scan (computer-assisted tomography scan) or ultrasound may be used if there is concern about specific localised involvement or damage caused by the disease.
- MRI scan (magnetic resonance imaging scan) may be used in diagnosis and monitoring.
- A full-body x-ray or skeletal survey may be done to check for any evidence of bone damage. X-rays are usually taken of your skull, spine (backbone), ribs, pelvis (hips), legs and arms.
- PET scan (positron emission tomography scan) uses a specialised type of intravenous (IV) contrast and CT scan technique to look for areas where there may be increased tissue activity due to disease involvement. PET scan is less commonly used in New Zealand but may be requested by your haematologist.

Your haematologist will inform you of what tests they recommend you have and why. Everyone is different so tests may vary from person to person.

Hei whakaoti i te mātaitanga, ka whakauruhia e te tākuta tētahi ngira roa ki te kiri matakerekere, ka haere tonu ki te koiwi, tae rawa atu ki te roro kōiwi. He wāhanga wē tō te roro kōiwi, he wāhanga tōtoka tōna. Ka tangohia tētahi tautauira paku o te wē roro koiwi. Huaina ai ko te ngote roro kōiwi. Ka tangohia tētahi tautauira o te wāhanga tōtoka o te roro kōiwi, hoki. Huaina ai te ngote roro kōiwi ko te trephine (tre-fine).

E ai ki ētahi he mamae te mātaitanga o te roro kōiwi, ki ētahi atu he āhua hēmanawa noa iho. He rerekē tā tēnā, tā tēnā. He pai te hari mai i tētahi atu hei hoa mōu i te wā o tō mātaitanga o te roro kōiwi. Mēnā ka kai rongoā whakarokiroki, ka matemoe tonu whai muri ake. Mā tō hoa koa e āwhina ki te hoki ki te kāinga.

Whai muri atu i te mātaitanga o te roro kōiwi ka meatia te piriora ki te wāhi i ngotea ai. Tēnā pea ka kai paracetamol hei whakamāmā i te hēmanawa. Mā tō tākuta, tō nēhi rānei, e whakamārama ēnei ahuatanga.

Ngā whakaahua whakaroto me ētahi atu whakamātautau whakaahua

I ētahi wā me whakaahua whakaroto, me whakamātautau ā-whakaahua kē hei tautuhi i te mate pukupuku toto, hei aroturuki hoki. Ko aua whakamātautau whakaahua he:

- Whakaahua whakaroto i te uma hei kimi i te whakapokenga o te uma, i ētahi atu raru rānei.
- Whakaine i te kakapa manawa (ECG) me te whakaine ā-oro-ikeike (ECHO) ki te aroturuki i te manawa.
- Ka whakamahia te CT (matawaitanga ā-rorohiko) te whakaine ā-oro-ikeike rānei mehemea he āwangawanga mō tētahi wāhanga whāiti, mō tētahi raru i puta mai ai i te tahumaero rānei.
- Ka whakamahia pea te MRI (tirohanga ā-autō) hei tautuhi, hei aroturuki.
- Ka whakamahia pea te whakaahua whakaroto i te tinana katoa, te tirohanga kōiwi rānei hei rapu mēnā kua raru tētahi kōiwi. Whakaahuatia whakaroto ai te korotū, te tuarā (tuaiwi), ngā rārā, te papatoiake (hope), ngā waeawae, ngā ringaringa.
- Kei te whakamahia e te tirohanga PET (tirohanga ki ngā whanewhane tinana) tētahi whakamuramura ā-ia-auraki (IV) me tētahi tirohanga CT ki te kimi i ngā wāhanga e pāngia ai e te tahumaero. Kāore e tino kitea te tirohanga CAT i Aotearoa nei, heoi anō ka tonoa pea e tō mātanga toto.

Ka whakamāramahia e tō mātanga toto ko ēhea ngā whakamātautau pai māu. Ka rerekē ngā whakamātautau mā tēnā, mā tēnā.

WHAT HEALTH PROFESSIONALS WILL I MEET AFTER MY DIAGNOSIS?

You will meet a range of health professionals who are part of your health care team.

Each health professional has a different area of expertise in cancer and cancer care. Working as a team, these health professionals will give you and your family the best treatment and support so that you can live as well as possible following a blood cancer diagnosis.

Some of the health professionals you will meet are, in alphabetical order:

- **Charge nurse** – A senior nurse in charge in the outpatient department or on the hospital ward.
- **Clinical nurse specialist (CNS)** – A nurse with advanced skills in a specific area of cancer care. This person works closely with you and members of your health care team to help you manage the symptoms and side effects of your blood cancer and treatment.
- **Dietitian** – A dietitian will advise on what to eat and drink to minimise symptoms or side effects from your treatment. A dietitian may prescribe supplements to make sure you are getting the calories and nutrients you need.
- **General practitioner (GP)** – A family and community doctor might already be involved with your blood cancer diagnosis. They will be informed throughout your diagnosis and will work together with other health professionals to support you at home, in the community and after treatment.
- **Haematologist** – A doctor who specialises in the treatment of blood cancers or blood conditions. A haematologist will be in charge of overseeing your treatment and follow-up.
- **Occupational therapist** – Helps you manage everyday activities and achieve activities you want or need to do.
- **Outpatient clinic nurse** – A nurse who gives you treatment as an outpatient or who works alongside a doctor in the clinic.
- **Pharmacist** – Prepares and checks your medications. A pharmacist can advise you on how to take your medicine and the possible side effects.
- **Physiotherapist** – Specialises in maintaining and improving body movement and mobility. A physiotherapist (or physio) can help you regain independence and fitness.
- **Psychologist** – Specialises in helping you manage the emotional challenges of a blood cancer diagnosis, such as stress, anxiety and depression.
- **Registrar** – A doctor who is training to become a haematologist. You will often see your registrar on the ward and in the clinic. Your registrar works very closely with your haematologist.
- **Social worker** – Helps you manage the practical and emotional impact of having a diagnosis of a blood cancer, such as advice about managing at home, employment or school.

KA TŪTAKI AU I ĒHEA MĀTANGA HAUORA WHAI MURI I TE TAUTUHITANGA?

Ka tūtaki koe i ētahi mātanga hauora, ko rātou ngā mema o tō rōpū whakamaimoa hauora.

Kei a tēnā ōna pūkenga whakamaimoa mate pukupuku, kei a tēnā ōna pūkenga whakamaimoa mate pukupuku. Ka mahi tahi aua mātanga hauora ki te tautoko, ki te taupua i a koutou ko tō whānau, mā reira e whiwhi ai te maimoatanga pai rawa e taea ai whai muri i te tautuhitanga mate pukupuku toto.

Ko ētahi o aua mātanga hauora he:

- **Tapuhi matua** – He tapuhi hautū e whakahaere ai te wāhanga tūroro noho kāinga, noho hōhipera ranei.
- **Mātanga Tapuhi (CNS)** – He tapuhi, ko ia he mātanga i te kaupapa manaaki i te tūroro kua pāngia ki te mate pukupuku. Ko tēnei te tangata e mahi piritata ki a koutou ko tō rōpū whakamaimoa hauora ki te whakahaere i ngā tohumate me ngā pānga o tō mate pukupuku toto me tō maimoatanga.
- **Mātanga Kai** – Mā te mātanga kai e tohutohu atu ko ēhea ngā kai pai hei whakaiti i ngā tohumate, i ngā pānga o tō maimoatanga. Tēnā pea ka tohua e te mātanga kai ngā tāpiringa horakai kia rahi ai ngā pūngoi me ngā taiora māu.
- **Rata whānui (GP)** – Ko te rata o tō whānau, o te hapori rānei e mahi kē pea i te taha o tō rōpū whakamaimoa hauora. Ka tohaina ki a ia ngā kōrero maimoa e hāngai ai ki tō tautuhitanga, ā, ka mahi ki te taha o ngā mātanga hauora ki te tautoko i a koe i te kāinga, i te hapori, whai muri ake i te maimoatanga.
- **Mātanga toto** –He mātanga e arotahi ai ki ngā āhuatanga e pā ana ki ngā mate pukupuku toto, ki ngā take toto whānui. Ko te mātanga toto te kaiwhakahaere matua o ō tikanga maimoa me ngā tikanga whai muri ake.
- **Kaihaumanu whakamahi tinana** – Māna koe e āwhina ki te mahi i ngā mahi noa o te rā, i ngā mahi e hiahia nei koe hoki.
- **Tapuhi mā te tūroro noho kāinga** – Te tapuhi e whakamaimoa i a koe hei tūroro noho kāinga, e mahi rānei i te taha o te rata o te taiwhanga hauora.
- **Kēmihi** – Māna ō rongoā e whakarite, Mā te kēmihi koe e tohutohu ka pēhea te kai i ō rongoā, he aha ngā pānga o aua rongoā.
- **Kaihaumanu tinana** – Ko tāna mahi he tiaki, he whakapai ake i te nekeneke a te tinana. Mā tekairomiromikoe e āwhina ki te pupuri i tō tūtahitanga, i tō pakari tinana.
- **Kaimātai Hinengaro** – Mā te mātanga nei e āwhina koe ki te whakahaere i ngā wero kare ā-roto ā-roto o te tautuhitanga mate pukupuku toto, pērā i te pōraruraru, te āwangawanga, te pāpōuri
- **Kairehita** – He rata e ako ana ki te mahi hei mātanga toto.. Kitea ai te kairehita i te rūma noho hōhipera, i te taiwhanga hauora rānei. Ka mahi tahi te kairehita me te mātanga toto.
- **Tauwhiro** – Māna koe e āwhina ki te whakahaere i te pānga hāngai, i te pānga kare ā-roto o te tautuhitanga mate pukupuku toto; hei tauira he tohutohu e pā ana ki te tiaki i a koe anō i te kāinga, i te mahi, i te kura.

- **Ward nurse** – A nurse who looks after you during your stay in hospital.

Other people you might hear about or meet are:

- **Palliative care team** – Doctors, nurses and other health care professionals whose roles include managing symptoms of blood cancers, helping improve quality of life and supporting people at the end of life.
- **Spiritual care and cultural support** – People who can support your individual cultural, spiritual or religious needs.
- **Non-Governmental organisation (NGO)** – Gives emotional and practical support for those affected by cancer, e.g. Leukaemia & Blood Cancer New Zealand.
- **Leukaemia & Blood Cancer New Zealand Support Services Coordinator**, a professional who provides education as well as practical and emotional support. Phone 0800 15 10 15.

- **Tapuhi rūma noho hōhipera** – Te tapuhi e tiaki nei i a koe i te wā e noho ai koe i te hōhipera.

Ko ētahi atu tāngata:

- **Rōpū tiaki i te tangata taumaha** – He rata, he tapuhi, he mātanga hauora kē atu, ko tāna mahi he whakahaere i ngā tohumate o ngā mate pukupuku toto, he manaaki, he tautoko i te tangata e taumaha ana.
- **Te manaaki ā-karakia, te tautoko ā-ahurea** – Ko ngā tāngata e āhei ai ki te tiaki i tō taha ahurea, i tō taha wairua, i tō taha whakapono.
- **He rōpū ehara nō te kāwanatanga (NGO)** – Kei te tautoko i te hunga e pāngia ai e te mate pukupuku, e.g.Leukaemia & Blood Cancer New Zealand.
- **He Kaiwhakahaere nō Leukaemia & Blood Cancer New Zealand Support Services**, he tangata e tautoko ai i ngā hiahia mātauranga, i ngā hiahia māori noa, i ngā hiahia kare ā-roto. Waea ki 0800 15 10 15.

TREATMENTS

In this section we provide a brief overview of treatments for blood cancers and blood conditions. It is important to note that the information provided here is of a general nature and may not necessarily apply to the specific type or severity of disease that you or your family member might have been diagnosed with.

Chemotherapy

Chemotherapy literally means therapy with chemicals. Many chemotherapy drugs are also called cytotoxic (cell toxic) drugs because they kill cells, especially ones that multiply quickly such as cancer cells.

Chemotherapy usually involves a combination of drugs (combination chemotherapy). The names of different combinations of drugs are commonly derived from the first letters of each of the drugs used.

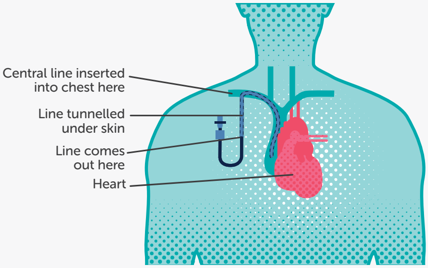
Chemotherapy is often given in several cycles (or courses) with a rest period of a few weeks in between each cycle. This is to allow the body to recover from the side effects of chemotherapy.

How is chemotherapy given?

There are many ways of giving chemotherapy. It can be given through a vein (intravenously or IV), usually in your arm or hand, under the skin (subcutaneously) or in a tablet form (orally).

If you are having several cycles of chemotherapy, your haematologist may recommend that you have a central venous catheter (also called a central line) or portacath inserted (see Figure 05). A central venous catheter is a special line inserted through the skin into a large vein in your arm, neck or chest. Once it's in place, chemotherapy and any other IV drugs can be given through the line and blood tests can also usually be taken from the line, without needing frequent needle pricks. There are several different kinds of central lines used, some are intended for short-term use while others remain in place for months and even years.

Figure
05
Central line placement



Most people don't need to be admitted to hospital for IV chemotherapy, instead it is usually given in the outpatient department of the hospital. Sometimes, however, you may need to be admitted to the ward for a short while.

NGĀ WHAKAMAIMOA

Kei roto i tēnei wāhanga he whakarāpopototanga mō ngā tikanga maimoa o te mate pukupuku o te toto. He mea nui kia mahara he mōhiohio arowhānui ēnei e hoatu nei mātou i konei, nā reira kāore pea e pā tika ai ki te momo tauwhāiti, ki te taumaha rānei o te tahumaero kua tautuhitia ki a koe, ki tētahi o tō whānau rānei.

Te Rongoā Hahau

Ko te tikanga pū o te rongoā hahau ko te maimoa ki te matū. Ka huaina hoki ngā rongoā hahau maha he rongoā cytotoxic (he tāoke ki te pūtau) nō te mea he patu pūtau te mahi, inā tonu ngā pūtau horo ki te whakarea pērā i ngā pūtau pukupuku.

Ko te tikanga ka whakamahia he huinga matū rongoā e te rongoā hahau. Puta mai ai ngā ingoa o ngā huinga rongoā rerekē i ngā pū tuatahi o tēnā, o tēnā rongoā kei te whakamahia.

Ka whāngaia noa te rongoā hahau mā ngā hurihanga maha me tētahi wā okioki i waenganui i ia hurihanga. Mā konei ka tukua te tinana kia ora anō i ngā pānga o te rongoā hahau.

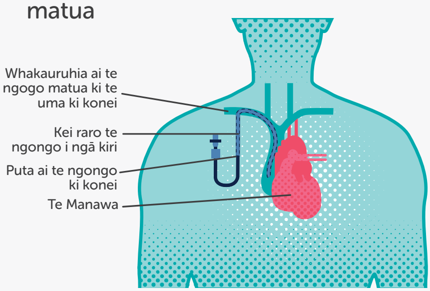
He pēhea te whāngai i te rongoā hahau?

He maha tonu ngā tikanga whāngai rongoā hahau. Ka whāngai mā tētahi ia-auraki i tō ringaringa (IV), ka werohia ki raro i te kiri, mā te pire rānei (ā-waha).

Mehemea e whāngaia ana koe ki ētahi hurihanga o te rongoā hahau, tēnā pea ka whakahaua e tō mātanga toto kia kōkuhuna he ngongo ia-auraki matua – e huaina hoki he ngongo matua (central line), he ngongokawe (portacath) rānei.(Tirohia te Hoahoa 05) Ko te ngongo ia-auraki matua ko tētahi aho motuhake ka kōkuhuna rā te kiri, ki tētahi ia-auraki nui i tō ringa, kakī, uma rānei. Oti rawa tēnā te whakamau, ka taea tonu ngā rongoā hahau me ētahi atu rongoā te whāngai mā te ngongo, me ngā whakamātauranga toto te tango mā te ngongo, kāhore ia ngā wero auau ki te ngira. He maha ngā momo ngongo ia-auraki matua kei te whakamahia, he mea rangitahi ētahi, ko ētahi atu ka mau tonu mō ētahi marama, mō ētahi tau rawa.

Hoahoa
05

Te whakatakoto i te ngongo matua



I te nuinga o ngā wā kāore e hiahiatia kia noho hōhipera koe mō ēnei momo rongoā hahau, engari ka whāngaia tikanga noa kē i te wāhanga tūroro tūwaewae o te hōhipera. Heoi anō i ētahi wā, tēnā pea ka hiahiatia kia noho hōhipera koe mō tētahi wa poto.

Side effects of chemotherapy

Chemotherapy kills cells that multiply quickly, such as cancer cells. It also causes damage to fast-growing normal cells including hair cells and cells in your mouth, gut and bone marrow. The side effects of chemotherapy occur as a result of this damage.

The types of side effects and their severity vary from person to person depending on the type of chemotherapy given and how you respond to it. There is no doubt that side effects can be very unpleasant at times but it is good to remember that most of them are temporary and reversible. It is important that you report any side effects that you are experiencing to your nurse or doctor because many of them can be treated successfully, reducing any unnecessary discomfort for you.

Effects on the bone marrow

Chemotherapy temporarily affects the bone marrow's ability to produce adequate numbers of white blood cells, platelets and red blood cells. As a result, your blood counts will generally fall within a couple of weeks of treatment. The length of time it takes for your bone marrow and blood counts to recover mainly depends on the type of chemotherapy given. The three main complications of low blood counts are:

- Increased risk of infection
- Bruising and bleeding
- Anaemia

Infection

Your white blood cell count is at its lowest usually between 10 to 14 days after having your chemotherapy, during which time you will be at a higher risk of developing an infection. A blood test will sometimes be arranged for you during this time to check your blood count. At this stage you will also be neutropenic, which means that your neutrophil count is low. Neutrophils are important white blood cells that help us to fight infection. While your white blood cell count is low you should take sensible precautions to help prevent infection, which include the following:

- Being around other people
  Stay away from crowds of people and avoid people with infections that are contagious (for example head cold, flu, chicken pox).
- Preparing and eating food
  Your haematologist or nurse will tell you what foods to avoid if your white blood cell count is low. They may suggest you have a 'neutropenic' diet or 'clean' diet. This type of diet protects you from germs found in some food and drinks. It is important to be very careful when preparing and cooking food. You need to:
  - Always wash your hands before preparing or eating food.
  - Tell your family to wash their hands when preparing food.
  - Prepare food in a clean place.
  - Wash fruit and vegetables well.
  - Make sure reheated food is very hot.
  - Do not reheat food more than once.
  - Eat food before its best before/use-by date.
  - Prepare raw meat on a separate chopping board and make sure it is then cooked properly.

More information available online

Ngā pānga autaha o te rongoā hahau

Patu ana te rongoā hahau i ngā pūtau horo ki te whakarea, pērā i ngā pūtau pukupuku. E tūkino hoki ia i ngā pūtau māori tipu-hohoro tae ki ngā pūtau makawe, me ngā pūtau i tō waha, tō puku me tō roro kōiwi. Ka puta ngā pānga autaha o te rongoā hahau hei hua o tēnei tūkinotanga.

He rerekē te momo pānga autaha me tōna tauamaha i tēnā tangata, i tēnā tangata, i runga tonu i te momo rongoā hahau ka whāngaia, i tō urupare hoki ki tērā. Kāore e kore he tino kino ngā pānga autaha i ētahi wā, heoi he pai tonu te maumahara he mea rangitahi te nuinga, ka taea anō te whakahoki ake. He mea nui tonu kia kōrerotia e koe ki tō nēhi, tākuta rānei, tētahi pānga autaha e mate nā koe nō te mea ka taea te maha o ērā te maimoa pai tonu, whāiti ana i te hūhi koretake noa iho ki a koe.

Ngā pānga ki te roro kōiwi

He pānga rangitahi tā te rongoā hahau ki te kaha o te roro kōiwi ki te whakaputa i ngā nuinga rawaka o ngā pūtau mā, ngā mōtepe me ngā pūtau whero. Ko te huanga, ka heke noa ō tatauranga toto i muri i te rua wiki o te maimoatanga. Kei te momo rongoā hahau ka whāngaia te roa o te wā e ora anō tō roro kōiwi me ngā tatauranga toto. Ko ngā raruraru matua e toru e pā ana ki ngā tatauranga toto iti rawa he:

- Nui ake te mōrea o te whakapokenga
- Marūtanga, he totototo
- Mate Toto Ngoikore

Te Whakapokenga

Ka iti rawa tō tatauranga pūtau toto mā i ngā rangi 10 ki te 14 i muri i te rongoā hahau, hei tēnei wā tonu ka nui rawa ai tō mōrea ki tētahi mate hōrapa. Ka whakaritea pea māu he whakamātauranga toto i tēnei wā kia tirohia ai tō tatauranga toto. I tēnei wā ka noho neutropenic koe, ko tōna tikanga he iti tō tatauranga neutrophil . He pūtau toto mā tino hira ngā neutrophil ka āwhina i a tātou ki te whawhai ki te whakapokenga. I te wā e iti rawa ai tō tatauranga pūtau toto mā, me ata tiaki i a koe anō hei kaupare i te whakapokenga pērā i te:

- **Whakaratarata tangata**
  Hei aha ngā rōpū tangata tokomaha; me karo i te hunga whai whakapokenga kapo noa (hei tauira, te maremare, te rewharewha, te koroputa).
- **Te takatū i te kai, te kai**
  Mā tō mātanga toto, mā te tapuhi rānei e tohutohu ko ēhea ngā kai kia karohia mēnā he iti rawa tō tatauranga pūtau toto mā. Tēnā pea ko te rārangi kai 'neutropenic' ara te rārangi kai 'mā' te mea tika māu. Ka whakaruruhautia koe i ngā moroiti tahumaero kei roto i ētahi kai, i ētahi inu. Me tino tūpato i te wā takatū kai, i te wā tunu kai. Me:
  - Horoi i ō ringa i mua i te takatū kai, i mua i te kai.
  - Pērā hoki tō whānau.
  - Mā te wāhi takatū kai..
  - Āta horoi i ngā huarākau, i ngā huawhenua.
  - Ka whakamahanatia ngā kai, me tino wera.
  - Me kotahi anake te wā e whakawera anō ai i te kai.
  - Me pau te kai i mua i te rā best before/ use by.
  - Me motuhake te papa tapahi miiti mata, me tika te tunu.

Kei te ipurangi ētahi anō mohiohio

- **Keeping yourself clean**
  When you have a low white blood cell count, you are more likely to get an infection from germs on your body. You need to:
  - Have a shower or bath every day.
  - Use a clean towel.
  - Wash your hands after using the toilet and ask family members to do the same.
  - Clean your teeth regularly with a soft brush.
  - If you have a central IV line, make sure it stays clean and check for signs of infection such as redness, swelling, pus or pain.
- **Gardening**
  Garden soil can cause infections in people with a low white blood cell count. You need to:
  - Wear gloves, as soil and potting mix can have harmful germs in it.
  - Wash any cuts you get from gardening very thoroughly.
  - Wear a mask to avoid breathing in particles.
- **Pets**
  When you have a low white blood cell count, you may get an infection from pets. You need to:
  - Always wash your hands after touching animals.
  - Do not let a pet lick your face.
  - Keep pets clean and treat them for worms and fleas.
  - Don't touch the litter tray or dog poo.

Your haematologist and nurse will advise you on how to reduce your risk of infection while your white blood cell count is low.

If you do develop an infection you may experience a fever (high temperature), which could be accompanied by an episode of rigor, where you shiver uncontrollably. Infections while you are neutropenic can be quite serious and need to be treated with antibiotics as soon as possible.

Important information

It is important that you contact your haematologist or the hospital for advice immediately (at any time of the day or night) if you are feeling very unwell, or if you experience any of the following:

- A temperature of 38°C or over and/or an episode of shivering.
- Bleeding or bruising, for example blood in your urine, faeces or sputum, bleeding gums or a persistent nosebleed.
- Nausea or vomiting that prevents you from eating or drinking or taking your normal medications.
- Diarrhoea, stomach cramps or constipation.
- Coughing or shortness of breath.
- The presence of a new rash, reddening of the skin, itching.
- A persistent headache.
- New pain or soreness anywhere.
- If you cut or otherwise injure yourself.
- If you notice pain, swelling, redness or pus anywhere on your body.

- Te horoi i a koe anō
  Ka heke ana te tatauranga pūtau toto mā, ka noho mōrea ki te pā o te whakapokenga i runga i tō tinana. Me:
  - Horoi i tō tinana i ia rā, i ia rā.
  - Whakamahi i te taora mā.
  - Horoi i ngā ringaringa i muri i te mimi, me pērā hoki te whānau.
  - Horoi i ngā niho ki te paraihe ngāwari.
  - Mēnā he ia-auraki tāu, me āta horoi, me kimi i ngā tohu whakapokenga pērā i te uraura, i te pupuhi, i te pirau, i te mamae.
- Te Māhi Māra
  Mēnā he iti te tatauranga pūtau toto mā, ka noho mōrea ki te pā o te whakapokenga kei roto i te oneone. Me:
  - Whakamau karapu nā te mea he moroiti tahumaero kei roto i ngā pēke oneone.
  - Tino horoi i te motu nō te mahi māra.
  - Whakamau ārai waha kia kore ai e whakangā i ngā korakora.
- Ngā Mōkai
  Ka heke ana te tatauranga pūtau toto mā, ka noho mōrea ki te pā o te whakapokenga nō ngā mōkai. Me:
  - Horoi i ō ringaringa i muri i te whakapā kararehe, i ngā wā katoa.
  - Kaua e tukuna kia mitimitihia tō kanohi e te mōkai.
  - Me mā ngā mōkai, me patu i ā rātou noke, i ā rātou puruhi.
  - Kaua e whakapā i te pouaka mimi, i te hamuti a te kuri.

Mā tō mātanga toto me tō nēhi e tohutohu kia pēhea e whāititia ai tō mōrearea whakapokenga ina iti rawa tō tatauranga pūtau mā.

Ki te pāngia koe e tētahi mate tērā pea e pā ki a koe he mate kirikā, he mea puta tahi me tētahi wā wiriwiri, e wiriwiri tino kino ai koe. I a koe e noho neutropenic ana ka taumaha rā pea ngā whakapokenga, nā kia tere tonu te maimoa ki te rongoā paturopi.

Ngā mōhiohio nui tonu

He mea nui kia whakapā inamata koe ki tō mātanga toto, ki te hōhipera rānei mō te tohutohu (ahakoa te haora i te awatea, i te pō rānei) mehemea kei te tino mate tō āhua, kei te pāngia rānei koe e tētahi o ēnei:

- He pāmahana 38°C neke atu rānei, te pānga hoki / rānei o te wiriwiri.
- Te totototo, te marūtanga rānei, hei tauira te toto ki tō mimi, ki tō tiko, ki tō hūare, he pae toto, he ihu toto pūtohe.
- Te pairua, te ruaki rānei e ārai ana i a koe i te kai, i te inu, i te kainga rānei i ō rongoā tikanga noa.
- Te torohī, te puku hakoko, te kōroke.
- Te mare, te hēmanawa.
- Te putanga o tētahi tūtutupō hōu, he kiri uraura, he mānoenoe.
- He ānini pūtohe.
- He pākinikini hōu, he mamae hōu rānei i tētahi wāhi.
- Ki te motu koe, ki te whara rānei i a koe anō.
- Ki te rongo koe i te mamae, ina kite i te pupuhi, te uraura, te pirau rānei i tētahi wāhi o tō tinana.

Bruising and/or bleeding

Your platelet count may also be affected and you could become thrombocytopenic (a low number of platelets circulating in the blood). When your platelet count is very low you can bruise and bleed more easily. During this time, it is helpful to avoid sharp objects in your mouth such as potato chips as these can cut your gums. Using a soft toothbrush also helps protect your gums. In some severe cases, a transfusion of platelets is given to reduce the risk of bleeding until the platelet count recovers.

Anaemia

If your red blood cell count and haemoglobin levels drop you may become anaemic. When you are anaemic you feel more tired and lethargic than usual. Other symptoms of anaemia include weakness, dizziness, pale skin and feeling short of breath when exercising.

If your haemoglobin level is very low, your doctor may prescribe a blood transfusion.

Nausea and vomiting

Nausea and vomiting are often associated with chemotherapy. You will be given anti-sickness drugs (otherwise known as antiemetics) before and for a few days after your chemotherapy treatment. Be sure to tell your haematologist if you think the antiemetics are not working for you and you still feel sick. There are many different types if antiemetics that can be tried. A mild sedative may also be used to help stop you feeling sick. This will help you relax but it might make you a little sleepy.

Some people find that eating smaller meals more frequently during the day, rather than a few large meals, helps to reduce nausea and vomiting. Drinking ginger ale or soda water and eating dry toast may also help if you are feeling sick. Getting plenty of fresh air, avoiding strong or offensive smells and taking the prescribed anti-sickness drugs as recommended by the nurse and doctor should also help.

Mucositis

Mucositis occurs when chemotherapy breaks down the rapidly divided epithelial cells lining the gastrointestinal tract (which goes from the mouth to the anus). This leaves the mucosal tissue (mucous membrane) open to ulceration and infection. More commonly the mouth and throat are affected and can cause pain, ulcers and increased saliva.

Mucositis can be quite painful and may require you to take pain relief medications. Mouthwashes/rinses are also helpful. Please ask your nurse for the hospital’s recommended mouthwash guidelines as some products that you can buy at the supermarket might not be suitable.

Bowel changes

Chemotherapy can cause damage to the lining of your bowels, which can cause cramping and diarrhoea. Be sure to tell your health care team if you are experiencing these symptoms. It is also important to tell them if you are experiencing constipation, discomfort or tenderness when you are going to the toilet. Some treatment can cause constipation but there are medications to help prevent or fix this. It’s important to drink plenty of water to stay well hydrated.

Te marūtanga, te totototo hoki/rānei

Ka pāngia hoki pea tō tatauranga mōtepe, otirā tērā pea ka thrombocytopenic koe (arā, he hekenga i te nuinga o ngā mōtepe e rere ana i te toto). Ina iti rawa tō tatauranga mōtepe ka tere koe ki te marū, ki te toto rānei. I tēnei wā he tika tonu kia ārai i ngā mea koi ki roto i tōu waha pērā i ngā tītipi rīwai kei motu ōu pae i ēnei. He āwhina anō tā tētahi parāhe niho mohe hei tiaki i ōu pae. I ētahi mate taumaha ka hoatu he whakatōnga mōtepe hei whakaiti i te mōrearea o te totototo kia tika anō te tatauranga mōtepe.

Te Mate Toto Ngoikore

Ki te heke tō tatauranga pūtau toto whero me ngā nuinga kawehā tērā pea ka pāngia koe e te mate toto ngoikore. Ina pāngia koe ki taua mate ka nui ake te ngenge me te ngoikore i tō te tikanga. Ko ētahi atu tohumate o te mate toto ngoikore he ngahengahe, he āmai, he teatea, he whakangāngā ina korikori.

Ki te iti rawa tō nuinga kawehā, tēnā e whakahaua pea e tō tākuta he whakatōnga toto.

Te pairua me te ruaki

He mea pātahi noa te pairua me te ruaki ki te rongoā hahau. Ka whāngaia koe ki te rongoā ārairuaki (antiemetics) i mua, i ētahi rangi anō i muri i tō maimoatanga ki te rongoā hahau. Kia āta kōrero ki tō mātanga toto ki te whakaaro koe kāore ngā ārairuaki i te mahi pai mōu, e hiaruaki tonu ana koe. He maha ngā momo ārairuaki rerekē ka taea te whakamātau. Ka taea hoki tētahi rongoā whakarokiroki māmā te whakamahi e mutu i a koe te pairua. He āwhina tā tēnei e parohe ai koe heoi ka matemoe pea koe.

E kite ana ētahi ko te kainga auau o ngā rahi iti ake i te rā, mahue ia ngā kai nui torutoru, he pai tonu hei whakaheke i te pairua me te ruaki. Mēnā kei te pairua tonu koe he āwhina anō tā te unu waireka kanekane me te kainga parāoa tōhi maroke. He āwhina anō pea tā te whiwhi nui ki te pūangi, tā te ārai i ngā haunga kaha, kino rānei, me te kainga i ngā rongoā ārairuaki kua whakahaua e te nēhi me te tākuta.

Te mucositis

Ka pāngia ki te mucositis mēnā ka patua ngā pūtau epithelial e uhi ana i te ara nakunaku kai (mai i te waha ki te nono). Ka noho mōrea te kiriuhi hupe ki te kōmaoa me te whakapokenga. I te nuinga o te wā, ka pāngia te waha me te korokoro, ka mamae, ka whai kōmaoa, ka nui haere te haware.

He tino mamae pea te mucositis me te hiahia kia kainga e koe ngā rongoā tāmi mamaetanga. He āwhina anō tā ngā horoiwaha. Uia tō nēhi mō ngā tohutohu horoi waha a te hōhipera tā te mea kāore noa iho e tika ētahi o ngā hua e hoko koe i te hokomaha.

Ngā whakarerekētanga o ngā whēkau

Tērā e mate ai te kiriuhi o ngā whēkau i te rongoā hahau e hua ake ai pea te hakoko me te torohī. Kia āta kōrero ki tō rōpū whakamaimoa hauora ina pā ki a koe ēnei tohumate. He mea nui hoki kia kōrero koe ki a rātou ina kōroke koe, ina rongo rānei ki te hūhi, ki te mamae rānei ina haere ai koe ki te heketua. I ētahi wā ko te kōroke tētahi hua o te maimoatanga, heoi anō he rongoā anō hei whakatika i tēnei mate. Me kaha te inu wai.

Hair loss

Alopecia (or hair loss) is a very common side effect of some types of chemotherapy drugs. It is usually temporary and your hair will start growing back after you stop chemotherapy. You may lose hair all over your body including eyebrows, eyelashes and pubic hair.

There are several things you can do to make yourself more comfortable if you lose your hair, which include:

- Wear a warm hat or beanie outside or overnight to keep your head warm.
- Wear a sunhat and apply sunscreen when you are outside as your skin will be sensitive to the sun and can burn easily.

Fatigue

Most people experience some degree of tiredness following chemotherapy. Extreme tiredness and fatigue is one of the most common symptoms and can be distressing and hard to manage. Fatigue is not relieved by rest and affects you physically, psychologically and socially. It may improve when treatment is finished but for some people it may last for months or years.

It is important to eat well, drink plenty of water and remain active by doing gentle exercise. It is important to talk to your nurse and doctors about your symptoms of fatigue and how you are coping.

More information available online

Radiotherapy

Radiotherapy (also known as radiation therapy) uses high-energy x-rays to kill cancer cells and shrink tumours. Radiotherapy is generally regarded as local therapy because it only destroys cancer cells in the treated area.

The radiation field is the area of the body that is being treated. Common radiation fields include the mantle field (neck, chest and armpit), the upper abdominal field (abdomen and sometimes the spleen) and the pelvic field (hips and groin). Due to improvements in technology, the radiation field can often be individualised to maximise treatment and reduce side effects. This is termed ‘involved field’ or ‘involved site’ radiation therapy.

What is involved in radiotherapy?

Before you start radiotherapy, a radiation specialist (a doctor who specialises in treating people with radiotherapy) will carefully calculate the correct dose of radiation therapy for you. The areas of your body that need to be treated will be marked with tiny ink dots on your skin. Sometimes a mould will need to be made, which helps hold you in place during the radiotherapy session.

Radiotherapy is usually given in small doses (also known as fractions) each weekday (Monday to Friday) over a few weeks in the radiotherapy department of the hospital. You do not usually have to be admitted to hospital for this treatment, but if you live far away you may need to organise some accommodation for this time. The social worker or nurses can assist you with his.

Te ngaronga o ngā makawe

Ko te makere o ngā makawe (alopecia) tētahi tino pānga autaha o ētahi rongoā hahau. Ko te tikanga he mea rangitahi tēnei. Tēnā pea ka makere ngā huruhuru katoa o tō tinana tae atu ki ngā tukemata, ngā kamo, ngā huruhuru o raro.

He maha ngā mea hei mahi ki te whakamauru i a koe anō i te makeretanga o ngā makawe:

- Me mau pōtae, piini rānei ina puta ki waho, i te pō hoki, kia mahana ai te pane.
- He mea nui anō kia mau pōtae, kia pānia ki te ārai rā ina puta koe ki waho nō te mea ka tino whakaraerae ō kiri ki ngā pānga whakamamae o te rā.

Te Rūhā

I muri i te rongoā hahau pā ai he āhua hūhi ki te nuinga o ngā tāngata. Ko tētahi o ngā tino tohumate he ngenge, he rūhā, ā, i ētahi wā, he āhuatanga whakaawangawanga, he mea uaua. Ahakoa te whakatā, ka rūhā tonu, ka mutu he pānga ā-tinana, ā-hinengaro, ā-pāpori. Tēnā pea ka pai ake a te mutunga o te maimoatanga, heoi anō mā ētahi tāngata ka pērā tonu te rūhā mō ngā marama, mō ngā tau.

Ko te mea nui me pai te kai, me nui te inu wai, me korikori. Me kōrero ka tika ki tō tapuhi, ki ō tākuta mō ō tohumate rūhā, mō tō kaha ki te whakahaere i aua tohumate.

Kei te ipurangi ētahi anō mohiohio

Haumanu-ā-iraruke

Ka whakamahia e te haumanu iraruke ngā hihī-x ngoi kaha hei patu i ngā pūtau pukupuku, hei tīngongo i ngā puku. E whakaarohia ana te haumanu iraruke hei maimoa wāhi noa nō te mea ka patua anake ko ngā pūtau pukupuku i te wāhi pū ka maimoatia.

Ko te āpure iraruke ko te wāhi o te tinana ka maimoatia. Kei roto i ngā āpure iraruketanga whānui noa ko te āpure pueru (te kakī, te uma me ngā kēkē), te āpure o runga o te puku (te puku, i te kōateate i ētahi wā) me te āpure papatoiake (ngā hope me te tapatapa). Nā ngā whanaketanga hangarau e taea ai te tārai i te maimoatanga mā te tangata, ka mutu ka heke iho ngā pānga kino. Huaina ai tēnei āhuatanga he iraruke 'āpure motuhake', he iraruke 'wāhi motuhake' rānei.

He aha kei roto i te haumanu iraruke?

I mua atu i to tīmatanga ki te haumanu iraruke, ka āta tātai tētahi mātanga iraruke pukupuku (he tākuta mātau ki te maimoa tāngata mā te haumanu iraruke) i te nuinga o te maimoa iraruke e tika ana mōu. Ka tohua ō kiri ki ngā ira moroiti waituhi. I ētahi wā ka hangaia tētahi hangarewa kōaro e pupuri ai i a koe i te wā o te haumanu iraruke.

Ko te tikanga ka whāngaia ai te maimoa iraruke ki ngā potonga iti (ka mōhiotia hoki hei hautau) ia rā wiki (Mane ki te Paraire) mō ētahi wiki torutoru i te wāhi maimoa iraruke o te hōhipera. Kāore he tikanga kia noho hōhipera koe mō tēnei maimoatanga, heoi mēnā kei tawhiti koe e noho ana tēnā pea me whakarite koe i tētahi wāhi noho mō tēnei wā. Mā te tauwhiro, ngā nēhi rānei koe e āwhina mō tēnei.

When you are having radiotherapy you usually lie on a table underneath the radiotherapy machine, which delivers the planned dose of radiation. Important structures such as your heart and lungs are shielded as much as possible to ensure that they are not affected by the treatment given. Radiotherapy is painless – in fact, you do not see or feel anything during the actual treatment. You will need to stay very still for a few minutes while the treatment is taking place. You might like to bring along some music to help you relax.

Side effects of radiotherapy

Radiotherapy can cause similar side effects to those caused by chemotherapy including nausea and vomiting, hair loss and fatigue. These are described in the previous section on page 40.

Skin reactions

Radiotherapy can cause a reddening of the skin that may also flake and become itchy. The staff at the radiotherapy department will advise you on how to care for your skin while you are having treatment. Gentle washing (avoiding perfumed products like scented soaps) and drying (patting rather than rubbing) is often recommended. You should also avoid any creams or moisturisers that contain traces of metals. Check with the radiotherapy department staff if you are unsure.

It is best to avoid direct sunlight on any area of skin that has received radiotherapy, even after the therapy has finished. This is because radiotherapy makes your skin more vulnerable to the damaging effects of the sun (i.e. sunburn and skin cancers).

Stem Cell Transplant

High doses of chemotherapy and radiotherapy destroy stem cells and your body cannot recover on its own. If you have a stem cell transplant, you are given high-dose chemotherapy followed by stem cells through a drip to replace the ones that were destroyed. The stem cells you are given may come from someone else (a donor) or may be your own stem cells that were frozen before the high-dose chemotherapy.

A stem cell transplant may also be called a bone marrow transplant or a peripheral blood stem cell transplant.

There are two types of stem cell transplant:

- **An autologous transplant** involves collecting your own stem cells, usually from your bloodstream, storing them and then returning them after you have received high doses of chemotherapy.
- **An allogeneic transplant** is where the stem cells are donated by another person, usually a sibling or unrelated matched donor. These donated stem cells replace your immune system with the immune system of the donor.

Having a stem cell transplant is a high-risk treatment option and a lot of things are taken into consideration before it is offered by your haematologist.

Palliative Care

The palliative care team is made up of doctors, nurses and other health care professionals who specialise in managing symptoms of blood cancers. They aim to improve quality of life through support and services as you face a life-limiting illness.

Ina whiwhi koe ki te maimoa iraruke ka takoto noa koe ki tētahi tēpu i raro i te pūrere iraruke e tuku ana i te potonga iraruke kua whakaritea. Ka āta āraia rawa ngā wāhi matua o tō tinana pērā i te manawa me ngā pūkahukahu kei pāngia e te maimoatanga kei te tukua. Kāore e mamae te maimoa iraruke - engari koa tē kitea, tē rangona rānei e koe tētahi mea i te maimoatanga. Kia takoto hū rawa koe mō ētahi meneti i te meatanga o te maimoatanga. Tēnā pea ka pai koe ki te kawe puoro mai hei whakaparohe i a koe.

Ngā pānga autaha o te maimoa iraruke

Ka rite tonu ngā pānga autaha o te maimoa iraruke ki ō te rongoā hahau tae ki te pairua me te ruaki, te makere o ngā makawe me te hūhi. Kua whakamāramahia ēnei āhuatanga i roto i te wāhanga i te whārangi 41.

Ngā hohenga o te kiri

Tērā te kiri ka uraura pea i te maimoa iraruke, tērā hoki te kiri ka hore, ka mānoenoe. Ka tohutohu ngā kaimahi i te wāhi maimoa iraruke i a koe kia pēhea te miri i tō kiri i a koe e whiwhi maimoatanga ana. Whakatītinatia ai te āta horoi (me te ārai i ngā hua whakakakara pērā i ngā hopi kakara) me te āta whakamaroke (te pōpō, waiho kē te mirimiri). Me ārai hoki koe i ngā kirīmi me ngā whakamākūkū kei roto nā te moroiti mētara. Kōrero ki ngā kaimahi i te tari maimoa iraruke ki te ruarua koe.

He pai tonu kia āraia ngā ihi o te rā ki ngā wāhi kiri kua maimoatia ki te iraruke, ahakoa kua oti rawa te maimoa. Ka pēnei nō te mea he nui te whakaraerae o tō kiri ki ngā pānga tūkino o te Rā (arā te tīkākā me ngā pukupuku kiri).

Te Whakatōnga Pūtau Pūrua

Whakamatea ai ngā pūtau pūrua e ngā potonga nui o te rongoā hahau me te maimoa iraruke, ka mutu tē taea e te tinana te whakarauora i a ia anō. Mēnā ka whakatōngia te pūtau pūrua māu, ka hoatu ki a koe te potonga nui rongoā hahau, whai muri tonu atu ka hoatu i ngā pūtau pūrua mā te ia-auraki hei whakahoki i ngā pūtau kua whakamatea. Tēnā pea nō tētahi atu tangata (he kaituku) aua pūtau pūrua, tēnā pea nōu ake, arā ko ngā pūtau pūrua i whakakōpakahia ai i mua i te rongoā hahau potonga nui.

Ko ētahi anō ingoa mō te whakatōnga pūtau pūrua, he whakatōnga roro kōiwi, he whakatōnga pūtau toto pūrua taitapa ranei.

E rua ngā momo whakatōnga pūtau pūrua:

- **Ko tā te whakatōnga whaiaro kei roto** he kohikohi i ngā pūtau pūrua nōu ake, ko te tikanga mai i ō toto, te whakaputu me te whakahoki i ēnei ki a koe i muri i tō whiwhinga ki ngā potonga rongoā hahau nui rawa.
- **Ko te whakatōnga nō waho** ko tērā e takohatia ai ngā pūtau pūrua e tētahi tangata kē, ko tōna tikanga e te tuakana, te teina rānei e tētahi tauhou kua whakatauritehia ngā momo toto. Rīwhitia ai tō pūnaha ārai mate ki te pūnaha ārai mate o te kaituku, e ōna pūtau purua.

Kei roto i te whakatōnga pūtau pūrua ōna mōreareatanga, nā reira he maha ngā āhuatanga hei huritao i mua i te whakataunga a te mātanga toto.

Te Tiaki i te Tangata Taumaha

Kei roto i te rōpū tiaki tangata taumaha he tākuta, he tapuhi, he mātanga hauora e arotahi ai ki te whakahaere i ngā tohumate mate pukupuku toto. Ko tā rātou he whakarato i te tautoko me ngā ratonga e whakapai ake ai i te kounga o tō ao i a koe e taumaha ana. Tēnā pea ko tā te rōpū tiaki tangata taumaha he manaaki, he atawhai.

The palliative care team may be involved in providing you with supportive care.

Many people associate the word ‘palliative’ with end-of-life care. The palliative care team supports all people with blood cancers, including end-of-life care.

Complementary Therapy

Complementary therapies are not considered standard medical treatment, however many people find that they are helpful in coping with their treatment and recovery from disease. There are many different types of complementary therapies. Examples include:

- Yoga
- Exercise
- Meditation
- Prayer
- Acupuncture
- Relaxation
- Massage
- Homeopathy
- Visualisation
- Aromatherapy
- Reiki
- Art therapy
- Music therapy
- Tai chi

Complementary therapies should ‘complement’ or assist with recommended medical treatment. They are not recommended as an alternative to medical treatment. It is important to realise that no complementary or alternative treatment has been proven to be effective against blood cancers and conditions. It is also important to let your haematologist know if you are using any complementary or alternative therapies in case they interfere with the effectiveness of chemotherapy or other treatments you may be having.

E ai ki ētahi, kei te hāngai te kupu 'palliative' ki te manaaki i te tangata kua tata te hemo. Ko tā te rōpū tiaki tangata taumaha he tautoko i ngā tāngata katoa kua pāngia ki te mate pukupuku toto, tae atu ki te tangata kua tata te hemo.

Te Haumanu Kīnaki

Ko ngā maimoa kīnaki ko ērā kāore e whakaarohia hei momo rongoā haumanu e whai ana i ngā tikanga o te hunga tākuta heoi anō ki te tokomaha he āwhina tō ēnei e taea ai e rātou te tū pakari i tō rātou maimoatanga, me te ora anō i te mate. He maha tonu ngā momo haumanu kīnaki. Hei tauira he:

- Yoga
- Korikori tinana
- Arotahi Whakaaro
- Karakia
- Werowero
- Mauri Tau
- Mirimiri
- Rongoā Kē Atu
- Pōhewatanga
- Rongoā ā-kakara tipuranga
- Reiki
- Mahi toi
- Mahi puoro
- Tai chi

Ko te tikanga me ‘kīnaki’, me āwhina rānei ngā maimoa kīnaki i ngā maimoa rongoā ka tūtohutia. Kāore tonu ēnei e tūtohutia hei kōwhiringa kē ki te haumanu rongoā. He mea nui kia mōhio kāhore tonu he hāpono kua whai hua tētahi maimoa kīnaki, maimoa whiringa kē rānei ki te whawhai i ngā mate pukupuku o te toto, ki ērā atu mate o te toto rānei. He mea nui anō kia whakamōhio koe ki tō mātanga toto mēnā e whakamahi ana koe i tētahi maimoa kīnaki, maimoa kē rānei kei whakararu tērā i te mahi tōtika a te rongoā hahau, a ētahi atu maimoa rānei ki a koe.

MAKING TREATMENT DECISIONS

Many people are overwhelmed when they are diagnosed with a blood cancer or blood condition.

In addition to this, waiting for test results and then having to make decisions about proceeding with the recommended treatment can be very stressful. Some people do not feel that they have enough information to make such decisions, while others feel overwhelmed by the amount of information they are given. It is important that you feel you have enough information about your illness and all of the treatment options available, so that you can make your own decisions about which treatment to have.

Second opinion

You can ask for a second opinion. A second opinion is when you see a different haematologist about your diagnosis and/or treatment. You can ask any member of your health care team, including your current haematologist, about getting a second opinion.

Questions to ask your health care team

Before going to see your haematologist, make a list of the questions you want to ask. It may be useful to keep a notebook or some paper and a pen handy so you can write down questions as they come to mind.

Bring a support person

Sometimes it is hard to remember everything the doctor has said. It may help to bring a family member or friend along who can write down the answers to your questions or prompt you to ask others, be an extra set of ears or simply be there to support you.

Being in a clinical trial

Your doctor might ask if you would like to take part in a clinical trial (also called research studies). Clinical trials help find out if a new treatment or different ways of giving treatment are better than treatments that are already available.

Taking part in a clinical trial is voluntary, which means that you do not have to take part if you do not want to. If you do not want to be part of a clinical trial, your decision will be respected. You do not have to give any reason why you don't want to be part of the trial and there will be no change in the way you are treated by the hospital or health care team.

Make sure you understand the reasons for the trial and what is involved. You need to give informed consent for a clinical trial. Take time to talk through the trial with your haematologist and other members of the health care team before signing the consent form.

More information available online

TE WHAKATAUNGA MŌ NGĀ TIKANGA MAIMOA

Ka āpurua ngā tāngata maha ina tautuhitia ki a rātou he mate pukupuku o te toto, tētahi atu mate rānei o te toto.

Tāpiri ki tēnei, he mea ahotea rawa te tatari ki ngā hua whakamātauranga, kātahi ki te whakatau kia pēhea te whai i te tikanga maimoa kua tūtohutia. Ki ētahi kāore e rawaka ō rātou mōhiohio ki te mea i ēnei whakatau, ki ētahi atu ka āpurua i te nui o te mōhiohio kua hoatu ki a rātou. He mea nui kia pai koe ki te nui o te mōhiohio kei a koe mō tō mate me ngā tikanga maimoa katoa e wātea ana, e āhei koe te whakatakoto whakatau mō te tikanga maimoa mōu.

He tākuta kē

Kei te āhei koe ki te tono i tētahi tākuta kē. Ko te tono tākuta kē he huri ki te mātanga toto kē atu mō te tautuhitanga, te maimoatanga hoki/rānei. Mā tētahi o tō rōpū whakamaimoa hauora, mā tō mātanga toto ā mohoa noa nei, e āwhina koe ki te tono tākuta kē.

He pātai ki tō rōpū whakamaimoa hauora

I mua i te haere ki te kite i tō mātanga toto mahia he rārangi pātai māna. He mea whaitake pea te pupuri puka tuhipoka, tētahi pepa me te pene ki tō taha hei tuhi i ngā pātai e ara ake ai.

Haria tētahi poutoko

I ētahi wā he mea uaua te maumahara ki ngā mea katoa kua kōrerotia e te tākuta. He āwhina anō pea tā te mau mai i tētahi o te whānau, hoa rānei hei tuhituhi i ngā whakautu ki ō pātai, hei aki rānei i a koe ki te pātai i ētahi atu, hei taringa tāpiri rānei, hei hoa tautoko noa iho rānei.

He whakamātautau haumanu

Ka tonoa pea e tō tākuta kia uru atu koe ki tētahi whakamātautau haumanu (e huaina ai ko ngā mahi rangahau, hoki) Ko tā te whakamātautau haumanu he whakawā mēnā he pai ake ngā tikanga maimoa hou i ngā tikanga maimoa ā mohoa noa nei.

He āhuatanga tūao te uru atu ki te whakamātautau haumanu, nā reira ehara i te mea me mahi ki te kore e pīrangitia ana. Ki te kore koe e pīrangi ki te uru atu ki te whakamātautau haumanu, kei te pai tērā. Ehara i te mea me whakamārama i tō kore pīrangi ki te uru atu ki te whakamātautau haumanu, ka mutu ka ōrite tonu te manaaki a te hōhipera, me te rōpū whakamaimoa hauora.

Me mātua mōhio ki te take matua o te whakamātautau haumanu, ki ngā mahi hei whakaoti māu, hoki. Me ōkawa te whakaaetanga ki te uru ki te whakamātautau haumanu. I mua i tō waitohu i te puka whakaae, me āta kōrerorero koutou ko tō mātanga toto, ko tō rōpū whakamaimoa hauora mō te whakamātautau haumanu.

Kei te ipurangi ētahi anō mohiohio

RELATIONSHIPS

A diagnosis of a blood cancer can have a positive and negative impact on relationships with family and friends.

Good communication is essential to supporting your relationships with your partner, children or friends.

Talking to your children

Helping children understand your diagnosis and how this will affect them can help them to cope with the changes and challenges.

Counselling or psychological support is available if you are concerned about how your child or children are coping. Ask your health care team or LBC Support Services Coordinator for more information.

For preschool or school-age children, it is a good idea to speak with their teachers and let them know about your diagnosis and how this is affecting family routines and relationships.

More information available online

Sexual relationships

You cannot give cancer to another person when you have sex with them.

People who have a blood cancer diagnosis and treatment can experience changes in their sex life. The reasons for this include:

- Extreme tiredness (fatigue)
- Side effects of treatment, e.g. nausea
- Changes in mood, e.g. anxiety
- Changes to your body image due to hair loss, weight change
- Changes to your libido
- Vaginal dryness or difficulty getting an erection

After your treatment, your sex life should start to return to how it was before your diagnosis.

It is important to talk to your partner about sex and how your diagnosis and treatment are making you feel. If you are having problems with sex and it is affecting your relationship, or you are worried about starting a new relationship, speak with someone in your health care team. They can give you more information or refer you to someone who can help.

NGĀ WHANAUNGATANGA

He piki, he heke te pānga o te tautuhitanga mate pukupuku toto ki te whanaungatanga i waenganui i te whānau me ngā hoa.

Me mārama te whakawhitiwhiti kōrero hei tautoko i te whanaungatanga i waenga i a kōrua ko tō hoa, i waenga i a koutou ko ō tamariki, koutou ko ō hoa.

Kōrero ki ō tamariki

Mā te āta whakamārama i te tautuhitanga me te pānga o taua āhuatanga ki a rātou, e āwhina ngā tamariki ki te eke panuku ahakoa ngā panonitanga me ngā wero.

Kei te wātea ki a koutou te tautoko ā-kare ā-roto, te tautoko ā-hinengaro hoki mēnā he māharahara ōu mō ō tamariki. Tonoa tō rōpū whakamaimoa hauora, te Kaiwhakahaere o ngā Ratonga Tautoko, arā te LBC, ki te hoatu i ētahi anō mōhiohio.

He pai tonu te kōrerorero ki ngā kaiako o ngā kōhungahunga; whākina atu ngā āhuatanga o tō tautuhitanga, me ngā pānga ki ngā mahi me ngā whanaungatanga i te kāinga.

Kei te ipurangi ētahi anō mohiohio

Te moe tahi

Tē taea te hopu i te mate pukupuku mai i te moe tahi.

Ka panoni haere ngā āhuatanga o te moe tahi mā te tangata kua pāngia e te mate pukupuku. Ka pērāhia nā:

- Te ngenge pūtohe
- Ngā pānga o te maimoatanga, e.g.te pairua
- Ngā panonitanga o ngā piropiro, e.g.te āwangawanga
- Ngā panonitanga o te āhua o te tinana arā ko te makere makawe, te makere mōmona
- Ngā panonitanga o te hiahia ki te onioni
- Te maroke o te tara, te ngohe o te ure

Whai muri atu i te maimoatanga, ko te tikanga ka hoki atu ki ngā āhuatanga moe tahi o mua i te tautahitanga.

Ko te mea nui, me kōrerorero kōrua ko tō hoa mō te onioni, mō te tautuhitanga, mō ō kare ā-roto. Mēnā he raruraru e pā ana ki te taha moe tahi, ā, kei te pāngia te whanaungatanga kei waenganui i a kōrua, mēnā rānei he māharahara ōu mō te whanaungatanga hou, me kōrero ki tētahi o tō rōpū whakamaimoa hauora. He mōhiohio anō ā rātou, ka tukuna koe rānei ki tētahi atu e āhei ai ki te āwhina i a koe.

Contraception

If you are having treatment for a blood cancer, you should always use a condom when having sex.

Even if you are beyond child-bearing age or no longer need birth control, it is still important to use a condom. The two main reasons for this are:

1. To protect yourself from getting an infection. Your low white blood cell count puts you at a higher risk of infection.
2. To protect your sexual partner while you are having chemotherapy. Chemotherapy drugs are secreted (come out) from your body via your urine, your bowel motions and other body secretions such as sperm and vaginal secretions. The small amounts of chemotherapy can cause irritation (a rash or itching) to your partner's skin.

If you are having sex and also receiving treatment for a blood cancer then there is a high risk of damage to an unborn child, so the appropriate contraception is essential.

Sex when you have a low platelet count

Speak with your doctor or nurse about sex if your platelet count is low as you may need to be careful due to the risk of bleeding.
It is often a good idea for women to use a lubricating jelly ('lube') such as KY Jelly.

KEEPING IN GOOD HEALTH AFTER YOUR DIAGNOSIS

After a diagnosis of a blood cancer, it is important to look after your health. When you feel well enough, regular exercise and eating healthy food are very important.

So that you do not have complications from your treatment or long-term side effects, the following health changes should be made immediately:

- Stop smoking
- Protect your skin from the sun
- Stop drinking alcohol (or cut down)

Ask your doctor or nurse about support to help you stop smoking and to reduce or stop drinking alcohol.

Your health care team can advise you on how to keep well. The physiotherapist can advise you about the exercise that is right for you. The dietitian can advise you about eating well, especially if your treatment is making you feel sick or you have taste changes.

Contact your LBC Support Services Coordinator if you would like more information about exercise options in your area.

Te Ārai Hapū

Mēnā e maimoatia ana koe mo te mate pukupuku toto, me whakamahi pūkoro ure mō te onioni i ngā wā katoa.

Ahakoa kua hipa rānei i te pakeke kia hapū ai, he mea nui tonu te mau pūkoro ure. E rua ngā take matua:

1. Ki te kaupare i te whakapokenga. Nā te tatauranga iti o ō pūtau toto mā he nui ake te mōrearea whakapoke.
2. Ki te whakaruruhau i tō hoa i a koe e whiwhi rongoā hahau ai. Puta mai ai ngā rongoā rongoā hahau i tō tinana i roto i tō mimi, i tō tiko, i aua putanga o te tinana pērā i te tātea me te wē o te tara. Ahakoa he iti te rongoā hahau, ka puta tētahi tūtutupō, ka mānoenoe rānei ngā kiri o tō hoa.

Mēnā kei te onioni koe i te wā e maimoatia ai mō te mate pukupuku toto, kei te mōrearea te kukune, nā reira he pai ake te whakamahi i te ārai hapū.

Te onioni i te wā e iti nei te tatauranga mōtepe

Kōrero ki tō rata, ki tō tapuhi rānei mō ngā pānga o te onioni mēnā he iti tō tatauranga mōtepe nā te mea me aro atu ki te āhuatanga totototo. He whakaaro pai kia whakamahia e te wahine te whakahinuhinu pērā i te KY Jelly.

TE HAUORA PAI WHAI MURI I TE TAUTUHITANGA

Whai muri i te tautuhitanga he mea nui te tiaki i tō hauora. I te wā e pai ai te hauora, he mea nui te korikori me te kai tika.

Me karo i ngā raruraru e puta ai i tō maimoatanga, me kaupare i ngā pānga wā roa, nā reira me whai i ēnei panonitanga i naia tonu nei:

- Me mutu te kai hikareti
- Whakaruruhautia ō kiri i te rā
- Me mutu te inu waipiro (me iti noa iho rānei)

Pātai atu ki tō tākuta, ki tō tapuhi rānei ki te whakaatu ki a koe i te tautoko e wātea ana ki te āwhina i a koe ki te whakamutu i te kai hikareti, ki te whakaiti i te inu waipiro.

Kei te āhei to rōpū whakamaimoa hauora ki te āwhina i a koe. Mā te kairomiromi koe e āwhina ki te mahi i ngā korikori e tika ana māu. Mā te mātanga kai e āwhina koe ki te whakarite i ngā kai tika mēnā kei te whakaruakina koe e tō maimoatanga, mēnā he rerekē ō reka kai ranei.

Whakapā atu ki tō Kaiwhakahaere Ratonga Tautoko LBC mēnā he hiahia ki ētahi mōhiohio mō ngā kōwhiringa korikori o tō rohe.

THE FUTURE

A diagnosis of a blood cancer can affect many areas of your life such as work or school, your emotions, relationships and finances.

For some people, a diagnosis of a blood cancer can mark a turning point in their life. For other people a diagnosis means they feel their life has been put ‘on hold’. The length of time it may take to recover emotionally and physically from a diagnosis or treatment is different for everyone.

Getting back to your previous routine of work, school or childcare, for example, may be a goal or may not be what you want anymore. You may need to make a few adjustments to your life.

Once your treatment has finished, you will have regular check-ups with your haematologist and health care team. You will also be encouraged to go back to see your general practitioner (GP). Your health care team will send regular letters to your GP to tell them about your progress and what needs to be followed up, e.g. blood tests and vaccinations. If your GP has any questions, they are able to contact your haematologist for advice.

Your health care team and LBC Support Services Coordinator can help you manage:

- Day-to-day practical problems including work, travel and travel insurance.
- Relationships and communication with family, friends and colleagues.
- Emotional effects from your disease and treatment, including fear of relapse and feeling uncertain about the future.

There is a lot of support available to help you and your family cope.

Ā MURI ATU

Mā te tautuhitanga o te mate pukupuku toto e whakapā atu ngā wāhanga huhua o tō ao pērā i te mahi, i te kura, i ngā kare ā-roto, i ngā whanaungatanga, i tō pūtea.

Ki ētahi ko te tautuhitanga mō te mate pukupuku toto, he komititanga o te oranga. Ki ētahi atu nā te tautuhitanga i 'tārewa' ai te oranga. Mā tēnā, mā tēnā tōna wā ake ki te whakamātūtū ā-kare ā-roto, ā-tinana, i te tautuhitanga, i te maimoatanga.

Hei tauira, tēnā pea ko te hokinga atu ki tō ao mahi, ao kura, ao tiaki kōhungahunga tō whāinga; tēnā pea he rerekē te whāinga. Tēnā pea me panoni i ētahi āhuatanga.

Ka mutu ana tō maimoatanga, ka hokihoki atu koe ki tō mātanga toto me tō rōpū whakamaimoa hauora hei tirohanga mā rātou. Ko te tikanga, ka hoki atu koe ki tō rata whānui ake (GP). Ka tonoa auautia ngā reta e tō rōpū whakamaimoa hauora ki tō GP e whāki ana i tō eke panuku, i ō hiahia hou e.g.ngā whakamātautau toto me ngā ārainga mate. Mēnā he pātai ā tō GP, māna e whakapā atu ki tō mātanga toto.

Mā tō rōpū whakamaimoa hauora me te Kaiwhakahaere Ratonga Tautoko LBC koe e āwhina ki te whakahaere i ngā:

- Mahi noa o te rā, arā ko te mahi, te haereere, te inihua haereere.
- Whanaungatanga me ngā whakawhiti kōrero ki te whānau, ki ngā hoa, ki ngā hoa mahi.
- Pānga kare ā-roto nō te tahumaero, no te maimoatanga, tae atu ki te mataku kei hoki anō ki taua mate, ā, ko te mataku mō te wā heke.

He nui te tautoko e wātea ana hei āwhina i a koutou ko tō whānau.

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Leukaemia & Blood Cancer New Zealand

Leukaemia & Blood Cancer New Zealand (LBC) is the leading organisation in New Zealand dedicated to supporting patients and their families living with leukaemia, lymphoma, myeloma and related blood conditions.

Since 1977, our work has been made possible through our fundraising events and the generous support we receive from individuals, companies, trusts and grants. We do not receive government funding.

LBC is committed to improving the quality of life for patients and their families living with these blood cancers and conditions by providing patient support services, investing and supporting research, providing information, raising awareness and advocating on behalf of patients and their families.

NGĀ MIHI

Tēnei te mihi a Leukaemia & Blood Cancer (LBC) New Zealand ki ngā tāngata katoa i āwhina mai ai ki te tuhi i tēnei puka: koutou i pāngia ai ki te mate pukupuku toto, ō koutou kaitautoko, ō koutou rōpū whakamaimoa hauora, me ngā kaimahi LBC.

Leukaemia & Blood Cancer New Zealand

Ko Leukaemia & Blood Cancer New Zealand (LBC) tētahi whakahaere ā-motu i Aotearoa i whakaihia ki te tautoko i ngā tūroro me ō rātou whānau e mate ana i te pukupuku toto, te pukupuku taikiri, te pukupuku roro kōiwi, me ngā mate toto pērā.

Mai i te tau 1977, kua taea ā mātou mahi nā ngā mahi kohikohi moni me te tautoko ohaoha e whiwhi nei mātou i ngā tāngata takitahi, i ngā kamupene, i ngā rōpū kaitiaki me ngā moni takoha. Kāore mātou e whiwhi pūtea kāwanatanga.

Kua ū te LBC ki tōna kaupapa he whakatairanga i te kounga o te ao o te tūroro me tōna whānau e pāngia ai e ēnei mate pukupuku toto; mā te LBC e whakarato ratonga, e tautoko ā-pūtea te rangahau, e pānui atu ngā mōhiohio, e tahora mōhiohio, e hāpai ngā mōtika a te tūroro me tōna whānau.

HAEMATOLOGY CENTRES IN NEW ZEALAND

Centre	Address	Phone
Whangarei Hospital	Hospital Road, Whangarei	(09) 430 4100
North Shore Hospital	Shakespeare Road, Takapuna	(09) 486 8900
Auckland City Hospital	Park Road, Grafton	(09) 367 0000
Starship Hospital	Park Road, Grafton	(09) 367 0000
Middlemore Hospital	Hospital Road, Otahuhu	(09) 276 0044
Waikato Hospital	Pembroke Street, Hamilton	(07) 839 8899
Thames Hospital	Mackay Street, Thames	(07) 868 0040
Tauranga Hospital	Cameron Road, Tauranga	(07) 579 8000
Rotorua Hospital	Pukeroa Street, Rotorua	(07) 348 1199
Hastings Hospital	Omahu Road, Hastings	(06) 878 8109
Whakatane Hospital	Stewart Street, Whakatane	(07) 306 0999
Palmerston North Hospital	Ruahine Street, Palmerston North	(06) 356 9169
Wellington Hospital	Riddiford Street, Newtown	(04) 385 5999
Nelson Hospital	Tipahi Street, Nelson	(03) 546 1800
Christchurch Hospital	Riccarton Avenue, Christchurch	(03) 364 0640
Dunedin Hospital	Great King Street, Dunedin	(03) 474 0999
Invercargill Hospital	Kew Road, Invercargill	(03) 218 1949

KO NGĀ WĀHI WHAKAHAERE TAKE TOTO I AOTEAROA

Wāhi Whakahaere	Wāhi Noho	Waea
Whangarei Hospital	Hospital Road, Whangarei	(09) 430 4100
North Shore Hospital	Shakespeare Road, Takapuna	(09) 486 8900
Auckland City Hospital	Park Road, Grafton	(09) 367 0000
Starship Hospital	Park Road, Grafton	(09) 367 0000
Middlemore Hospital	Hospital Road, Otahuhu	(09) 276 0044
Waikato Hospital	Pembroke Street, Kirikiriroa	(07) 839 8899
Thames Hospital	Mackay Street, Pārāwai	(07) 868 0040
Tauranga Hospital	Cameron Road, Tauranga	(07) 579 8000
Rotorua Hospital	Pukeroa Street, Rotorua	(07) 348 1199
Hastings Hospital	Omahu Road, Heretaunga	(06) 878 8109
Whakatane Hospital	Stewart Street, Whakatane	(07) 306 0999
Palmerston North Hospital	Ruahine Street, Te Papaioea	(06) 356 9169
Wellington Hospital	Riddiford Street, Newtown	(04) 385 5999
Nelson Hospital	Tipahi Street, Whakatū	(03) 546 1800
Christchurch Hospital	Riccarton Avenue, Ōtautahi	(03) 364 0640
Dunedin Hospital	Great King Street, Ōtepoti	(03) 474 0999
Invercargill Hospital	Kew Road, Waihōpai	(03) 218 1949

Contacting us

Leukaemia & Blood Cancer New Zealand provides services and support throughout New Zealand. Every person's experience of living with a blood cancer or condition is different. Living with leukaemia, lymphoma, myeloma or a related blood condition is not easy, and our Support Services Coordinators are here to help.

Freephone 0800 15 10 15
Telephone 09 638 3556
Facsimile 09 638 3557
Email info@leukaemia.org.nz

National Office

6 Claude Road, Epsom 1023
PO Box 99182, Newmarket 1149
Auckland, New Zealand

Whakapā mai

He ratonga tautoko nā Leukaemia & Blood Cancer New Zealand huri noa i te motu. He rerekē te wheako o tēnā, o tēnā, mō te pānga o te mate pukupuku toto ki te tangata. Ehara i te mea he āhuatanga māmā noa te noho ki te taha o te mate ruru toto, o te mate pukupuku waitinana, o te mate pukupuku roro kōiwi, o tētahi mate toto e hāngai ana.Ko tā te Kaiwhakahaere Ratonga Tautoko, he āwhina.

Waea koreutu 0800 15 10 15
Waea 09 638 3556
Waea tuhi 09 638 3557
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Tāmaki Makau Rau, Aotearoa

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