

# Breast metastatic nab-PACLitaxel three weekly SUPERSEDED

ID: 90 v.6 Superseded

This protocol has been superseded as superior alternatives are available.

Check for clinical trials in this patient group. Link to [Australian Clinical Trials](#) website

The anticancer drug(s) in this protocol may have been included in the ADDIKD guideline. Dose recommendations in kidney dysfunction have yet to be updated to align with the ADDIKD guideline. Recommendations will be updated once the individual protocol has been evaluated by the reference committee. For further information refer to the ADDIKD guideline. To assist with calculations, use the [eviQ Estimated Glomerular Filtration Rate \(eGFR\) calculator](#).

## International Consensus Guideline for Anticancer Drug Dosing in Kidney Dysfunction (ADDIKD)

2022

[Click here](#)



### Related pages:

- [Breast metastatic nab-PACLitaxel weekly](#)

## Treatment schedule - Overview

### Cycle 1 and further cycles

Drug	Dose	Route	Day
nab-PACLitaxel	260 mg/m <sup>2</sup>	IV infusion	1

**Frequency:** 21 days

**Cycles:** Continuous until disease progression or unacceptable toxicity; usually 6 cycles

**Drug status:** Nab-paclitaxel is [PBS authority](#)

**Cost:** ~ \$1,820 per cycle

## Treatment schedule - Detail

The supportive therapies (e.g. antiemetics, premedications, etc.), infusion times, diluents, volumes and routes of administration, if included, are listed as defaults. They may vary between institutions and can be substituted to reflect individual institutional policy.

Antiemetics if included in the treatment schedule are based upon recommendations from national and international guidelines. These are **defaults only** and may be substituted to reflect individual institutional policy. [Select here for recommended doses of alternative antiemetics.](#)

### Cycle 1 and further cycles

Day 1		
Metoclopramide	10 mg (PO)	one tablet when necessary (maximum of 30 mg/24 hours, up to 5 days)
nab-PACLitaxel	260 mg/m <sup>2</sup> (IV infusion)	over 30 minutes

**Frequency:** 21 days

**Cycles:** Continuous until disease progression or unacceptable toxicity; usually 6 cycles

## Indications and patient population

- Metastatic breast cancer.

## Clinical information

<b>Venous access required</b>	IV cannula (IVC) or central venous access device (CVAD) is required to administer this treatment. Read more about <a href="#">central venous access device line selection</a>
<b>Hypersensitivity/infusion related reaction</b>	Low risk with nab-paclitaxel. Not to be used in patients who have had a prior hypersensitivity reaction to albumin. Read more about <a href="#">Hypersensitivity reaction</a>
<b>Emetogenicity LOW</b>	Suggested default antiemetics have been added to the treatment schedule, and may be substituted to reflect institutional policy. Ensure that patients also have sufficient antiemetics for breakthrough emesis: Metoclopramide 10 mg three times a day when necessary (maximum of 30 mg/24 hours, up to 5 days) OR Prochlorperazine 10 mg PO every 6 hours when necessary. Read more about <a href="#">preventing anti-cancer therapy induced nausea and vomiting</a>
<b>Peripheral neuropathy</b>	Assess prior to each treatment. If a patient experiences grade 2 or greater peripheral neuropathy, a dose reduction, delay, or omission of treatment may be required; review by medical officer before commencing treatment. Read more about <a href="#">peripheral neuropathy</a> Link to <a href="#">chemotherapy-induced peripheral neuropathy screening tool</a>
<b>Blood tests</b>	FBC, EUC and LFTs at baseline and prior to each treatment.
<b>Hepatitis B screening and prophylaxis</b>	Routine screening for HBsAg and anti-HBc is NOT usually recommended for patients receiving this treatment. Read more about <a href="#">hepatitis B screening and prophylaxis in cancer patients requiring cytotoxic and/or immunosuppressive therapy</a>
<b>Vaccinations</b>	Live vaccines are contraindicated in cancer patients receiving immunosuppressive therapy and/or who have poorly controlled malignant disease. Refer to the recommended schedule of vaccination for immunocompromised patients, as outlined in the <a href="#">Australian Immunisation Handbook</a> . Read more about <a href="#">COVID-19 vaccines and cancer</a> .
<b>Fertility, pregnancy and lactation</b>	Cancer treatment can have harmful effects on fertility and this should be discussed with all patients of reproductive potential prior to commencing treatment. There is a risk of foetal harm in pregnant women. A pregnancy test should be considered prior to initiating treatment in females of reproductive potential if sexually active. It is important that all patients of reproductive potential use effective contraception whilst on therapy and after treatment finishes. Effective contraception methods and adequate contraception timeframe should be discussed with all patients of reproductive potential. Possibility of infant risk should be discussed with breastfeeding patients. Read more about the <a href="#">effect of cancer treatment on fertility</a>

## Dose modifications

Evidence for dose modifications is limited, and the recommendations made on eviQ are intended as a guide only. They are generally conservative with an emphasis on safety. Any dose modification should be based on clinical judgement, and the individual patient's situation including but not limited to treatment intent (curative vs palliative), the anti-cancer regimen (single versus combination therapy versus chemotherapy versus immunotherapy), biology of the cancer (site, size, mutations, metastases), other treatment related side effects, additional co-morbidities, performance status and patient preferences. Suggested dose modifications are based on clinical trial findings, product information, published guidelines and reference committee consensus. The dose reduction applies to each individual dose and not to the total number of days or duration of treatment cycle unless stated otherwise. Non-haematological gradings are based on [Common Terminology Criteria for Adverse Events \(CTCAE\)](#) unless otherwise specified. Renal and hepatic dose modifications have been standardised where possible. For more information see dosing considerations & disclaimer.

The dose recommendations in kidney dysfunction (i.e. renal impairment) displayed may not reflect those in the ADDIKD guideline and have been included for historical reference only. Recommendations will be updated once the individual protocol has been evaluated by the reference committee, with this version of the protocol then being archived. Clinicians are expected to refer to the ADDIKD guideline prior to prescribing in kidney dysfunction.

[International Consensus Guideline for Anticancer Drug Dosing in Kidney Dysfunction \(ADDIKD\)](#).

**Note:** all dose reductions are calculated as a percentage of the starting dose.

Haematological toxicity	
ANC x 10 <sup>9</sup> /L (pre-treatment blood test)	
1.0 to less than 1.5	Refer to local institutional guidelines; it is the view of the expert clinicians that treatment should continue if patient is clinically well
0.5 to less than 1.0	Delay treatment until recovery
less than 0.5	Delay treatment until recovery and reduce nab-paclitaxel by 25% for subsequent cycles
Febrile neutropenia	Delay treatment until recovery and reduce nab-paclitaxel by 25% for subsequent cycles
Platelets x 10 <sup>9</sup> /L (pre-treatment blood test)	
75 to less than 100	The general recommendation is to delay, however if the patient is clinically well it may be appropriate to continue treatment; refer to treating team and/or local institutional guidelines
50 to less than 75	Delay treatment until recovery
less than 50	Delay treatment until recovery and reduce nab-paclitaxel by 25% for subsequent cycles

Renal impairment	
No dose modifications necessary *	

\* nab-paclitaxel is not renally cleared; however there are no studies done in patients with severe renal impairment.

Hepatic impairment	
Hepatic dysfunction	
Mild	Reduce nab-paclitaxel by 25% *
Moderate	Reduce nab-paclitaxel by 50% *
Severe	Omit nab-paclitaxel

\* nab-paclitaxel has not been studied in patients with hepatic impairment; these recommendations are a guide and patients should be monitored for signs of toxicity, particularly myelosuppression.

Peripheral neuropathy	
Grade 2 which is present at the start of the next cycle	Reduce nab-paclitaxel by 25%, If persistent, reduce nab-paclitaxel by 50%
Grade 3 or Grade 4	Omit nab-paclitaxel

Mucositis and stomatitis	
Grade 2	Delay treatment until toxicity has resolved to Grade 1 or less and reduce the dose for subsequent cycles as follows: 1 <sup>st</sup> occurrence: No dose reduction 2 <sup>nd</sup> occurrence: Reduce nab-paclitaxel by 25% 3 <sup>rd</sup> occurrence: Reduce nab-paclitaxel by 50% 4 <sup>th</sup> occurrence: Omit nab-paclitaxel
Grade 3 or Grade 4	Delay treatment until toxicity has resolved to Grade 1 or less and reduce the dose for subsequent cycles as follows: 1 <sup>st</sup> occurrence: Reduce nab-paclitaxel by 50% 2 <sup>nd</sup> occurrence: Omit nab-paclitaxel

## Interactions

Drug interactions in eviQ protocols are under review and being updated to align with current literature. Further site-wide updates and changes will occur in due course. *References & Disclaimer*

The drug interactions shown below are not an exhaustive list. For a more comprehensive list and for detailed information on specific drug interactions and clinical management, please refer to the specific drug product information and the following key resources:

- [MIMS - interactions tab](#) (includes link to a CYP-450 table) (login required)
- [Australian Medicines Handbook \(AMH\) – interactions tab](#) (login required)
- [Micromedex Drug Interactions](#) (login required)
- [Cancer Drug Interactions](#)
- [Cytochrome P450 Drug Interactions](#)

Nab-paclitaxel		
	Interaction	Clinical management
<b>CYP3A4 inhibitors (e.g. aprepitant, azole antifungals, clarithromycin, erythromycin, grapefruit juice, ritonavir etc.)</b>	Increased toxicity of nab-paclitaxel possible due to reduced clearance	Monitor for nab-paclitaxel toxicity
<b>CYP3A4 inducers (e.g. carbamazepine, phenytoin, phenobarbitone, rifampicin, St John's wort etc.)</b>	Reduced efficacy of nab-paclitaxel possible due to increased clearance	Monitor for decreased clinical response to nab-paclitaxel
<b>CYP2C8 inhibitors (e.g. pazopanib, lapatinib, gemfibrozil, montelukast, ethinyloestradiol, tretinoin, testosterone etc.)</b>	Increased toxicity of nab-paclitaxel possible due to reduced clearance	Monitor for nab-paclitaxel toxicity

General		
	Interaction	Clinical management
<b>Warfarin</b>	Anti-cancer drugs may alter the anticoagulant effect of warfarin.	Monitor INR regularly and adjust warfarin dosage as appropriate; consider alternative anticoagulant.
<b>Direct oral anticoagulants (DOACs) e.g. apixaban, rivaroxaban, dabigatran</b>	Interaction with both CYP3A4 and P-gp inhibitors /inducers.  DOAC and anti-cancer drug levels may both be altered, possibly leading to loss of efficacy or toxicity (i.e. increased bleeding).	Apixaban: avoid concurrent use with strong CYP3A4 and P-gp inhibitors. If treating VTE, avoid use with strong CYP3A4 and P-gp inducers.  Rivaroxaban: avoid concurrent use with strong CYP3A4 and P-gp inhibitors.  Dabigatran: avoid combination with strong P-gp inducers and inhibitors.  If concurrent use is unavoidable, monitor closely for efficacy/toxicity of both drugs.
<b>Digoxin</b>	Anti-cancer drugs can damage the lining of the intestine; affecting the absorption of digoxin.	Monitor digoxin serum levels; adjust digoxin dosage as appropriate.
<b>Antiepileptics</b>	Both altered antiepileptic and anti-cancer drug levels may occur, possibly leading to loss of efficacy or toxicity.	Where concurrent use of an enzyme-inducing antiepileptic cannot be avoided, monitor antiepileptic serum levels for toxicity, as well as seizure frequency for efficacy; adjust dosage as appropriate. Also monitor closely for efficacy of the anti-cancer therapy.
<b>Antiplatelet agents and NSAIDs</b>	Increased risk of bleeding due to treatment related thrombocytopenia.	Avoid or minimise combination. If combination deemed essential, (e.g. low dose aspirin for ischaemic heart disease) monitor for signs of bleeding.
<b>Serotonergic drugs, including selective serotonin reuptake inhibitors (SSRIs e.g. paroxetine) and serotonin noradrenaline reuptake inhibitors (SNRIs e.g. venlafaxine)</b>	Increased risk of serotonin syndrome with concurrent use of 5-HT3 receptor antagonists (e.g. palonosetron, ondansetron, granisetron, tropisetron, dolasetron, etc.)	Avoid combination. If combination is clinically warranted, monitor for signs and symptoms of serotonin syndrome (e.g. confusion, agitation, tachycardia, hyperreflexia). For more information link to <a href="#">TGA Medicines Safety Update</a>
<b>Vaccines</b>	Diminished response to vaccines and increased risk of infection with live vaccines.	Live vaccines (e.g. BCG, MMR, zoster and varicella) are contraindicated in patients on immunosuppressive therapy. Use with caution in patients on non-immunosuppressive therapy. For more information; refer to the recommended schedule of vaccination for cancer patients, as outlined in the <a href="#">Australian Immunisation Handbook</a>

## Administration

*eviQ provides safe and effective instructions on how to administer cancer treatments. However, eviQ does not provide every treatment delivery option, and is unable to provide a comprehensive list of cancer treatment agents and their required IV line giving set/filter. There may be alternative methods of treatment administration, and alternative supportive treatments that are also appropriate. Please refer to the individual*

## Day 1

**Approximate treatment time: 45 minutes**

[Safe handling and waste management](#)

[Safe administration](#)

[General patient assessment](#) prior to each day of treatment.

[Peripheral neuropathy assessment tool](#)

Any toxicity grade 2 or greater may require dose reduction, delay or omission of treatment and review by medical officer before commencing treatment.

Prime IV line(s).

Insert IV cannula or access [TIVAD](#) or [CVAD](#).

**Note:** nab-paclitaxel can be administered using a standard PVC IV line and should not be administered through a filter.

### Pre treatment medication

Administer antiemetics if required

### ⌚ Chemotherapy - Time out

#### Nab-paclitaxel

**Administer nab-paclitaxel (irritant with vesicant properties):**

- via IV infusion over 30 minutes
- flush with ~100 mL of sodium chloride 0.9%.

Remove IV cannula and/or deaccess [TIVAD](#) or [CVAD](#).

**Continue [safe handling](#) precautions until 7 days after completion of drug(s)**

## Discharge information

### Antiemetics

- Antiemetics as prescribed.

### Patient information

- Ensure patient receives patient information sheet.

## Side effects

*The side effects listed below are not a complete list of all possible side effects for this treatment. Side effects are categorised into the approximate onset of presentation and should only be used as a guide.*

### Immediate (onset hours to days)

<b>Nausea and vomiting</b>	Read more about <a href="#">prevention of treatment induced nausea and vomiting</a>
<b>Taste and smell alteration</b>	Read more about <a href="#">taste and smell changes</a>

Early (onset days to weeks)	
<b>Neutropenia</b>	Abnormally low levels of neutrophils in the blood. This increases the risk of infection. Any fever or suspicion of infection should be investigated immediately and managed aggressively. Read more about <a href="#">immediate management of neutropenic fever</a>
<b>Thrombocytopenia</b>	A reduction in the normal levels of functional platelets, increasing the risk of abnormal bleeding.  Read more about <a href="#">thrombocytopenia</a>
<b>Oral mucositis</b>	Erythematous and ulcerative lesions of the gastrointestinal tract (GIT). It commonly develops following chemotherapy, radiation therapy to the head, neck or oesophagus, and high dose chemotherapy followed by a blood and marrow transplant (BMT). Read more about <a href="#">oral mucositis</a>
<b>Diarrhoea</b>	Read more about <a href="#">treatment induced diarrhoea</a>
<b>Ocular changes</b>	Symptoms may include eye pain, blurred vision, blepharitis, uveitis, optic neuritis, tear duct stenosis, conjunctivitis, hyperlacrimation, watery or dry eyes and photophobia.
<b>Arthralgia and myalgia</b>	Generalised joint pain or and/or stiffness and muscle aches, often worse upon waking or after long periods of inactivity. Can improve with movement. May be mild or severe, intermittent or constant and accompanied by inflammation. Read more about <a href="#">arthralgia and myalgia</a>
<b>Peripheral neuropathy</b>	Typically symmetrical sensory neuropathy, affecting the fingers and toes, sometimes progressing to the hands and feet. It is associated with several classes of anti-cancer drugs. These include taxanes, platinum-based compounds, vinca alkaloids and some drugs used to treat multiple myeloma. Read more about <a href="#">peripheral neuropathy</a>
<b>Fatigue</b>	Read more about <a href="#">fatigue</a>
<b>Skin rash</b>	Anti-cancer drugs can cause a number of changes in the skin with maculo-papular rash the most common type of drug-induced skin reaction. Read more about <a href="#">skin rash</a>

Late (onset weeks to months)	
<b>Anaemia</b>	Abnormally low levels of red blood cells (RBCs) or haemoglobin in the blood. Read more about <a href="#">anaemia</a>
<b>Alopecia</b>	Hair loss may occur from all parts of the body. Patients can also experience mild to moderate discomfort of the hair follicles, and rarely pain as the hair is falling out. Read more about <a href="#">alopecia</a> and <a href="#">scalp cooling</a>
<b>Nail changes</b>	Hyperpigmentation, paronychia, onycholysis, splinter haemorrhage, pyogenic granuloma formation, subungal haematoma and subungal hyperkeratosis are some of the nail changes associated with anti-cancer drugs. Read more about <a href="#">nail toxicities</a>

Delayed (onset months to years)	
<b>Menopausal symptoms</b>	Irregular or absent periods, hot flushes, mood swings, sleep disturbance, night sweats, vaginal dryness, decreased libido and dyspareunia. This is caused by ovarian failure and may be temporary or permanent.

## Evidence

This protocol has been superseded due to the availability of superior alternatives.

The evidence for this protocol comes from a large, international phase III trial performed by Gradishar et al 2005 to confirm superior efficacy and reduced toxicity of nab-paclitaxel compared with standard 3 weekly paclitaxel in patients with metastatic

breast cancer.<sup>1</sup>

Between November 2001 to November 2002, 454 patients were enrolled and randomly assigned to 2 treatment groups, 229 to nab-paclitaxel and 225 to standard 3 weekly paclitaxel.

The primary end point was overall response rate (ORR) and the secondary endpoints were time to treatment progression (TTP) and overall survival (OS).

## Efficacy

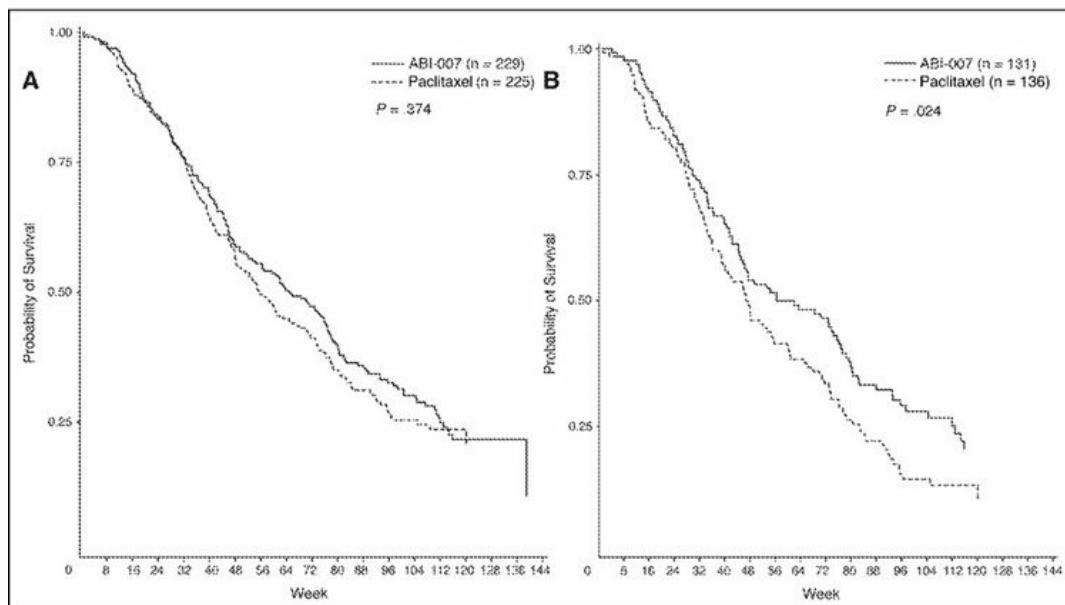
Overall response rate (ORR) was significantly greater for nab-paclitaxel than for standard paclitaxel (3 weekly) in all patients.

Median time to tumour progression (TTP) was also significantly longer with nab-paclitaxel.

Although no difference in overall survival was observed in first-line patients, the difference was statistically significant in the nab-paclitaxel group when given as second-line or greater therapy.

Efficacy <sup>1</sup>	nab-paclitaxel (n= 229)	standard paclitaxel (3 weekly) (n= 225)	p-value
Overall response rate	33%	19%	0.001
Time to progression	23 weeks	16.9 weeks	0.006
Overall survival (all patients)	65 weeks	55.7 weeks	0.374
Overall survival (patients who received second-line or greater therapy)	56.4 weeks	46.7 weeks	0.024

(A) Overall survival in all patients (B) Overall survival in patients who received second-line or greater therapy<sup>1</sup>



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## Toxicity

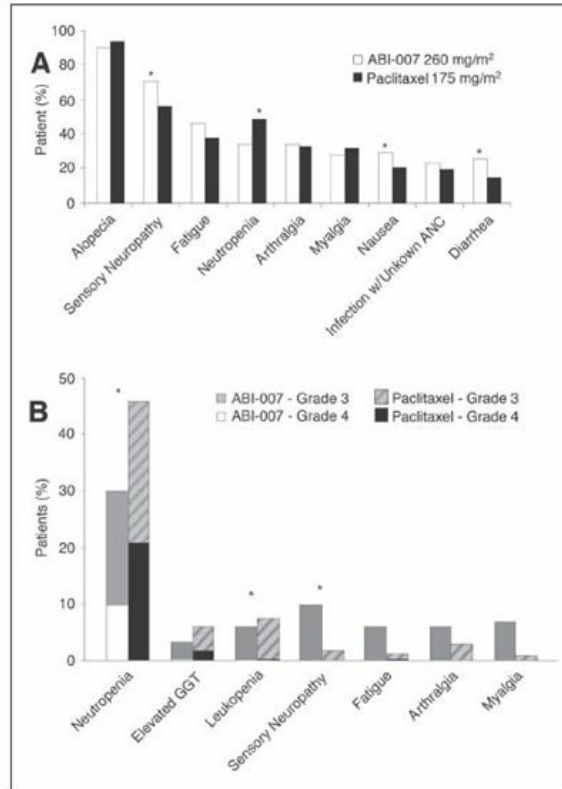
Adverse event related discontinuations, dose reductions and dose delays were infrequent in both treatment arms. There was also no difference in quality of life scores between groups.

Despite a 50% increase in the dose of paclitaxel, patients who received nab-paclitaxel experienced significantly less neutropenia ( $p < 0.001$ ).

Although the incidence of grade 3 sensory neuropathy was higher with nab-paclitaxel than with standard 3 weekly paclitaxel (10% vs 2%), the neuropathy in the nab-paclitaxel group did improve rapidly (median, 22 days) with treatment interruption.

6 patients (3%) in the nab-paclitaxel group and 8 patients (4%) in the standard 3 weekly paclitaxel group died during the study, all as a result of disease progression. No treatment related deaths occurred in the nab-paclitaxel group; 1 patient (<1%) in the standard 3 weekly paclitaxel group died of multiorgan failure, which was possibly related to treatment but may also have been a result of





**Fig 4.** (A) Adverse events (all grades) reported in more than 20% of patients in either treatment group. ANC, absolute neutrophil count. (B) Treatment-related grade 3 and 4 adverse events reported in  $\geq 5\%$  of patients in either group. Data are based on adverse event reporting. (\*)  $P < .05$ , Cochran-Mantel-Haenszel test. GGT, gamma glutamyl transferase.

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## References

- 1 Gradishar, W., Tjulandin, S., Davidson, N., et al. 2005. "Phase III Trial of Nanoparticle Albumin-Bound Paclitaxel Compared With Polyethylated Castor Oil–Based Paclitaxel in Women With Breast Cancer." *J.Clin Oncol.* 23(31):7794-7803

## History

### Version 6

Date	Summary of changes
13/08/2021	Protocol reviewed by the Medical Oncology Reference Committee. Protocol superseded as superior alternatives are available. Version number changed to V.6. Next review in 2 years.

### Version 5

Date	Summary of changes
08/05/2009	New protocol taken to Medical Oncology Reference Committee meeting.
01/10/2009	Approved and published on eviQ.
13/11/2009	"Patients who are resistant to taxane therapy" removed from cautions/exclusions.
28/06/2010	Haematological dose modifications updated (20% changed to 25% dose reduction).
26/10/2010	Dose modifications updated: "consider reducing" changed to "reduce".

Date	Summary of changes
07/12/2010	PBS indication updated to reflect changes in PBS listing.
20/01/2011	New format to allow for export of protocol information. Protocol version number changed to V.2. Antiemetics and premedications added to the treatment schedule. Additional Clinical Information, Key Prescribing table and Key Administration table combined into new section titled Clinical Considerations. Drug specific information placed behind the drug name link.
27/04/2012	Protocol reviewed at Medical Oncology Reference Committee meeting. Consensus not to supersede as still clinically used. Review in one year, to update data re weekly dosing.
30/06/2013	Protocol reviewed by committee via email survey. Consensus not to supersede, review in 1 year.
04/10/2013	Indications and PBS listing updated.
09/05/2014	Protocol reviewed by email survey. No change and next review in 2 years. PHC view removed.
18/02/2016	Discussion with Medical Oncology Reference Committee Chairs and protocol to be reviewed every 5 years. Next review due in 3 years.
31/05/2017	Transferred to new eviQ website. Protocol version number changed to V.4.  Hepatitis B screening changed to NOT recommended.
10/05/2018	Haematological dose modifications updated as per consensus of the expert clinician group. Version number changed to V.5.
23/09/2019	Protocol reviewed at Medical Oncology Reference Committee meeting on 30/08/2019. No changes. Next review in 2 years.

The information contained in this protocol is based on the highest level of available evidence and consensus of the eviQ reference committee regarding their views of currently accepted approaches to treatment. Any clinician (medical oncologist, haematologist, radiation oncologist, medical physicist, radiation therapist, pharmacist or nurse) seeking to apply or consult this protocol is expected to use independent clinical judgement in the context of individual clinical circumstances to determine any patient's care or treatment. While eviQ endeavours to link to reliable sources that provide accurate information, eviQ and the Cancer Institute NSW do not endorse or accept responsibility for the accuracy, currency, reliability or correctness of the content of linked external information sources. Use is subject to eviQ's disclaimer available at [www.eviq.org.au](http://www.eviq.org.au)

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***The currency of this information is guaranteed only up until the date of printing, for any updates please check:***

<https://www.eviq.org.au/p/90>

23 Jun 2023

# Patient information - Breast cancer metastatic - nab-Paclitaxel three weekly

Patient's name:

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## Your treatment

The treatment schedule below explains how the drug for this treatment is given.


### nab-Paclitaxel

This treatment cycle is repeated every 21 days. Your doctor will advise you of the number of treatments you will have.

Day	Treatment	How it is given	How long it takes
1	nab-Paclitaxel ( <i>NAB -pak-li-TAX-el</i> )	By a drip into a vein	About 45 minutes

## When to get help

Anticancer drugs (drugs used to treat cancer) can sometimes cause serious problems. It is important to get medical help immediately if you become unwell.

 <p><b>IMMEDIATELY go to your nearest hospital Emergency Department, or contact your doctor or nurse if you have any of the following at any time:</b></p>	<b>Emergency contact details</b> Ask your doctor or nurse from your treating team who to contact if you have a problem
<ul style="list-style-type: none"><li>• a temperature of 38°C or higher</li><li>• chills, sweats, shivers or shakes</li><li>• shortness of breath</li><li>• uncontrolled vomiting or diarrhoea</li><li>• pain, tingling or discomfort in your chest or arms</li><li>• you become unwell.</li></ul>	Daytime:..... Night/weekend:..... Other instructions:..... ..... .....

**During your treatment immediately** tell the doctor or nurse looking after you if you get any of the following problems:

- leaking from the area where the drugs are being given
- pain, stinging, swelling or redness in the area where the drugs are being given or at any injection sites
- a skin rash, itching, feeling short of breath, wheezing, fever, shivers, or feeling dizzy or unwell in any way (allergic reaction).

## Other information about your treatment

### Changes to your dose or treatment delays

Sometimes a treatment may be started at a lower dose or the dose needs to be changed during treatment. There may also be times when your treatment is delayed. This can happen if your doctor thinks you are likely to have severe side effects, if you get severe side effects, if your blood counts are affected and causing delays in treatment, or if you are finding it hard to cope with the treatment. This is called a dose reduction, dose change or treatment delay. Your doctor will explain if you need any changes or delays to your treatment and the reason why.

## Blood tests and monitoring

Anti-cancer drugs can reduce the number of blood cells in your body. You will need to have regular blood tests to check that your blood cell count has returned to normal. If your blood count is low, your treatment may be delayed until it has returned to normal. Your doctor or nurse will tell you when to have these blood tests.

## Other medications given during this treatment

- **Anti-sickness (anti-nausea) medication:** you may be given some anti-sickness medication. Make sure you take this medication as your doctor or nurse tells you, even if you don't feel sick. This can help to prevent the sickness starting.

## Superseded treatments

This treatment is superseded meaning that better treatments have taken its place. Uncommonly superseded treatments are still used. Your doctor will explain why this treatment has been selected for you.

## Side effects

Cancer treatments can cause damage to normal cells in your body, which can cause side effects. Everyone gets different side effects, and some people will have more problems than others.

The table below shows some of the side effects you may get with this treatment. You are unlikely to get all of those listed and you may also get some side effects that have not been listed.

Tell your doctor or nurse about any side effects that worry you. Follow the instructions below and those given to you by your doctor or nurse.

### Immediate (onset hours to days)

#### Nausea and vomiting

- You may feel sick (nausea) or be sick (vomit).
- Take your anti-sickness medication as directed even if you don't feel sick.
- Drink plenty of fluids (unless you are fluid restricted).
- Eat small meals more frequently.
- Try food that does not require much preparation.
- Try bland foods like dry biscuits or toast.
- Gentle exercise may help with nausea.
- Ask your doctor or nurse for eviQ patient information - [Nausea and vomiting during cancer treatment](#).
- **Tell your doctor or nurse immediately, or go to the nearest hospital Emergency Department if you have uncontrolled vomiting or feel dizzy or light-headed.**

#### Taste and smell changes

- You may find that food loses its taste or tastes different.
- These changes are likely to go away with time.
- Do your mouth care regularly.
- Chew on sugar-free gum or eat sugar-free mints.
- Add flavour to your food with sauces and herbs.
- Ask your doctor or nurse for eviQ patient information - [Taste and smell changes during cancer treatment](#).

### Early (onset days to weeks)

<b>Infection risk (neutropenia)</b>	<ul style="list-style-type: none"> <li>• This treatment lowers the amount of white blood cells in your body. The type of white blood cells that help to fight infection are called neutrophils. Having low level of neutrophils is called neutropenia. If you have neutropenia, you are at greater risk of getting an infection. It also means that your body can't fight infections as well as usual. This is a serious side effect, and can be life threatening.</li> <li>• Wash your hands often.</li> <li>• Keep a thermometer at home and take your temperature regularly, and if you feel unwell.</li> <li>• Do your mouth care regularly.</li> <li>• Inspect your central line site (if you have one) daily for any redness, pus or swelling.</li> <li>• Limit contact with people who are sick.</li> <li>• Learn how to recognise the signs of infection.</li> <li>• Ask your doctor or nurse for eviQ patient information - <a href="#">Infection during cancer treatment</a>.</li> <li>• <b>Tell your doctor or nurse immediately, or go to the nearest hospital Emergency Department if you get any of the following signs or symptoms:</b> <ul style="list-style-type: none"> <li>◦ <b>a temperature of 38°C or higher</b></li> <li>◦ <b>chills, shivers, sweats or shakes</b></li> <li>◦ <b>a sore throat or cough</b></li> <li>◦ <b>uncontrolled diarrhoea</b></li> <li>◦ <b>shortness of breath</b></li> <li>◦ <b>a fast heartbeat</b></li> <li>◦ <b>become unwell even without a temperature.</b></li> </ul> </li> </ul>
<b>Low platelets (thrombocytopenia)</b>	<ul style="list-style-type: none"> <li>• This treatment lowers the amount of platelets in your blood. Platelets help your blood to clot. When they are low, you are at an increased risk of bleeding and bruising.</li> <li>• Try not to bruise or cut yourself.</li> <li>• Avoid contact sport or vigorous exercise.</li> <li>• Clear your nose by blowing gently.</li> <li>• Avoid constipation.</li> <li>• Brush your teeth with a soft toothbrush.</li> <li>• Don't take aspirin, ibuprofen or other similar anti-inflammatory medications unless your doctor tells you to.</li> <li>• Tell your doctor or nurse if you have any bruising or bleeding.</li> <li>• <b>Tell your doctor or nurse immediately, or go to your nearest hospital Emergency Department if you have any uncontrolled bleeding.</b></li> </ul>
<b>Mouth pain and soreness (mucositis)</b>	<ul style="list-style-type: none"> <li>• You may have: <ul style="list-style-type: none"> <li>◦ bleeding gums</li> <li>◦ mouth ulcers</li> <li>◦ a white coating on your tongue</li> <li>◦ pain in the mouth or throat</li> <li>◦ difficulty eating or swallowing.</li> </ul> </li> <li>• Avoid spicy, acidic or crunchy foods and very hot or cold food and drinks.</li> <li>• Try bland and soft foods.</li> <li>• Brush your teeth gently with a soft toothbrush after each meal and at bedtime. If you normally floss continue to do so.</li> <li>• Rinse your mouth after you eat and brush your teeth, using either: <ul style="list-style-type: none"> <li>◦ 1/4 teaspoon of salt in 1 cup of warm water, or</li> <li>◦ 1/4 teaspoon of bicarbonate of soda in 1 cup of warm water</li> </ul> </li> <li>• Ask your doctor or nurse for eviQ patient information - <a href="#">Mouth problems during cancer treatment</a>.</li> <li>• <b>Tell your doctor or nurse if you get any of the symptoms listed above.</b></li> </ul>

<b>Diarrhoea</b>	<ul style="list-style-type: none"> <li>• You may get bowel motions (stools, poo) that are more frequent or more liquid.</li> <li>• You may also get bloating, cramping or pain.</li> <li>• Take your anti-diarrhoeal medication as directed by your doctor.</li> <li>• Drink plenty of fluids (unless you are fluid restricted).</li> <li>• Eat and drink small amounts more often.</li> <li>• Avoid spicy foods, dairy products, high fibre foods, and coffee.</li> <li>• Ask your doctor or nurse for eviQ patient information - <a href="#">Diarrhoea during cancer treatment</a>.</li> <li>• <b>Tell your doctor or nurse immediately, or go to your nearest hospital Emergency Department if your diarrhoea is not controlled, you have 4 or more loose bowel motions per day, and if you feel dizzy or light-headed.</b></li> </ul>
<b>Eye problems</b>	<ul style="list-style-type: none"> <li>• You may get: <ul style="list-style-type: none"> <li>◦ eye pain</li> <li>◦ red, sore or swollen eyes</li> <li>◦ blurred vision</li> <li>◦ watery or gritty eyes</li> <li>◦ changes in your eyesight</li> <li>◦ sensitivity to sunlight.</li> </ul> </li> <li>• Protect your eyes from the weather (sun and wind) by wearing sunglasses, especially if you have lost your eyelashes.</li> <li>• <b>Tell your doctor or nurse if you get any of the symptoms listed above. Eye drops may help with your symptoms.</b></li> </ul>
<b>Joint and muscle pain and stiffness</b>	<ul style="list-style-type: none"> <li>• You may get muscle, joint or general body pain and stiffness.</li> <li>• Applying a heat pack to affected areas may help.</li> <li>• Talk to your doctor or nurse about other ways to manage these symptoms. You may need medication to help with any pain.</li> </ul>
<b>Nerve damage (peripheral neuropathy)</b>	<ul style="list-style-type: none"> <li>• You may notice a change in the sensations in your hands and feet, including: <ul style="list-style-type: none"> <li>◦ tingling or pins and needles</li> <li>◦ numbness or loss of feeling</li> <li>◦ pain.</li> </ul> </li> <li>• You may find it difficult to do everyday activities, such as doing up buttons or picking up small objects.</li> <li>• Test water temperature with your elbow when bathing to avoid burns.</li> <li>• Use rubber gloves, pot holders and oven mitts in the kitchen.</li> <li>• Wear rubber shoes or boots when working in the garden or garage.</li> <li>• Keep rooms well lit and uncluttered.</li> <li>• Ask your doctor or nurse for eviQ patient information – <a href="#">Nerve problems during cancer treatment</a>.</li> <li>• Tell your doctor or nurse if you get any of the symptoms listed above.</li> </ul>
<b>Tiredness and lack of energy (fatigue)</b>	<ul style="list-style-type: none"> <li>• You may feel very tired, have no energy, sleep a lot, and not be able to do normal activities or things you enjoy.</li> <li>• Do not drive or operate machinery if you are feeling tired.</li> <li>• Nap for short periods (only 1 hour at a time)</li> <li>• Prioritise your tasks to ensure the best use of your energy.</li> <li>• Eat a well balanced diet and drink plenty of fluids (unless you are fluid restricted).</li> <li>• Try some gentle exercise daily.</li> <li>• Allow your friends and family to help.</li> <li>• <b>Tell your doctor or nurse if you get any of the symptoms listed above.</b></li> </ul>
<b>Skin rash</b>	<ul style="list-style-type: none"> <li>• You may get a red, bumpy rash and dry, itchy skin.</li> <li>• Moisturise your skin with a gentle non-perfumed moisturising cream like sorbolene or aqueous cream.</li> <li>• Do not scratch your skin.</li> <li>• Protect your skin from the sun by wearing sun-protective clothing, a wide-brimmed hat, sunglasses and sunscreen of SPF 50 or higher.</li> <li>• <b>Talk to your doctor or nurse about other ways to manage your skin rash.</b></li> </ul>

Late (onset weeks to months)	
<b>Low red blood cells (anaemia)</b>	<ul style="list-style-type: none"> <li>You may feel dizzy, light-headed, tired and appear more pale than usual.</li> <li>Tell your doctor or nurse if you have any of these signs or symptoms. You might need a blood transfusion.</li> <li><b>Tell your doctor or nurse immediately, or go to the nearest hospital Emergency Department if you have any chest pain, trouble breathing, or feel like your heart is racing.</b></li> </ul>
<b>Hair loss (alopecia)</b>	<ul style="list-style-type: none"> <li>Your hair may start to fall out from your head and body.</li> <li>Hair loss usually starts 2 to 3 weeks after your first treatment.</li> <li>You may become completely bald and your scalp might feel tender.</li> <li>Use a gentle shampoo and a soft brush.</li> <li>Take care with hair products like hairspray, hair dye, bleaches and perms.</li> <li>Protect your scalp from the cold with a hat, scarf or wig.</li> <li>Protect your scalp from the sun with a hat or sunscreen of SPF 50 or higher.</li> <li>Moisturise your scalp to prevent itching.</li> <li>Ask your doctor or nurse about the <a href="#">Look Good Feel Better</a> program</li> </ul>
<b>Nail changes</b>	<ul style="list-style-type: none"> <li>Your nails may: <ul style="list-style-type: none"> <li>grow more slowly</li> <li>become darker</li> <li>develop ridges or white lines</li> <li>become brittle and flaky</li> </ul> </li> <li>In some cases, you may lose your nails completely.</li> <li>Keep your nails clean and short.</li> <li>Avoid things like biting your fingernails, getting a manicure, pedicure or false nails.</li> <li>Wear gloves when you wash the dishes, work in the garden, or clean the house.</li> </ul>

Delayed (onset months to years)	
<b>Menopausal symptoms</b>	<ul style="list-style-type: none"> <li>You may get: <ul style="list-style-type: none"> <li>hot flushes or night sweats</li> <li>mood changes</li> <li>vaginal dryness</li> <li>irregular or no periods.</li> </ul> </li> <li>You may also: <ul style="list-style-type: none"> <li>have trouble sleeping</li> <li>find sex painful or lose interest in sex</li> </ul> </li> <li>These symptoms may go away after treatment, or the menopause may be permanent.</li> <li>If you have sex you should use contraception as there is still a risk of pregnancy. Talk to your doctor about what form of contraception is right for you.</li> <li>Talk to your doctor or nurse about ways to manage these symptoms.</li> </ul>

## General advice for people having cancer treatment

### Chemotherapy safety

- Learn how to keep you and your family safe while you are having anticancer drugs.
- See our patient information sheet - [Chemotherapy safety at home](#).

### Blood clot risk

- Cancer and anticancer drugs can increase the risk of a blood clot (thrombosis).
- Tell your doctor if you have a family history of blood clots.
- A blood clot can cause pain, redness, swelling in your arms or legs, shortness of breath or chest pain.
- If you have any of these symptoms go to your nearest hospital Emergency Department.

## Medications and vaccinations

- Before you start treatment, tell your doctor about any medications you are taking, including vitamins or herbal supplements.
- Don't stop or start any medications during treatment without talking to your doctor and pharmacist first.
- Paracetamol is safe to take if you have a headache or other mild aches and pains. It is recommended that you avoid taking aspirin, ibuprofen and other anti-inflammatory type medications for pain while you are having treatment. However, if these medications have been prescribed by your doctor, do not stop taking them without speaking with your doctor.
- Vaccinations such as flu and tetanus vaccines are safe to receive while having treatment. Do not have any live vaccines during your treatment or for 6 months after it finishes. If you are unsure, check with your doctor before you have any vaccinations.
- People you live with should be fully vaccinated, including having live vaccines according to the current vaccination schedule. Extra care needs to be taken with hand washing and careful disposal of soiled nappies for infants who have recently received the rotavirus vaccine.

## Other medical and dental treatment

- If you go to hospital or any other medical appointment (including dental appointments), always tell the person treating you that you are receiving anticancer drugs.
- Before you have any dental treatment, talk to your doctor.

## Diet

- While you are receiving this treatment it is important that you try to maintain a healthy diet.
- Grapefruit and grapefruit juice can interact with your medication and should be avoided while you are on this treatment.
- Speak to your doctor or nurse about whether drinking alcohol is safe with your treatment.
- If you have any concerns about recent weight loss or weight gain or questions about your diet, ask to speak to a dietitian.

## Fertility

- Some cancer treatments can reduce your fertility. This can make it difficult or impossible to get pregnant or father a child.
- Talk to your doctor or nurse before you start any treatment. Depending on your situation there may be fertility sparing options available to you and/or your partner, discuss these with your doctor or nurse.

## Pregnancy and breastfeeding

- Some cancer treatments can be dangerous to unborn babies. Talk to your doctor or nurse if you think there is any chance that you could be pregnant.
- Do not try to get pregnant or father a child during this treatment. Contraception should be used during treatment and after stopping treatment. Ask your doctor or nurse about what type of contraception you should use.
- If you are planning pregnancy/fatherhood after completing this treatment, talk to your doctor. Some doctors advise waiting between 6 months and 2 years after treatment.
- Do not breastfeed if you are on this treatment, as anti-cancer medications can also pass into breast milk.

## Sex life and sexuality

- The desire to have sex may decrease as a result of this treatment or its side effects.
- Your emotions and the way you feel about yourself may also be affected by this treatment.
- It may help to discuss your concerns with your partner and doctor or nurse.

## Quitting smoking

- It is never too late to quit smoking. Quitting smoking is one of the best things you can do to help your treatment work better.
- There are many effective tools to improve your chances of quitting.
- Talk to your treating team for more information and referral to a smoking cessation support service.

## Staying active

- Research shows that exercise, no matter how small, has many benefits for people during and after cancer treatment.
- Talk to your doctor before starting an exercise program. Your doctor can advise whether you need a modified exercise program.

For more information about cancer treatment, side effects and side effect management see our [Patient and carers section](#).

## Where to get more information

### Telephone support



- Call Cancer Council on 13 11 20 for cancer information and support.

**Breast cancer information**

- Australasian Lymphology Association – [lymphoedema.org.au](http://lymphoedema.org.au)
- Australasian Menopause Society – [menopause.org.au](http://menopause.org.au)
- Breast Cancer Network Australia – [bcna.org.au](http://bcna.org.au)
- National Breast Cancer Foundation – [nbcf.org.au](http://nbcf.org.au)
- YWCA Encore breast cancer exercise program – [ywcaencore.org.au](http://ywcaencore.org.au)

**General cancer information and support**

- Australian Rare Cancer (ARC) Portal – [arcportal.org.au/](http://arcportal.org.au/)
- Beyondblue – [beyondblue.org.au](http://beyondblue.org.au)
- Cancer Australia – [canceraustralia.gov.au](http://canceraustralia.gov.au)
- Cancer Council Australia – [cancer.org.au](http://cancer.org.au)
- Cancer Voices Australia – [cancervoicesaustralia.org](http://cancervoicesaustralia.org)
- CanTeen – [canteen.org.au](http://canteen.org.au)
- Carers Australia – [carersaustralia.com.au](http://carersaustralia.com.au)
- CHILL Cancer related hair loss – [scalpcooling.org](http://scalpcooling.org)
- eviQ Cancer Treatments Online – [eviQ.org.au](http://eviQ.org.au)
- LGBTQI+ People and Cancer - [cancercouncil.com.au/cancer-information/lgbtqi](http://cancercouncil.com.au/cancer-information/lgbtqi)
- Look Good Feel Better – [lgfb.org.au](http://lgfb.org.au)
- Patient Information – [patients.cancer.nsw.gov.au](http://patients.cancer.nsw.gov.au)
- Radiation Oncology Targeting Cancer – [targetingcancer.com.au](http://targetingcancer.com.au)
- Redkite – [redkite.org.au](http://redkite.org.au)
- Return Unwanted Medicines – [returnmed.com.au](http://returnmed.com.au)
- Staying active during cancer treatment – [patients.cancer.nsw.gov.au/coping-with-cancer/physical-wellbeing/staying-active](http://patients.cancer.nsw.gov.au/coping-with-cancer/physical-wellbeing/staying-active)

**Quit smoking information and support**

Quitting smoking is helpful even after you have been diagnosed with cancer. The following resources provide useful information and support to help you quit smoking. Talk to your treating team about any other questions you may have.

- Call Quitline on 13 QUIT (13 78 48)
- iCanQuit – [iCanQuit.com.au](http://iCanQuit.com.au)
- Patient Information – [patients.cancer.nsw.gov.au/coping-with-cancer/physical-wellbeing/quitting-smoking](http://patients.cancer.nsw.gov.au/coping-with-cancer/physical-wellbeing/quitting-smoking)
- Quitnow – [quitnow.gov.au](http://quitnow.gov.au)

**Additional notes:**

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This document is a guide only and cannot cover every possible situation. The health professionals caring for you should always consider your individual situation when making decisions about your care. Contact your cancer clinic staff or doctor if you have any questions or concerns about your treatment, or you are having problems coping with side effects. While eviQ endeavours to link to reliable sources that provide accurate information, eviQ and the Cancer Institute NSW do not endorse or accept responsibility for the accuracy, currency, reliability or correctness of the content of linked external information sources. Use of this document is subject to eviQ's disclaimer available at [www.eviq.org.au](http://www.eviq.org.au)

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