nerlynx®
(neratinib)

PHYSICIAN TOOL
HOW TO USE NERLYNX®

A therapy management tool to help support your patients receiving NERLYNX® (neratinib)

NERLYNX® is indicated for the extended adjuvant treatment of adult patients with early-stage hormone receptor positive HER2-overexpressed/amplified breast cancer and who completed adjuvant trastuzumab based therapy less than one year ago.[1]

You can help by reporting any side effects you may experience via your national reporting system and/or to the Pharmacovigilance department of Pierre Fabre laboratories (www.pierre-fabre.com/en/pharmacovigilance).
This medicinal product is subject to risk minimisation measures.

This material is based on EU Product Information and does not replace the SmPC and the RMP Educational Materials. Please refer to the material approved in your country.

Pierre Fabre

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References:

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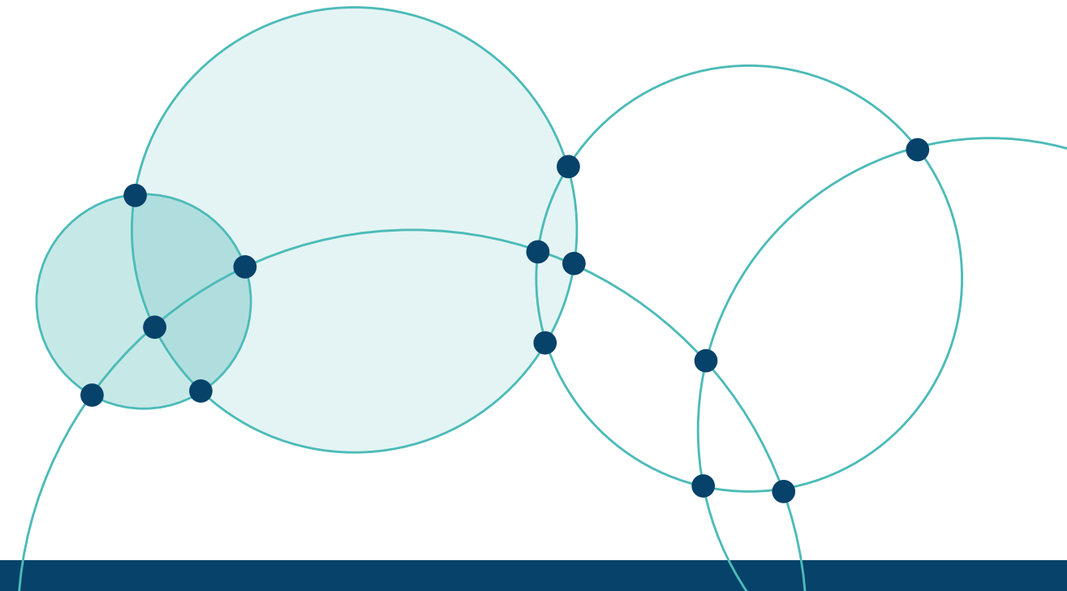


1 ABOUT NERLYNX®

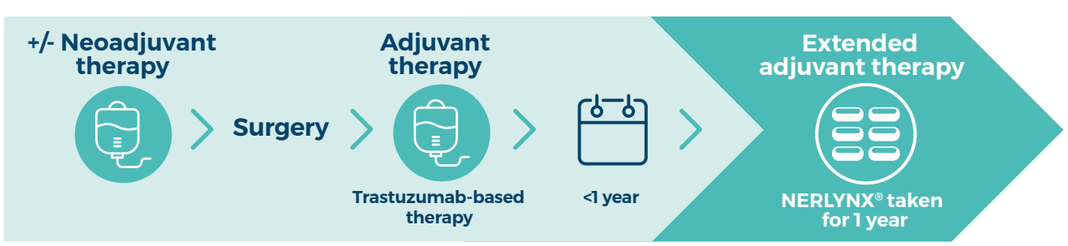
1.1 What is NERLYNX®?

For nearly 20 years, patients with HER2+ early breast cancer have benefited from the addition of trastuzumab-based therapy to chemotherapy.[2,3] However, up to 31% face a recurrence within 10 years after treatment.[3,4] Is there more that can be done to further reduce the risk of recurrence for HER2+/HR+ breast cancer after adjuvant trastuzumab-based therapy?

NERLYNX® is indicated for the extended adjuvant treatment of adult patients with early-stage hormone receptor positive HER2-overexpressed/amplified breast cancer and who completed adjuvant trastuzumab-based therapy less than one year ago.[1]

Following adjuvant trastuzumab-based therapy, NERLYNX®, as extended adjuvant therapy, offers an additional step in the treatment of HER2+/HR+ breast cancer.[1,5,6]

Introducing NERLYNX® as extended adjuvant therapy

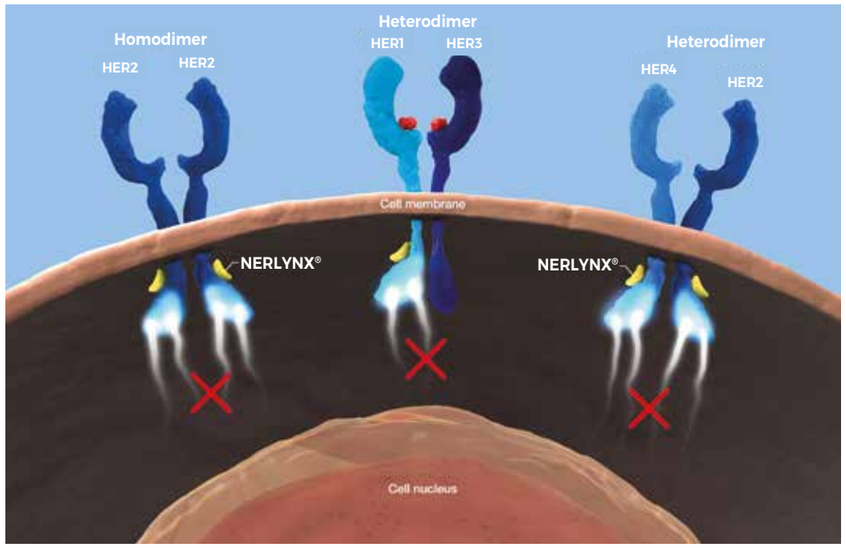


1.2 How does NERLYNX® work?

NERLYNX® is a tyrosine kinase inhibitor (TKI) that penetrates the cell membrane to target the intracellular domain of the HER receptors, HER1, HER2 and HER4.[7,8]

As a targeted therapy, NERLYNX® limits damage to healthy cells, as its activity is focused on the receptors involved in HER2+ breast cancer.[7,8]

NERLYNX® irreversibly binds to the tyrosine kinase domains of HER receptors, resulting in pan-HER signalling inhibition. The sustained inhibition of the HER2 downstream signalling inhibits tumour cell proliferation and increases cell death.[7–11]



2 NERLYNX® ADMINISTRATION

2.1 General population

NERLYNX® should be initiated within 1 year after completion of adjuvant trastuzumab-based therapy.[1]

NERLYNX® does not require any special temperature storage conditions.[1]

NERLYNX® should be taken with food, preferably in the morning every day, continuously for 1 year.[1]

If a dose of NERLYNX® is missed or vomited, inform patients that the missed dose should not be replaced and to resume NERLYNX® with the next scheduled daily dose.[1]

Tablets should not be chewed, crushed, dissolved or split prior to swallowing.[1]

Grapefruit or pomegranate juice may inhibit CYP3A4 and/or P-gp and should be avoided during treatment with NERLYNX®.[1]

2.2 Specific populations

Dose adjustments

Elderly[1]

- No dose adjustment is required.
- There is no data in patients ≥85 years of age.

Renal impairment[1]

- No dose adjustment is required for patients with mild to moderate renal impairment.
- NERLYNX® has not been studied in patients with severe renal impairment (eGFR ≤29 mL/min/1.73 m²) including patients on dialysis. Treatment is not recommended.

Hepatic impairment[1]

- No dose adjustment is required for patients with Child-Pugh A or B (mild to moderate).

Child-Pugh score[12]

Variable	Points		
	1	2	3
Hepatic encephalopathy	None	Stage I-II	Stage III-IV
Acites	Absent	Controlled	Refractory
Bilirubin (mg/dL)	<2	2-3	>3
Albumin (g/L)	>35	28-35	<28
Prothrombin time (seconds)	<4	4-6	>6

Prognostic sub-group[12]

Sum of points	5-6	7-9	10-15
Class	A (mild)	B (moderate)	C (severe)

Pregnancy, lactation & contraception[1]

There are no data from the use of NERLYNX® in pregnant women, therefore, NERLYNX® should not be used during pregnancy. Women of child-bearing potential must use highly effective contraceptive measures while taking NERLYNX® and for 1 month after stopping treatment.[1]

It is not known whether NERLYNX® is excreted in human milk. A risk to the breast-fed infant cannot be excluded. A decision must be made whether to discontinue breast-feeding or NERLYNX®.[1]

eGFR, estimated glomerular filtration rate.

3 ADVERSE REACTION MANAGEMENT[1]

3.1 Adverse reactions[1]

System organ class	Adverse reaction	All grades (%)	≥ Grade 3† (%)
General disorders	Fatigue	27.3	-
Metabolic and nutritional disorders	Decreased appetite	13.7	-
Hepatobiliary disorders	ALT increase	8.5	1.3
	AST increase	7.4	0.7
Gastrointestinal disorders	Diarrhoea	93.6	37.1
	Nausea	42.5	-
	Abdominal pain*	35.9	-
	Vomiting	26.8	3.5
	Stomatitis	11.2	-
Skin and subcutaneous tissue disorders	Rash	15.4	0.4
	Nail disorders	7.8	0.2
Musculoskeletal and connective tissue disorders	Muscle spasms	10.0	-

Table adapted from NERLYNX® SmPC.
ALT, alanine aminotransferase; AST, aspartate aminotransferase.
*Includes abdominal pain and abdominal pain upper.
†Incidence of grade ≥ 3 is only reported for the most common adverse reactions and selected adverse reactions according to NERLYNX® SmPC.

3.2 Recommended dose adjustments for adverse reaction management

Management of some adverse reactions may require dose interruption and/or dose reduction. Adjusting daily dose can improve tolerability and adherence.[1]

Recommended Starting Dose	1st Dose Reduction	2nd Dose Reduction	3rd Dose Reduction
6 Tablets (6 × 40 mg)	5 Tablets (5 × 40 mg)	4 Tablets (4 × 40 mg)	3 Tablets (3 × 40 mg)
Once Daily Dose **240 mg**	Once Daily Dose **200 mg**	Once Daily Dose **160 mg**	Once Daily Dose **120 mg**

Management according to the severity of adverse reactions and based on patient individual safety and tolerability[1]

General adverse reactions[1]
(See pages 8 and 10 for specific management of diarrhoea and hepatotoxicity.)

- **Grade 2** if the patient cannot tolerate → **REDUCE** NERLYNX® treatment dose → Patients unable to tolerate 120 mg daily → **PERMANENTLY DISCONTINUE** NERLYNX® treatment
- **Grade 3** → **INTERRUPT** NERLYNX® treatment
  - Recovery to Grade ≤ 1 or baseline within 3 weeks → **RESUME** NERLYNX® at the next lower dose level
  - Fail to recover within 3 weeks → **PERMANENTLY DISCONTINUE** NERLYNX® treatment
- **Grade 4**
- **Toxicities that result in a treatment delay >3 weeks**
- **Patients that are unable to tolerate 120 mg daily** → **PERMANENTLY DISCONTINUE** NERLYNX® treatment

4.1 Anti-diarrhoeal prophylaxis while on NERLYNX®[1]

Start your patients on anti-diarrhoeal prophylaxis with the first dose of NERLYNX® and continue for the first 1-2 months of NERLYNX® therapy to decrease the severity, incidence and duration of diarrhoea.[1]

Diarrhoea management

nerlynx® (neratinib) **240 mg** (or as prescribed) (six 40 mg tablets) **1 x daily for 1 year**

MONTHS 1-2 12

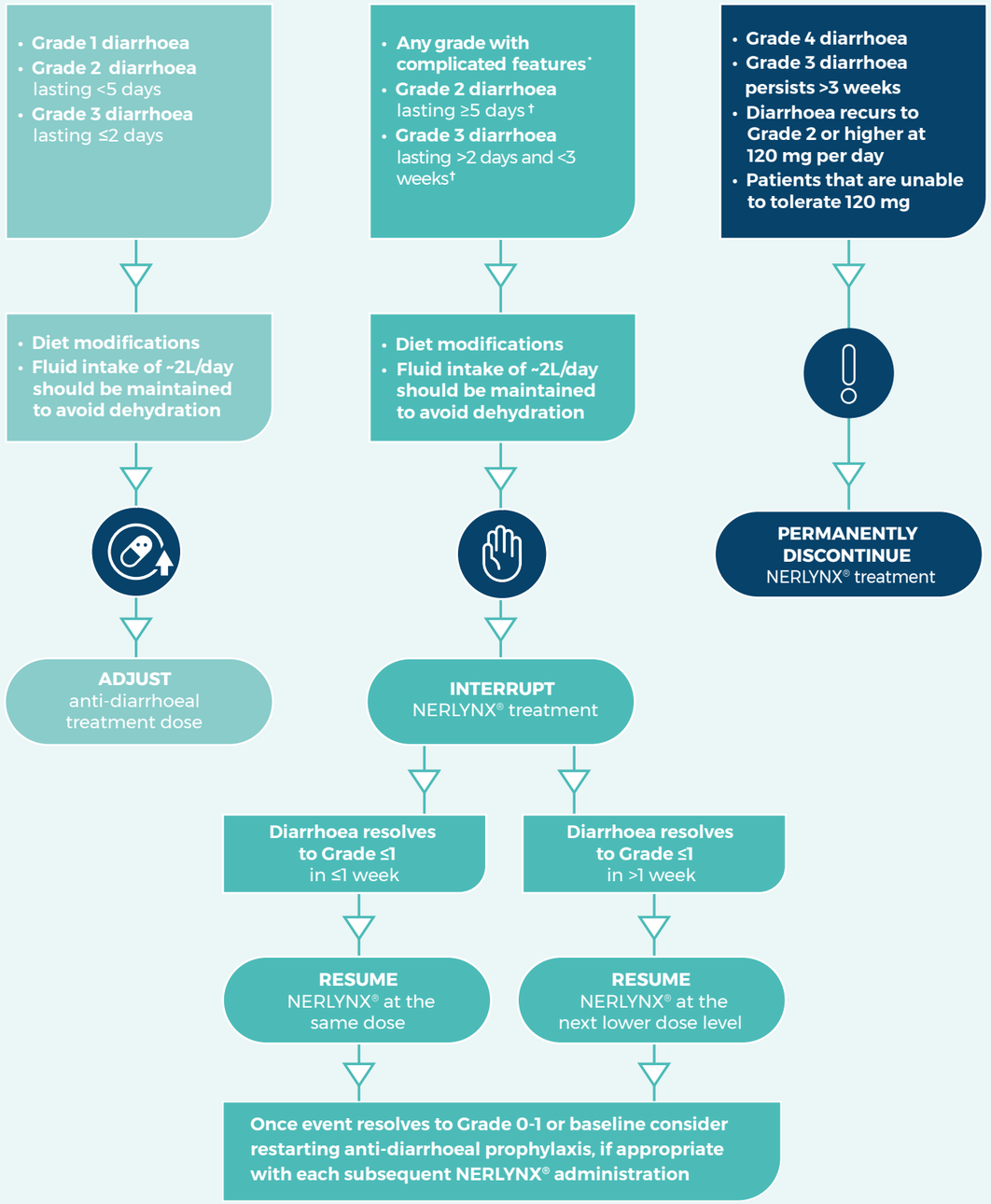
- Anti-diarrhoeal treatment at regular dosing
- Adjust anti-diarrhoeal treatment if diarrhoea occurs
- Dietary changes to minimise diarrhoea

4.2 Management according to the severity of diarrhoea[14]

The overall management of diarrhoea is based upon its grade as measured by the National Cancer Institute (NCI) Common Terminology Criteria for Adverse Events (CTCAE).[14]

NCI CTCAE: Grading for diarrhoea[14]		
Grade 1	**Increase of <4 stools per day over baseline** Mild increase in ostomy output compared to baseline	
Grade 2	**Increase of 4-6 stools per day over baseline** Moderate increase in ostomy output compared to baseline	
Grade 3	**Increase of ≥7 stools per day over baseline** Incontinence; hospitalisation indicated; severe increase in ostomy output compared to baseline; limiting self-care activities of daily living (ADL)	
Grade 4	**Life-threatening consequences** intervention indicated	Urgent

Dose adjustements according to the severity of diarrhoea and based on patient individual safety and tolerability[1]



*Complicated features include dehydration, fever, hypotension, renal failure, or Grade 3 or 4 neutropenia.
†Despite being treated with optimal medical therapy.

4.3 Helpful advice

Dietary changes in the setting of diarrhoea

Patients should be instructed to adapt their diet in order to minimise diarrhoea. Consider these options to help your patients manage diarrhoea:[15,16]

Things to do:

Eat small, frequent meals

Drink more clear liquids

Try to drink ~2L of clear fluids per day. These include water, sports drinks, broth, weak decaffeinated tea, caffeine-free soft drinks, clear juices, and gelatin.

Choose foods that are easy to digest (low-residue diet)

These include bananas, rice, applesauce and toast.

Things to avoid:

Medicines such as laxatives or stool softeners

Caffeine, alcohol, dairy, fat, fibre, orange juice, grapefruit juice, pomegranate juice, prune juice, and spicy foods

Support materials

There are numbers of materials available for you and your patients to help support them throughout their treatment with NERLYNX®:

EDUCATIONAL MATERIALS FOR DIARRHOEA MANAGEMENT

- **EDUCATIONAL MATERIAL: GUIDE FOR HEALTHCARE PROFESSIONALS ON** DIARRHOEA MANAGEMENT
- **PATIENT/CARER TREATMENT GUIDE -** HOW TO MANAGE DIARRHOEA WITH NERLYNX®
- **THE PATIENT TREATMENT JOURNAL**

You can contact your Pierre Fabre local representative or our medical information to get these educational materials, which are specific to each country.

5 MANAGEMENT OF HEPATOTOXICITY[1]

Hepatotoxicity has been reported in patients treated with NERLYNX®. Liver function tests including alanine aminotransferase (ALT), aspartate aminotransferase (AST), and total bilirubin should be monitored at 1 week, then monthly for the first 3 months and every 6 weeks thereafter while on treatment or as clinically indicated.[1]

Dose modifications for hepatotoxicity[1]

Severity of hepatotoxicity*	Action
• Grade 3 ALT (>5-20 x ULN) OR • Grade 3 bilirubin (>3-10 x ULN)	• Stop NERLYNX® until recovery to Grade ≤1 • Evaluate alternative causes • Resume NERLYNX® at the next lowest level if recovery to Grade ≤1 occurs within 3 weeks. If Grade 3 ALT or bilirubin occurs again despite one dose reduction, permanently discontinue NERLYNX® • If Grade 3 hepatotoxicity persists longer than 3 weeks, discontinue NERLYNX® permanently
• Grade 4 ALT (>20 x ULN) OR • Grade 4 bilirubin (>10 x ULN)	• Permanently discontinue NERLYNX® • Evaluate alternative causes

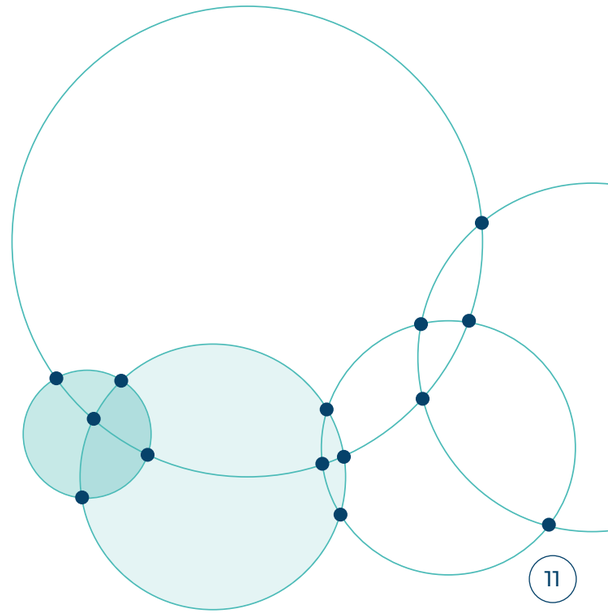
ULN, Upper Limit Normal; ALT, Alanine Aminotransferase.
*Per CTCAE v4.0

6 CONTRAINDICATIONS[1]

- Hypersensitivity to the active substance or to any of the excipients: mannitol (E421), microcrystalline cellulose, crospovidone, povidone, colloidal anhydrous silica, magnesium stearate, polyvinyl alcohol, titanium dioxide (E171), macrogrol, talc and/or iron oxide red (E172).
- Severe hepatic impairment (Child-Pugh C).

Other medicines

Contraindicated	Examples
Co-administration with strong inducers of the CYP3A4/Pgp isoform of cytochrome P450	• carbamazepine, phenytoin (antiepileptics) • St John's wort (*Hypericum perforatum*) (herbal product) • rifampicin (antimycobacterial)



7 INTERACTIONS[1]

Medications	Considerations	Examples
Proton pump inhibitors, H2-receptor antagonists and antacids	Co-administration with proton pump inhibitors (PPIs) is not recommended. If H2-receptor antagonists are used: NERLYNX® should be taken at least 2 hours before or 10 hours after the intake of the H2-receptor antagonist. If antacids are taken: separate the dosing of NERLYNX® and the antacid by at least 3 hours.	omeprazole, lansoprazole, dexpansoprazole, rabeprazole, pantoprazole; nizatidine, famotidine, cimetidine or ranitidine
Strong or moderate CYP3A4/P-gp inhibitors	Concomitant treatment is not recommended due to risk of increased exposure to NERLYNX®. If the inhibitor cannot be avoided, reduce NERLYNX® dose.	atazanavir, indinavir, nefazodone, nelfinavir, ritonavir, saquinavir, ketoconazole, itraconazole, clarithromycin, telithromycin, and voriconazole, grapefruit/ pomegranate or grapefruit/ pomegranate products
Moderate CYP3A4/P-gp inducers	Concurrent use of NERLYNX® with moderate CYP3A4/P-gp is not recommended as it may lead to loss of efficacy.	bosentan, efavirenz, etravirine, phenobarbital, primidone or dexamethasone
Strong CYP3A4/P-gp inducers	Concurrent use with NERLYNX® is contraindicated.	phenytoin, carbamazepine, rifampicin, or herbal preparations containing St John's Wort *(Hypericum perforatum)*
Breast cancer resistance protein efflux transporters	NERLYNX® may inhibit breast cancer resistance protein (BCRP) intestinal level as suggested by in vitro studies. Clinical studies with BCRP substrates have not been conducted. Patients who are treated with BCRP substrates should be monitored carefully.	rosuvastatin, sulfasalazine or irinotecan
P-glycoprotein efflux transporters	In in-vitro studies, NERLYNX® is an inhibitor of P-glycoprotein (P-gp) efflux transporters. This might be clinically relevant for patients who are treated concomitantly with therapeutic agents with a narrow therapeutic window whose absorption involves P-gp transporters in the gastrointestinal tract. These patients should be carefully monitored.	digoxin, colchicine, dabigatran, phenytoin, statins, cyclosporine, everolimus, sirolimus or tacrolimus

8 PATIENT DIALOGUE IS KEY[17]

By integrating NERLYNX® into your patients' treatment plan from the start, and explaining the importance of adherence, you can help your patients adhere to their treatment and reduce their risk of recurrence.

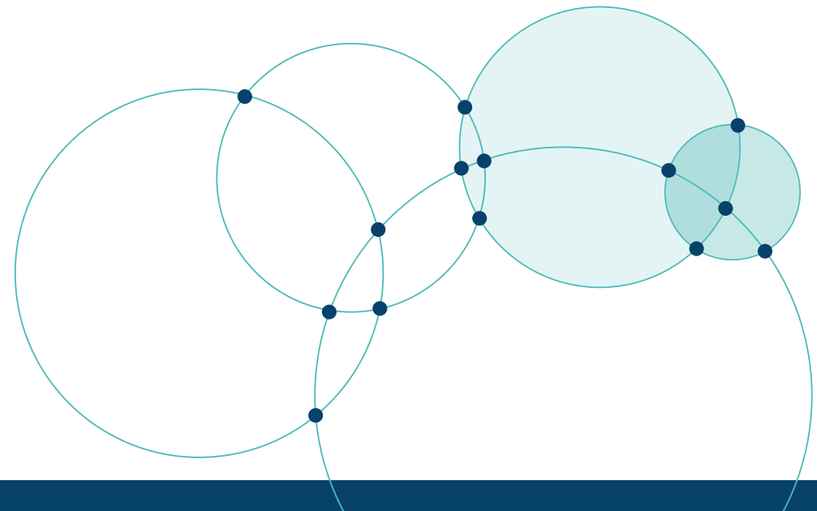
Your support helps patients to be:[17]

More informed

More prepared

More supported

Make sure that you provide your patients with the Risk Management Plan (RMP) Educational Materials to help them to understand more about their treatment and how to be aware of, and minimise the risk of adverse events.



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REPORTING OF SUSPECTED ADVERSE REACTIONS

Reporting suspected adverse reactions after authorisation of the medicinal product is important. It allows continued monitoring of the benefit/risk balance of the medicinal product. Healthcare professionals are requested to report any suspected adverse reactions via the national reporting system (Appendix V - European Medicines Agency - Europa EU) and/or to the Pharmacovigilance department of Pierre Fabre laboratories (www.pierre-fabre.com/en/pharmacovigilance)

For complete information, please refer to : NERLYNX®
Summary of Product Characteristics
https://www.ema.europa.eu/en/documents/product-information/nerlynx-epar-product-information_en.pdf

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