

# Fingolimod prescriber's checklist

## Important points to remember before, during and after treatment

Healthcare professionals are asked to report any suspected adverse reactions.

Suspected Adverse Drug Reactions should be reported either to the Medicines Authority or to Tillomed.

Suspected Adverse Drug Reactions (side effects) or medication errors may be reported using the Medicines Authority ADR reporting form, which is available online at <http://www.medicinesauthority.gov.mt/adrportal>, and sent by post or email to; P: Pharmacovigilance Section at Post-Licensing Directorate, Medicines Authority, Sir Temi Żammit Buildings, Malta Life Sciences Park, San Ġwann SĠN 3000 E: [postlicensing.medicinesauthority@gov.mt](mailto:postlicensing.medicinesauthority@gov.mt)

When reporting, please provide as much information as possible. By reporting side effects, you can help provide more information on the safety of this medicine.

Adverse events should also be reported to Tillomed at +44 (0)1480 402 400 or email id [PVUK@tillomed.com](mailto:PVUK@tillomed.com)

If you have a question about the product, please contact Tillomed Medical information department at +44 (0)1480 402 400 or by email [medical.information@tillomed.com](mailto:medical.information@tillomed.com).

# Considerations in Fingolimod patient selection

Fingolimod is suitable for adult and paediatric patients ( $\geq 10$  years old) for the treatment of highly active relapsing remitting multiple sclerosis (RRMS)\*. While many patients may be suitable for treatment, the following section highlights patients in whom Fingolimod is contraindicated or not recommended.

## Considerations for treatment initiation

Fingolimod causes transient heart rate reduction and may cause atrioventricular (AV) conduction delays following initiation of treatment. All patients should be monitored for a minimum of 6 hours on treatment initiation. Below is a brief overview of monitoring requirements. Refer to page 5 for more information.

## Contraindications

Known immunodeficiency syndrome, patients with increased risk for opportunistic infections (including immunocompromised patients), severe active infections, active chronic infections, known active malignancies, severe liver impairment, severe cardiac arrhythmias requiring anti-arrhythmic treatment with Class Ia or Class III anti-arrhythmic drugs, patients with second-degree Mobitz type II AV block or third-degree AV block, or sick-sinus syndrome (if they do not wear a pacemaker), patients with a baseline QTc interval of  $\geq 500$  msec, patients who in the previous 6 months had myocardial infarction, unstable angina, stroke/transient ischemic attack, decompensated heart failure, or New York Heart Association class III/IV heart failure, pregnant women, women of child-bearing potential (WOCBP; including adolescents) not using effective contraception and patients with hypersensitivity to the active substance or to any of the excipients.

<b>Not recommended</b>	
Consider only after performing risk/benefit analysis and consulting a cardiologist	
Sino-atrial heart block, history of symptomatic bradycardia or recurrent syncope, significant QT-interval prolongation †, history of cardiac arrest, uncontrolled hypertension or severe sleep apnoea.	<ul style="list-style-type: none"><li>• <b>At least overnight extended monitoring is recommended</b></li><li>• <b>Consult cardiologist regarding appropriate first-dose monitoring</b></li></ul>
Taking beta-blockers, heart-rate-lowering calcium channel blockers ‡, or other substances that are known to lower the heart rate. §	<ul style="list-style-type: none"><li>• <b>Consult cardiologist regarding possibility of switching to non-heart-rate-lowering drugs</b></li><li>• <b>If change in medication is not possible, extend monitoring to at least overnight</b></li></ul>

\*Fingolimod is indicated as single disease modifying therapy in highly active relapsing remitting multiple sclerosis for the following groups of adult patients and paediatric patients aged 10 years and older: patients with highly active disease despite a full and adequate course of treatment with at least one disease modifying therapy, or patients with rapidly evolving severe relapsing remitting multiple sclerosis defined by 2 or more disabling relapses in one year, and with 1 or more Gadolinium enhancing lesions on brain MRI or a significant increase in T2 lesion load as compared to a previous recent MRI.

†QTc >470 msec (adult females), >460 msec (paediatric females), or >450 msec (adult and paediatric males).

‡Includes verapamil or diltiazem.

§Includes ivabradine, digoxin, anticholinesterase agents, or pilocarpine

# Recommended Steps to Managing Patients on Fingolimod

The checklist and schematic that follow are intended to assist in the management of patients on Fingolimod. Key steps and considerations while starting, continuing, or discontinuing treatment are provided.

Patient's Name: ..... Date of birth: ..... Consultant: ..... Hospital number:.....
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<b>Prior to initiating treatment</b>	
<input type="checkbox"/>	Treatment with Fingolimod is not recommended in the following patients, unless anticipated benefits outweigh the potential risks: <ul style="list-style-type: none"> <li>• Those with sino-atrial heart block, history of symptomatic bradycardia or recurrent syncope, significant QT-interval prolongation*, history of cardiac arrest, uncontrolled hypertension or severe sleep apnoea.               <ul style="list-style-type: none"> <li><input type="checkbox"/> Seek advice from a cardiologist regarding the most appropriate monitoring at treatment initiation; at least overnight extended monitoring is recommended</li> </ul> </li> <li>• Those receiving concurrent therapy with beta-blockers, heart-rate-lowering calcium channel blockers (e.g., verapamil or diltiazem,), or other substances which may decrease heart rate (e.g., ivabradine, digoxin, anticholinesterase agents, or pilocarpine)               <ul style="list-style-type: none"> <li><input type="checkbox"/> Seek advice from a cardiologist regarding a switch to non-heart-rate-lowering medicinal products prior to initiation of treatment</li> <li><input type="checkbox"/> If heart-rate-lowering medication cannot be stopped, seek advice from a cardiologist regarding the most appropriate monitoring at treatment initiation; at least overnight extended monitoring is recommended</li> </ul> </li> </ul>
<input type="checkbox"/>	For paediatric patients, assess Tanner staging, measure height and weight, and consider a complete vaccination schedule as per standard of care
<input type="checkbox"/>	Ensure patients are not concomitantly taking Class Ia or Class III antiarrhythmic medicines
<input type="checkbox"/>	Conduct baseline electrocardiogram (ECG) and blood pressure (BP) measurement
<input type="checkbox"/>	Avoid co-administration of anti-neoplastic, immunomodulatory or immunosuppressive therapies due to the risk of additive immune system effects. For the same reason, a decision to use prolonged concomitant treatment with corticosteroids should be taken after careful consideration
<input type="checkbox"/>	Obtain recent (within 6 months) transaminase, and bilirubin levels
<input type="checkbox"/>	Obtain recent (within 6 months or after discontinuation of prior therapy) full blood count

\*QTc >470 msec (adult females), >460 msec (paediatric females), or >450 msec (adult and paediatric males).

<input type="checkbox"/>	Inform WOCBP (including adolescents and their parents/caregivers) that Fingolimod is contraindicated in pregnant women and WOCBP not using effective contraception
<input type="checkbox"/>	Fingolimod is teratogenic. Confirm a negative pregnancy test result in WOCBP (including adolescents) prior to starting treatment and repeat at suitable intervals during treatment
<input type="checkbox"/>	Inform WOCBP (including adolescents and their parents/caregivers) about the serious risks of Fingolimod to the foetus
<input type="checkbox"/>	Provide all patients, parents (or legal representatives) and caregivers with the Pregnancy-Specific Patient Reminder Card
<input type="checkbox"/>	Counsel WOCBP (including adolescents and their parents/caregivers) to avoid pregnancy and use effective contraception both during treatment and for 2 months after treatment discontinuation. Counselling should be facilitated by the Pregnancy-Specific Patient Reminder Card
<input type="checkbox"/>	Delay initiation of treatment in patients with severe active infection until resolved
<input type="checkbox"/>	Human papilloma virus (HPV) infection, including papilloma, dysplasia, warts and HPV-related cancer, has been reported in the post-marketing setting. Cancer screening (including a Pap test), and vaccination for HPV-related cancer is recommended for patients as per standard of care
<input type="checkbox"/>	Check varicella zoster virus (VZV) antibody status in patients without a healthcare professional confirmed history of chickenpox or documentation of a full course of varicella vaccination. If negative, a full course of vaccination with varicella vaccine is recommended and treatment initiation should be delayed for 1 month to allow full effect of vaccination to occur
<input type="checkbox"/>	Conduct an ophthalmologic evaluation in patients with history of uveitis or diabetes mellitus
<input type="checkbox"/>	Conduct a dermatologic examination. The patient should be referred to a dermatologist in case suspicious lesions, potentially indicative of basal cell carcinoma or other cutaneous neoplasms (including malignant melanoma, squamous cell carcinoma, Kaposi's sarcoma and Merkel cell carcinoma), are detected
<input type="checkbox"/>	Provide patients, parents and caregivers with the Patient's, Parent's and Caregiver's Guide

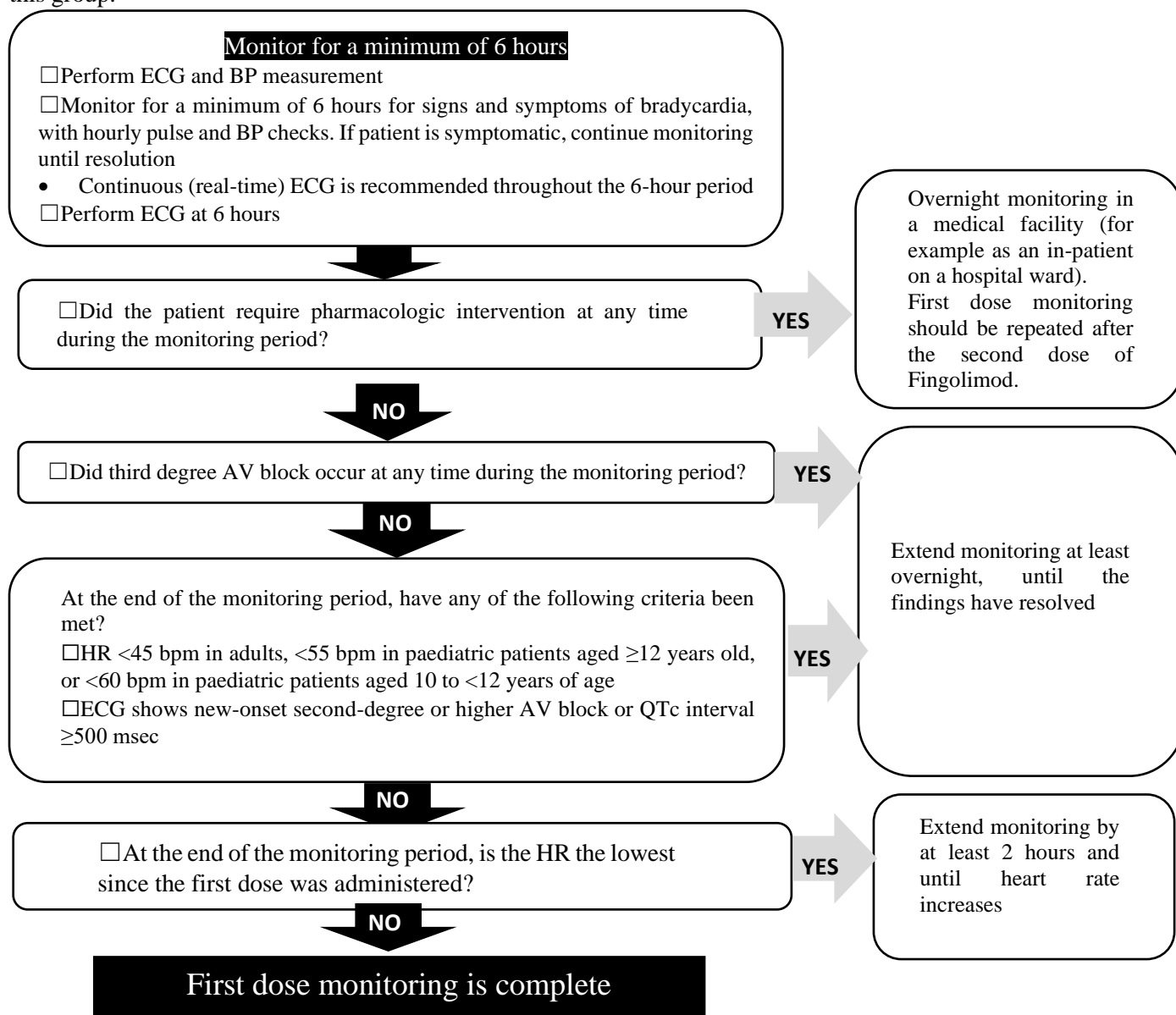
## Treatment initiation algorithm

All patients, including paediatric patients need to be monitored for at least 6 hours during treatment initiation, as described in the algorithm below.

This procedure should also be followed in paediatric patients when the dosage is switched from 0.25 mg to 0.5 mg Fingolimod once daily\*. It should also be followed at re-initiation of treatment if Fingolimod is discontinued for:

- One day or longer within the first 2 weeks of treatment
- More than 7 days during weeks 3 and 4
- More than 2 weeks after the first month of treatment

In addition, for patients in whom Fingolimod is not recommended (see page 2), advice should be sought from a cardiologist regarding appropriate monitoring; at least overnight monitoring is recommended for this group.



**BP=**blood pressure; **ECG=**electrocardiogram;  
**HR=**heart rate; **QTc=**heart-rate-corrected QT interval.

\*For paediatric patients (≥10 years old), the approved dosing for Fingolimod is 0.25 mg once daily for patients weighing ≤40 kg and 0.5 mg once daily for patients weighing >40 kg. 5

## During treatment

<input type="checkbox"/>	<p>A full ophthalmologic assessment is recommended:</p> <ul style="list-style-type: none"> <li>• 3–4 months after starting treatment for the early detection of visual impairment due to drug-induced macular oedema</li> <li>• During treatment in patients with diabetes mellitus or with a history of uveitis</li> </ul>
<input type="checkbox"/>	<p>Counsel patients to report signs and symptoms of infection immediately to their prescriber during, and up to 2 months after treatment with Fingolimod</p> <ul style="list-style-type: none"> <li>• Prompt diagnostic evaluation should be performed in patients with symptoms and signs consistent with encephalitis, meningitis or meningoencephalitis. If diagnosed, discontinue Fingolimod and initiate appropriate treatment <ul style="list-style-type: none"> <li>- Patients with symptoms and signs consistent with cryptococcal meningitis (e.g., headache accompanied by mental changes such as confusion, hallucinations, and/or personality changes) should undergo prompt diagnostic evaluation. If diagnosed, Fingolimod should be suspended and appropriate treatment initiated. Advice from an infectious disease specialist should be given before Fingolimod re-initiation is considered.</li> <li>- Serious, life-threatening, and sometimes fatal cases of encephalitis, meningitis or meningoencephalitis caused by herpes simplex virus (HSV) and VZV were reported while on Fingolimod treatment</li> <li>- Reports of cryptococcal meningitis (sometimes fatal) have been received after approximately 2–3 years of treatment, although an exact relationship with the duration of treatment is unknown</li> </ul> </li> <li>• Be vigilant for clinical symptoms or MRI findings suggestive of progressive multifocal leukoencephalopathy (PML). If PML is suspected, treatment with Fingolimod should be suspended until PML has been excluded <ul style="list-style-type: none"> <li>- Cases of PML have occurred after approximately 2–3 years of monotherapy treatment although an exact relationship with the duration of treatment is unknown</li> </ul> </li> <li>• Suspend treatment during serious infections</li> </ul>
<input type="checkbox"/>	<p>Check full blood count periodically during treatment, at month 3 and at least yearly thereafter, and interrupt treatment if lymphocyte count is confirmed as <math>&lt;0.2 \times 10^9/L^*</math></p>
<input type="checkbox"/>	<p>During treatment and for up to 2 months after discontinuation</p> <ul style="list-style-type: none"> <li>• Vaccinations may be less effective</li> <li>• Live attenuated vaccines may carry a risk of infection and should be avoided</li> </ul>

\*Approved doses of 0.5mg once daily or 0.25 mg once daily in paediatric patients [ $\geq 10$  years old] with a body weight of  $\leq 40$  kg) to be used when restarting treatment as other dosing regimens have not been approved.

<input type="checkbox"/>	<p>Some cases of acute liver failure requiring liver transplant and clinically significant liver injury have been reported</p> <ul style="list-style-type: none"> <li>• During treatment, in the absence of clinical symptoms: <ul style="list-style-type: none"> <li>- Check liver transaminases and serum bilirubin at months 1, 3, 6, 9, and 12 on therapy and periodically thereafter until 2 months after Fingolimod discontinuation</li> <li>- If liver transaminases are greater than 3 but less than 5 times the upper limit of normal (ULN) without increase in serum bilirubin, more frequent monitoring including serum bilirubin and alkaline phosphatase (ALP) measurement should be instituted to determine if further increases occur and in order to discern if an alternative aetiology of hepatic dysfunction is present.</li> <li>- If liver transaminases are at least 5 times the ULN or at least 3 times the ULN associated with any increase in serum bilirubin, Fingolimod should be discontinued. Hepatic monitoring should be continued. If serum levels return to normal (including if an alternative cause of the hepatic dysfunction is discovered) Fingolimod may be restarted based on a careful benefit-risk assessment of the patient*</li> </ul> </li> <li>• Patients who develop symptoms suggestive of hepatic dysfunction, should have liver enzymes and bilirubin checked promptly and treatment should be discontinued if significant liver injury is confirmed. Treatment should not be resumed unless a plausible alternative aetiology for the signs and symptoms of liver injury can be established</li> </ul>
<input type="checkbox"/>	<p>While on treatment, women should not become pregnant. Discontinue treatment if a woman becomes pregnant. Fingolimod should be stopped 2 months before planning a pregnancy, and the possible return of disease activity should be considered. An ultrasonography examination should be performed and medical advice about the harmful effects of Fingolimod to the foetus should be provided.</p>
<input type="checkbox"/>	<p>Advise WOCBP (including adolescents and their parents/caregivers) that effective contraception must be used during treatment and for at least 2 months after treatment discontinuation. Pregnancy tests must be repeated at suitable intervals.</p>
<input type="checkbox"/>	<p>WOCBP (including adolescents and their parents/legal representatives/caregivers) must be informed regularly about the serious risks of Fingolimod to the foetus</p>
<input type="checkbox"/>	<p>Ensure WOCBP (including adolescents), their parents (or legal representatives), and caregivers receive regular counselling facilitated by the Pregnancy-Specific Patient Reminder Card</p>
<input type="checkbox"/>	<p>To help determine the effects of Fingolimod exposure in pregnant women with multiple sclerosis (MS), physicians are encouraged to report pregnant patients who may have been exposed to Fingolimod at any time during pregnancy (from 8 weeks prior to last menstrual period onward) to Tillomed by calling on number +44 (0)1480 402 400 or email at <a href="mailto:PVUK@tillomed.com">PVUK@tillomed.com</a> in order to allow monitoring of these patients.</p>

\*Approved doses of 0.5mg once daily or 0.25 mg once daily in paediatric patients [ $\geq 10$  years old] with a body weight of  $\leq 40$  kg) to be used when restarting treatment as other dosing regimens have not been approved.

<input type="checkbox"/>	<p>Vigilance for basal cell carcinoma and other cutaneous neoplasms is recommended with skin examination every 6 to 12 months and referral to a dermatologist if suspicious lesions are detected</p> <ul style="list-style-type: none"> <li>• Caution patients against exposure to sunlight without protection</li> <li>• Ensure patients are not receiving concomitant phototherapy with UV-B-radiation or PUVA-photochemotherapy</li> </ul>
<input type="checkbox"/>	<p>Fingolimod has an immunosuppressive effect and can increase the risk of developing lymphomas (including mycosis fungoides), and other malignancies (particularly those of the skin). Surveillance should include vigilance for both skin malignancies and mycosis fungoides. Closely monitor patients during treatment, especially those with concurrent conditions or known factors, such as previous immunosuppressive therapy. Treatment discontinuation should be considered in those with a suspected risk on an individual basis.</p>
<input type="checkbox"/>	<p>Cases of seizure, including status epilepticus, have been reported. Vigilance for seizures, especially in those patients with underlying conditions or with a pre-existing history or family history of epilepsy, is recommended</p>
<input type="checkbox"/>	<p>Monitor paediatric patients for signs and symptoms of depression and anxiety</p>
<input type="checkbox"/>	<p>Reassess on an annual basis the benefit of Fingolimod treatment versus risk in each patient, especially paediatric patients</p>

<b>After treatment discontinuation</b>	
<input type="checkbox"/>	<p>Repeat first-dose monitoring as for treatment initiation when treatment is interrupted for:</p> <ul style="list-style-type: none"> <li>• One day or more during the first 2 weeks of treatment</li> <li>• More than 7 days during weeks 3 and 4 of treatment</li> <li>• More than 2 weeks after one month of treatment</li> </ul>
<input type="checkbox"/>	<p>Counsel patients to report signs and symptoms of infection immediately to their prescriber for up to 2 months after discontinuation</p> <p><input type="checkbox"/> Instruct patients to be vigilant for signs of encephalitis, meningitis or meningoencephalitis infection and PML</p>
<input type="checkbox"/>	<p>Inform WOCBP (including adolescents and their parents/caregivers) that effective contraception is needed for 2 months after discontinuation because of the serious risks of Fingolimod to the foetus</p>
<input type="checkbox"/>	<p>Advise women who stop treatment with Fingolimod because they are planning a pregnancy that their disease activity may return</p>
<input type="checkbox"/>	<p>Vigilance for the possibility of severe exacerbation of disease following discontinuation of treatment is recommended</p>



### Summary guidance specifically for paediatric patients

<input type="checkbox"/>	Consider a complete vaccination schedule before starting Fingolimod.
<input type="checkbox"/>	Counsel patients and their parents/caregivers on Fingolimod's immunosuppressive effects
<input type="checkbox"/>	Assess physical development (Tanner staging), and measure height and weight, as per standard of care
<input type="checkbox"/>	Perform cardiovascular monitoring
<input type="checkbox"/>	Perform first-dose monitoring on treatment initiation due to the risk of bradyarrhythmia
<input type="checkbox"/>	Repeat first-dose monitoring in paediatric patients when the dosage is switched from 0.25 mg to 0.5 mg Fingolimod once daily*
<input type="checkbox"/>	Emphasize the importance of treatment compliance to patients, their parents and other caregivers, especially with regard to treatment interruption and the need to repeat first-dose monitoring
<input type="checkbox"/>	Monitor the patient for signs and symptoms of depression and anxiety
<input type="checkbox"/>	Provide guidance on seizure monitoring
<input type="checkbox"/>	Provide pregnancy-specific guidance including the Pregnancy-Specific Patient Reminder Card to adolescent patients of child-bearing potential and their parents/caregivers

\* For paediatric patients ( $\geq 10$  years old), the approved dose of Fingolimod is 0.25 mg once daily with a body weight of  $\leq 40$  kg and 0.5 mg once daily for patients weighing  $>40$  kg.