



High dose,  
high frequency,  
low endurance?

Prescribing information may be found on the inside back cover

All injectable DMTs have demonstrated similar reductions in relapse rates

Mean reduction in relapse rate, data from respective pivotal studies<sup>1-4</sup>

32%



reduction with Avonex,  
 $p=0.002^1$

34%



reduction with Betaferon,  
 $p=0.0001^2$

33%



reduction with Rebif 44,  
 $p<0.005^3$

29%



reduction with Copaxone,  
 $p=0.007^4$

## Relapse rate versus disability progression

Because of the progressive nature of MS, it is important to determine the effect of a treatment on disability progression<sup>5,6</sup>

Relapses

the clinical expression of acute inflammatory focal lesions<sup>7</sup>

Disability progression

a reflection of the occurrence of demyelination, axonal loss and gliosis<sup>7</sup>

Relapse rate should not be used as the sole primary outcome measure in clinical trials because treatments that have a short term effect on relapses may have no effect on long-term disability progression<sup>6</sup>

## No DMT was more effective at delaying progression than Avonex<sup>8</sup>

QUASIMS is the largest ever head-to-head study of interferon beta therapies involving 510 centres with 4754 patients with at least two years of uninterrupted therapy on Avonex, Betaferon or Rebif<sup>8</sup>

### Disability status at 2 years with Avonex

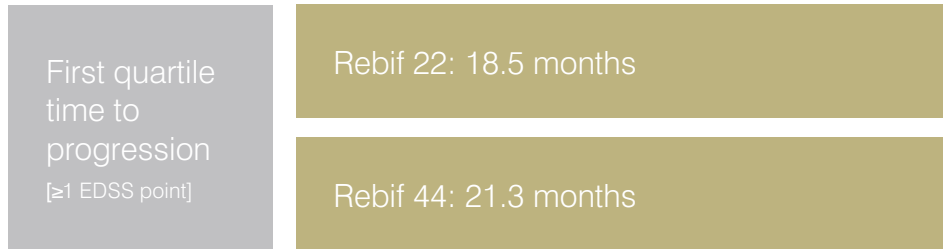


These data suggest there is no correlation between dose / frequency of IFN $\beta$  treatment and efficacy<sup>8</sup>

Copaxone had no beneficial effect on progression of disability in RR-MS<sup>9,10</sup>

Rebif 44 was not significantly more effective than Rebif 22 at delaying progression<sup>3,8,11</sup>

Data from pivotal study<sup>3</sup>



No significant difference between doses reported

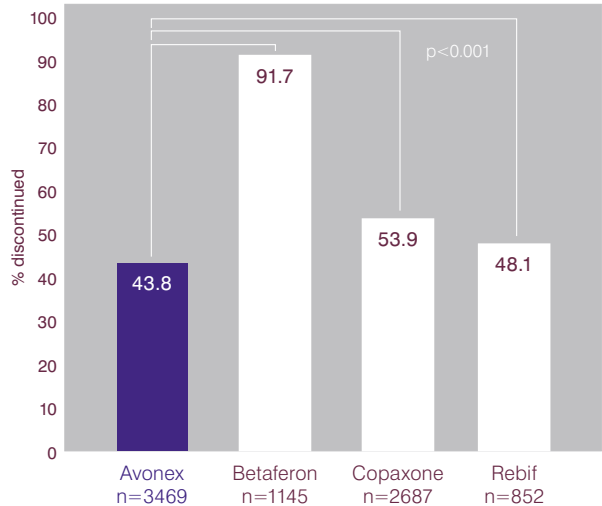
Patients on Rebif 44 may be more likely to discontinue treatment due to an adverse event than those on the lower dose<sup>11</sup>

There is evidence to support a  
“low frequency” strategy

Avonex patients were more likely to take their therapy as  
directed than Betaferon or Copaxone patients<sup>12</sup>

At 2 years, Avonex  
patients were also  
significantly less likely  
to have discontinued  
treatment than  
comparators,  
including Rebif<sup>12</sup>

(n=8153)  
Adapted from Reynolds MW *et al*, 2007



**AVONEX**<sup>®</sup>  
(interferon beta-1a)

**Prescribing information: AVONEX®**

**Presentations:** Lyophilised powder for injection for IM administration containing a 30µg dose (6 million IU) of Interferon beta-1a per vial. Solution for injection in a pre-filled syringe of 0.5ml for IM administration containing 30µg dose (6 million IU) of Interferon beta-1a. **Indications:** For the treatment of ambulatory patients with relapsing multiple sclerosis characterised by at least 2 recurrent attacks of neurologic dysfunction (relapses) over the preceding 3-year period without evidence of continuous progression between relapses. AVONEX® slows the progression of disability and decreases the frequency of relapses. AVONEX® is also indicated for the treatment of patients who have experienced a single demyelinating event with an active inflammatory process if it is severe enough to warrant treatment with intravenous corticosteroids, if alternative diagnoses have been excluded, and if they are determined to be at high risk of developing clinically definite multiple sclerosis (see SPC for further information). Treatment should be discontinued in patients who develop chronic progressive multiple sclerosis. **Dosage and Administration:** The recommended dosage of AVONEX® in the treatment of relapsing MS is 30µg injected IM once a week. AVONEX® lyophilised powder presentation should be reconstituted with the solvent supplied. Treatment should be initiated under supervision of a physician experienced in the treatment of the disease. An antipyretic analgesic is advised to decrease the flu-like symptoms associated with AVONEX® administration. AVONEX® should not be used in children. **Contraindications:** Initiation of treatment in pregnancy. Patients with a history of hypersensitivity to natural or recombinant interferon beta or any of the excipients. Patients with current severe depression disorders and/or suicidal ideation. **Precautions:** **CNS:** AVONEX® should be used with caution in patients with previous or current depressive disorders, in particular to those with antecedents of suicidal ideation. Depression and suicidal ideation are known to occur in increased frequency in the multiple sclerosis population in association with interferon use. Patients treated with AVONEX® should be advised to immediately report any symptoms of depression and/or suicidal ideation to their prescribing physician. AVONEX® should be administered with caution to patients with a history of seizures, to those receiving treatment with anti-epileptics, particularly if their epilepsy is not adequately controlled with anti-epileptics. **Pregnancy and lactation:** Initiation of treatment is contraindicated during pregnancy. Women of child bearing potential should take appropriate contraceptive measures. If the patient becomes pregnant or plans to become pregnant while taking Avonex, discontinuation of therapy should be considered. **General:** AVONEX® should be used with caution in patients with cardiac disease, severe renal or hepatic failure or severe myelosuppression, and these patients should be closely monitored. Routine periodic blood chemistry and haematology tests are recommended during treatment with AVONEX®. Laboratory abnormalities may also occur which do not usually require treatment. **Drug interactions:** No formal interaction studies have been conducted with AVONEX® in humans. Clinical studies indicate that corticosteroids or ACTH

can be given during relapses. Caution should be exercised in combining AVONEX® with medicinal products with a narrow therapeutic index and dependent on hepatic cytochrome P450 for clearance. **Side Effects:** The most commonly reported symptoms are of the flu-like syndrome: muscle ache, fever, chills, asthenia, headache and nausea. Other less common events include: **Body as a whole:** Anorexia, hypersensitivity reactions, weight loss, weight gain, severe allergic reactions (anaphylactic reactions or anaphylactic shock), syncope. **Skin and appendages:** Alopecia, angioneurotic oedema, injection site reaction including pain, pruritus, rash, urticaria. **Digestive system:** Diarrhoea, hepatitis, liver function test abnormalities, vomiting. **Cardiovascular system:** Chest pain, palpitations, tachycardia, and vasodilatation and rarely arrhythmia, cardiomyopathy, congestive heart failure. **Haematological system:** Thrombocytopenia and rare cases of pancytopenia. **Reproductive system:** Metrorrhagia and/or menorrhagia. **Nervous system:** Anxiety, dizziness, insomnia, paraesthesia, seizures, depression, suicide (see Precautions). Transient neurological symptoms that mimic MS exacerbations may occur following injections. **Musculoskeletal system:** Arthralgia, pain, transient hypertonia and/or severe muscular weakness. **Respiratory system:** Dyspnoea. Autoimmune disorders, central nervous system disorders and laboratory abnormalities have been reported with interferons. Rare cases of arthritis, hypo- and hyperthyroidism, lupus erythematosus syndrome, confusion, emotional lability, psychosis, migraine and very rare cases of autoimmune hepatitis have been reported with AVONEX®. For further information regarding adverse events please refer to the Summary of Product Characteristics. **Preclinical Safety:** Fertility and developmental studies with a related form of Interferon beta-1a in Rhesus monkeys show anovulatory and abortifacient effects at high doses. No teratogenic effects or effects on foetal development were observed. **Legal Classification:** POM. **Pack Size and UK NHS Price:** Box containing four injections £654. Reimbursed through High Tech Scheme in Ireland. **Package Quantities:** Lyophilised Powder: 1 box containing four trays. Each tray contains a 3ml glass vial with BIO-SET device containing a 30µg dose of Interferon beta-1a per vial, a 1ml pre-filled glass syringe of solvent and one needle. Pre-filled Syringe: 1 box containing four trays. Each tray contains a 1ml pre-filled syringe made of glass containing 0.5ml of solution (30µg dose of Interferon beta-1a) and one needle. **Product Licence Numbers:** EU/1/97/033/002-003. **Product Licence Holder:** Biogen Idec Ltd., 5 Roxborough Way, Foundation Park, Maidenhead, Berkshire SL6 3UD, United Kingdom. Date of last revision of Prescribing Information: September 2006. Please refer to the Summary of Product Characteristics for further information.

**For UK only:**

Information about adverse event reporting can be found at [www.yellowcard.gov.uk](http://www.yellowcard.gov.uk). Adverse events should also be reported to Biogen Idec Ltd., on 08000 286639.

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**References:**

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8. Limmroth V *et al.* MS Clin Lab Res 2003; **9** (Suppl 1): 140.
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12. Reynolds MW *et al.* Poster presented at ECTRIMS, October 2007; Prague, Czech Republic.
13. Halper J *et al.* J Neurosci Nurs 2003; **35**: 70-81
14. Rudick RA *et al.* Poster Presented at ECTRIMS. October 2007; Prague.

mother: 365 days a year  
ms patient: 15 minutes every Friday



**AVONEX**<sup>®</sup>  
(interferon beta-1a)

Efficacy that fits lives

Avonex is the only DMT to show significant beneficial effects on cognitive dysfunction<sup>13</sup>

Treatment with Avonex leads to a reduction in disability over the long term<sup>14</sup>

Avonex is the only once-weekly treatment for MS

Is there any reason why Avonex shouldn't be your 1st choice?