

NEW ZEALAND DATA SHEET

1 NAME OF THE MEDICINE

Arrow – Fluoxetine

Arrow – Fluoxetine Dispersible

2 QUALITATIVE AND QUANTITATIVE COMPOSITION

Each capsule contains fluoxetine hydrochloride equivalent to 20 mg fluoxetine.

Each dispersible tablet contains fluoxetine hydrochloride equivalent to 20 mg fluoxetine.

For the full list of excipients, [see Section 6.1 List of excipients](#).

3 PHARMACEUTICAL FORM

Arrow - Fluoxetine capsules are presented as size 2, hard gelatin, green/off-white capsules imprinted with 'FLX' and 'MIL' on the cap/body in black ink.

Arrow – Fluoxetine Dispersible is presented as white, round, tablets, 10.5 mm diameter with a breakline on one side.

4 CLINICAL PARTICULARS

4.1 Therapeutic indications

Fluoxetine is indicated for adults who suffer from the following conditions:

- Depression and its associated anxiety.
- Bulimia nervosa.
- Obsessive-Compulsive disorder.
- Premenstrual dysphoric disorder (PMDD) - a severe form of PMS.

Diagnosis of PMDD: The essential features of PMDD are clear and established cyclicality of symptoms (occurring during the last week of the luteal phase in most menstrual cycles) such as depressed mood, anxiety, affective lability, and physical symptoms such as breast tenderness or swelling, headaches, joint or muscle pain, bloating, and weight gain. PMDD is a severe clinical entity and is distinguished from the broader premenstrual syndrome by the intensity of its symptoms (particularly mood symptoms) and the extent to which it interferes with social and/or occupational function.

4.2 Dose and method of administration

Dose

The recommended dose may be increased or decreased. Doses above 80 mg/day have not been systematically evaluated.

Depression

20 mg per day is the recommended initial dose.

Bulimia Nervosa

60 mg per day is the recommended dose.

Obsessive-Compulsive Disorder

20 mg to 60 mg per day is the recommended dose.

Premenstrual Dysphoric Disorder

20 mg per day is recommended continuously throughout the menstrual cycle. Initial treatment should be limited to six months, after which patients should be reassessed regarding the benefit of continued therapy.

Age

There are no data to suggest that alternative dosing is required on the basis of age alone.

Paediatric Population

While clinical studies have been conducted in children and adolescents (<18 years), the use of Arrow - Fluoxetine is not recommended in this population. ([See Section 4.4 Special warnings and precautions for use](#) – Clinical Worsening and Suicide Risk, Impairment of Fertility, Adverse Effects).

Concurrent Disease and/or Concomitant Medication

A lower or less frequent dose should be considered in patients with hepatic impairment, with concurrent diseases, or who are taking multiple medications.

Method of Administration

Arrow – Fluoxetine capsules should be swallowed whole and may be administered with or without food.

Arrow – Fluoxetine Dispersible tablets may be swallowed whole, broken in half for a 10 mg dose or dispersed in approximately 100 mL of water.

4.3 Contraindications

Hypersensitivity

Arrow - Fluoxetine is contraindicated in patients known to be hypersensitive to fluoxetine.

MAOIs

Arrow – Fluoxetine should not be used in combination with a monoamine oxidase inhibitor (MAOI) or within a minimum of 14 days of discontinuing treatment with a MAOI. At least five weeks should elapse between discontinuation of Arrow - Fluoxetine and initiation of therapy with a MAOI. If Arrow - Fluoxetine has been prescribed chronically and/or at a high dose, a longer interval should be considered. Serious and fatal cases of serotonin syndrome (which may resemble and be diagnosed as neuroleptic malignant syndrome) have been reported in patients treated with fluoxetine and a MAOI in close temporal proximity.

4.4 Special warnings and precautions for use

Warnings

Clinical Worsening and Suicide Risk

The risk of suicide attempt is inherent in depression and other psychiatric disorders and may persist until significant remission occurs. As with other drugs with similar pharmacological action (antidepressants), isolated cases of suicidal ideation and suicidal behaviours have been reported during fluoxetine therapy or early after treatment discontinuation. This risk must be considered in all depressed patients.

Although a causal role for fluoxetine in inducing such events has not been established, some analyses from pooled studies of antidepressants in psychiatric disorders found an increased risk for suicidal ideation and/or suicidal behaviours in paediatric and young adult (<25 years of age) patients compared to placebo. Patients with depression may experience worsening of their depressive symptoms and/or the emergence of suicidal ideation and behaviours (suicidality) whether or not they are taking antidepressant medications, and this risk may persist until significant remission occurs. As improvement may not occur during the first few weeks or more of treatment, patients should be closely monitored for clinical worsening and suicidality, especially at the beginning of a course of treatment, or at the time of dose changes, either increases or decreases. Consideration should be given to changing the therapeutic regimen, including possibly discontinuing the medication, in patients

whose depression is persistently worse or whose emergent suicidality is severe, abrupt in onset, or was not part of the patient's presenting symptoms. Patients (and caregivers of patients) should be alerted about the need to closely monitor for any worsening of their condition and/or the emergence of suicidal ideation/behaviour or thoughts of harming themselves and to seek medical advice immediately if these symptoms present. Physicians should encourage patients of all ages to report any distressing thoughts or feelings at any time. Patients with co-morbid depression associated with other psychiatric disorders being treated with antidepressants should be similarly observed for clinical worsening and suicidality.

Pooled analyses of 24 short-term (4 to 16 weeks), placebo-controlled trials of nine antidepressant medicines [selective serotonin reuptake inhibitors (SSRIs) and others] in 4400 children and adolescents with major depressive disorder (16 trials), obsessive compulsive disorder (4 trials), or other psychiatric disorders (4 trials) have revealed a greater risk of adverse events representing suicidal behaviour or thinking (suicidality) during the first few months of treatment in those receiving antidepressants. The average risk of such events in patients treated with an antidepressant was 4%, compared with 2% of patients given placebo. There was considerable variation in risk among the antidepressants, but there was a tendency towards an increase for almost all antidepressants studied. The risk of suicidality was most consistently observed in the major depressive disorder trials, but there were signals of risk arising from trials in other psychiatric indications (obsessive compulsive disorder and social anxiety disorder) as well. No suicides occurred in these trials. It is unknown whether the suicidality risk in children and adolescent patients extends to use beyond several months. The nine antidepressant medicines in the pooled analyses included five SSRIs (citalopram, fluoxetine, fluvoxamine, paroxetine, sertraline) and four non-SSRIs (bupropion, mirtazapine, nefazodone, venlafaxine). Symptoms of anxiety, agitation, panic attacks, insomnia, irritability, hostility (aggressiveness), impulsivity, akathisia (psychomotor restlessness), hypomania, and mania, have been reported in adults, adolescents and children being treated with antidepressants for major depressive disorder as well as for other indications, both psychiatric and nonpsychiatric. Although a causal link between the emergence of such symptoms and either worsening of depression and/or emergence of suicidal impulses has not been established, there is concern that such symptoms may be precursors of emerging suicidality.

Families and caregivers of children and adolescents being treated with antidepressants for major depressive disorder or for any other condition (psychiatric or nonpsychiatric) should be informed about the need to monitor these patients for the emergence of agitation, irritability, unusual changes in behaviour, and other symptoms described above, as well as the emergence of suicidality, and to report such symptoms to health care providers immediately. It is particularly important that monitoring be undertaken during the initial few months of antidepressant treatment or at times of dose increase or decrease.

Prescriptions for fluoxetine should be written for the smallest quantity of medicine consistent with good patient management, in order to reduce the risk of overdose.

Cardiovascular Effects

QT prolongation can occur with fluoxetine treatment. Cases of QTc prolongation and Torsades de Pointes (TdP) have been reported during the post-marketing use of fluoxetine. The majority of reports occurred in patients with other risk factors for QTc prolongation/TdP. Fluoxetine should be used with caution in patients with risk factors for QTc prolongation including, congenital long QT syndrome, age >65 years, female sex, structural heart disease/LV dysfunction, medical conditions such as hepatic disease, use of medicines that inhibit the metabolism of fluoxetine, electrolyte imbalance (hypokalaemia and hypomagnesaemia should be corrected prior to treatment), and the concomitant use of other QT prolonging medicines (see [Section 4.5 Interaction with other medicines and other forms of interaction](#)). Another factor associated with QTc prolongation is a family history of QTc prolongation.

In high risk patients (eg. congenital long QT syndrome or multiple risk factors), an ECG should be performed prior to starting treatment, at steady state, after dose increases or after starting any potentially interacting medicine. Electrolytes should be monitored periodically. An ECG should also

be performed in all patients experiencing symptoms that could be indicative of an arrhythmia (eg. dizziness, palpitations, syncope or new onset seizures). Consideration should be given to stopping fluoxetine treatment or reducing the dose if the QTc interval is >500 ms or increases by >60 ms.

Cardiac Disease

Clinical experience in acute cardiac disease is limited; therefore caution is advisable.

Rash

Rash, anaphylactoid events, and progressive systemic events, sometimes serious and involving skin, kidney, liver or lung have been reported in patients taking fluoxetine. Upon the appearance of rash, or of other possible allergic phenomena for which an alternative aetiology cannot be identified Arrow - Fluoxetine should be discontinued.

Mania and Bipolar Disorder

A major depressive episode may be the initial presentation of bipolar disorder. It is generally believed (though not established in controlled trials) that treating such an episode with any antidepressant alone may increase the likelihood of a mixed/manic episode in patients at risk for bipolar disorder. Prior to initiating treatment with an antidepressant, patients with depressive symptoms should be adequately screened to determine if they are at risk for bipolar disorder. It should be noted that fluoxetine is not approved for use in treating bipolar depression.

Tamoxifen

Fluoxetine, a potent inhibitor of CYP2D6, may lead to reduced concentrations of endoxifen, one of the most important active metabolites of tamoxifen. Therefore, fluoxetine should whenever possible be avoided during tamoxifen treatment.

Akathisia/psychomotor restlessness

The use of fluoxetine has been associated with the development of akathisia, characterised by a subjectively unpleasant or distressing restlessness and need to move, often accompanied by an inability to sit or stand still. This is the most likely to occur in the first few weeks of treatment. In patients who develop these symptoms, increasing the dose may be detrimental.

St John's Wort

An increase in serotonergic effects, such as serotonin syndrome, may occur when selective serotonin reuptake inhibitors and herbal preparations containing St John's Wort (*Hypericum perforatum*) are used together.

Serotonin Syndrome

On rare occasions, development of a serotonin syndrome or neuroleptic malignant syndrome-like events have been reported in association with fluoxetine treatment, particularly when given in combination with other serotonergic and/or neuroleptic medicines. As this syndrome may result in potentially life-threatening conditions, treatment with fluoxetine should be discontinued if such events (characterised by clusters of symptoms such as hyperthermia, rigidity, myoclonus, autonomic instability with possible rapid fluctuations of vital signs, mental status changes, including confusion, irritability, extreme agitation progressing to delirium and coma) occur and supportive treatment should be initiated.

Bone fractures

Epidemiological studies, mainly conducted in patients 50 years of age and older, show increased risk of bone fractures in patients receiving SSRIs and TCAs. The mechanism leading to this risk is unknown.

Thunderclap Headaches

Reversible cerebral vasoconstriction syndrome (thunderclap headache) has been associated with serotonergic agents such as SSRIs or triptans.

Alcohol

As with other psychotropic drugs patients should be advised to avoid alcohol while taking fluoxetine.

Precautions

Seizures

As with other antidepressants, Arrow - Fluoxetine should be introduced cautiously in patients who have a history of seizures.

Hyponatraemia

Cases of hyponatraemia (some with serum sodium lower than 110 mmol/L) have been reported. The majority of these cases occurred in elderly patients and in patients treated with diuretics or otherwise volume-depleted.

Glycaemic Control

In patients with diabetes, hypoglycaemia has occurred during therapy with fluoxetine and hyperglycaemia has developed following discontinuation. Insulin and/or oral hypoglycaemic dosage may need to be adjusted when fluoxetine therapy is initiated or discontinued.

Mydriasis

Mydriasis has been reported in association with fluoxetine; therefore, caution should be used when prescribing fluoxetine in patients with raised intraocular pressure or those at risk of acute narrow-angle glaucoma.

Abnormal Bleeding

SSRIs and SNRIs, including fluoxetine may increase the risk of bleeding events, including gastrointestinal bleeding (see [Section 4.8 Undesirable effects](#)). Therefore caution is advised in patients taking fluoxetine concomitantly with anticoagulants and/or medicinal products known to affect platelet function (e.g. NSAIDs, aspirin) and in patients with known bleeding tendencies.

Withdrawal Reactions

Discontinuation symptoms have been reported in association with selective serotonin reuptake inhibitors (SSRIs). Because of the long elimination half-life of fluoxetine, and its active metabolite norfluoxetine, plasma fluoxetine and norfluoxetine concentrations decrease gradually at the conclusion of therapy, which reduces greatly the likelihood of developing discontinuation symptoms and makes dosage tapering unnecessary in most patients. Common symptoms associated with withdrawal of SSRIs include dizziness, paraesthesia, headache, anxiety and nausea. Onset of symptoms can occur within a day of discontinuation but may be delayed, particularly in the case of fluoxetine, due to its long half-life. The majority of symptoms experienced on withdrawal of SSRIs are non serious, self-limiting and have varying durations. Fluoxetine has been only rarely associated with such symptoms.

Haemorrhage

There have been reports of cutaneous bleeding abnormalities such as ecchymosis and purpura with SSRI's. Ecchymosis has been reported as an infrequent event during treatment with fluoxetine. Other haemorrhagic manifestations (e.g., gynaecological haemorrhages, gastrointestinal bleedings and other cutaneous or mucous bleedings) have been reported rarely. Caution is advised in patients with a history of bleeding disorders as well as in patients taking SSRI's, particularly in concomitant use with oral anticoagulants, drugs known to affect platelet function (e.g. atypical antipsychotics such as clozapine, phenothiazines, most TCA's, aspirin, NSAID's) or other drugs that may increase risk of bleeding.

Information for Patients and Families

Physicians are advised to discuss the following issues with patients for whom they prescribe fluoxetine:

Since fluoxetine may impair judgement, thinking, or motor skills, patients should be advised to avoid driving a car or operating hazardous machinery until they are reasonably certain that their performance is not affected.

Patients should be advised to inform their physician if they are taking or plan to take any prescription or over-the-counter medicines, or alcohol.

Patients should be advised to inform their physician if they become pregnant or intend to become pregnant during therapy.

Patients should be advised to notify their physician if they are breast feeding an infant. Patients should be advised to notify their physician if they develop a rash or hives.

The patient has the right to treatment meeting appropriate ethical and professional standards, and the patient needs to be fully informed with frank discussion of risk/benefit issues relating to the medicine's efficacy and safety when used in the treatment regimen proposed.

4.5 Interaction with other medicines and other forms of interaction

Monoamine Oxidase Inhibitors

See [Section 4.3 Contraindications](#).

Medicines Metabolised by Cytochrome P450IID6 Isoenzyme

Because fluoxetine has the potential to inhibit the cytochrome P450IID6 isoenzyme, therapy with medications that are predominantly metabolised by the P450IID6 system and that have a relatively narrow therapeutic index should be initiated at the low end of the dose range if a patient is receiving Arrow- Fluoxetine concurrently or has taken it in the previous five weeks. If Arrow - Fluoxetine is added to the treatment range of a patient already receiving such a medicine, the need for decreased dose of the original medication should be considered.

CNS active medicines

Changes in the blood levels of phenytoin, carbamazepine, haloperidol, clozapine, diazepam, alprazolam, lithium, imipramine and desipramine, and in some cases, clinical manifestations of toxicity have been observed. Consideration should be given to using conservative titration schedules of the concomitant medicine and monitoring of clinical status. Concomitant use of other drugs with serotonergic activity (e.g. SNRIs, SSRIs, triptans or tramadol) may result in serotonin syndrome.

Lithium and tryptophan

There have been reports of serotonin syndrome when SSRIs have been given with lithium or tryptophan; therefore the concomitant use of fluoxetine with these drugs should be undertaken with caution. When fluoxetine is used in combination with lithium, closer and more frequent clinical monitoring is required.

St John's Wort

In common with other SSRIs, pharmacodynamic interactions between fluoxetine and the herbal remedy St John's Wort (*Hypericum perforatum*) may occur, which may result in an increase of undesirable, mainly serotonergic effects.

Alcohol

In formal testing, fluoxetine did not raise blood alcohol levels or enhance the effects of alcohol. However the combination of SSRI treatment and alcohol is not advisable.

Protein binding

Because fluoxetine is tightly bound to plasma protein, the administration of Arrow - Fluoxetine to a patient taking another medicine that is tightly bound to protein may cause a shift in plasma concentrations of either medicine.

Tamoxifen

Pharmacokinetic interaction between CYP2D6 inhibitors and tamoxifen showing a 65-75% reduction in plasma levels of one of the more active forms of tamoxifen (endoxifen) has been reported in the literature. Reduced efficacy has been reported with concomitant usage of some SSRI antidepressants in some studies. As a reduced effect of tamoxifen cannot be excluded, co-administration with potent CYP2D6 inhibitors (including fluoxetine) should be avoided when possible.

Drugs that interfere with haemostasis

Caution is advised in patients with a history of bleeding disorders as well as in patients taking SSRI's, particularly in concomitant use with oral anticoagulants, medicines known to affect platelet function (e.g. atypical antipsychotics such as clozapine, phenothiazines, most TCA's, aspirin, NSAID's) or other drugs that may increase risk of bleeding.

Warfarin

Altered anti-coagulant effects (laboratory values and/or clinical signs and symptoms), with no consistent pattern, but including increased bleeding, have been reported uncommonly when Fluoxetine is co-administered with warfarin. As is prudent in concomitant use of warfarin with many other drugs, patients receiving warfarin therapy should receive careful coagulation monitoring when Arrow - Fluoxetine is initiated or stopped.

Electroconvulsive therapy (ECT)

There have been rare reports of prolonged seizures in patients on Fluoxetine receiving ECT treatment.

Elimination half-life

The long elimination half-lives of fluoxetine and its principal metabolite, norfluoxetine, are of potential consequence when medicines are prescribed which might interact with either substance following the discontinuation of Arrow - Fluoxetine.

4.6 Fertility, pregnancy and lactation

Pregnancy

Fluoxetine use should be considered during pregnancy only if the potential benefit justifies the potential risk to the foetus, taking into account the risks of untreated depression.

Experimental animal studies do not indicate direct or indirect harmful effects, with respect to the development of the embryo or foetus or the course of gestation. Because animal reproduction studies are not always predictive of human response, this medicine should be used during pregnancy only if clearly needed.

This drug crosses the placenta.

Results of a number of epidemiological studies assessing the risk of fluoxetine exposure in early pregnancy have been inconsistent and have not provided conclusive evidence of an increased risk of congenital malformations. However, one meta-analysis suggests a potential risk of cardiovascular defects in infants of women exposed to fluoxetine during the first trimester of pregnancy compared to infants of women who were not exposed to fluoxetine.

At the end of pregnancy, caution should be exercised, as transitory withdrawal symptoms (eg. transient jitteriness, difficulty feeding, tachypnea and irritability) have been reported rarely in the neonate after maternal use near term.

Neonates exposed to fluoxetine and other SSRIs or serotonin and noradrenaline reuptake inhibitors (SNRIs), late in the third trimester have been uncommonly reported to have clinical findings of respiratory distress, cyanosis, apnoea, seizures, temperature instability, feeding difficulty, vomiting, hypoglycaemia, hypotonia, hypertonia, hyperreflexia, tremor, jitteriness, irritability and constant crying. Such events can arise immediately upon delivery and are usually transient. These features could be consistent with either a direct effect of SSRIs and SNRIs or, possibly, a drug discontinuation

syndrome. When treating a pregnant woman with fluoxetine during the third trimester, the physician should carefully consider the potential risks and benefits of treatment.

Although untreated depression is a risk factor for preterm delivery, epidemiological data suggests that the use of SSRIs and SNRIs in pregnancy may be associated with a further additional increased risk of pre-term delivery.

Although there is no consistent evidence epidemiological data have suggested that the use of SSRIs in pregnancy, particularly in late pregnancy, may increase the risk of persistent pulmonary hypertension in the newborn (PPHN). In the general population PPHN occurs in 1 to 2 per 1000 live births and the increase in absolute risk with treatment would be very small. This potential risk should be weighed against the need for treatment during pregnancy.

The effect of fluoxetine on labour and delivery in humans is unknown.

Breast feeding

Fluoxetine is excreted in human milk; therefore, caution should be exercised when Arrow - Fluoxetine is administered to nursing women.

Fertility

Impairment of fertility in adult animals at doses up to 12.5 mg/kg/day (approximately 1.5 times the MRHD on a mg/m² basis) was not observed.

4.7 Effects on ability to drive and use machines

Psychoactive medicines may impair judgement, thinking, or motor skills. Patients should be advised to avoid driving a car or operating machinery until they are reasonably certain that their performance is not affected.

4.8 Undesirable effects

Adverse reactions are dose-dependent and more common at higher doses than 20 mg per day.

Associated with Discontinuation of Treatment

Fifteen percent of approximately 4,000 patients who received fluoxetine hydrochloride in U.S. premarketing clinical trials discontinued treatment due to an adverse event. The more common events causing discontinuation included: psychiatric (5.3%), primarily nervousness, anxiety and insomnia; digestive (3.0%), primarily nausea; nervous system (1.6%), primarily dizziness; body as a whole (1.5%), primarily asthenia and headache; and skin (1.4%), primarily rash and pruritus.

In obsessive compulsive disorder studies, 12.1% of fluoxetine treated patients discontinued treatment early because of adverse events. Anxiety and rash at incidences of less than 2% were the most frequently reported events.

Events Observed During Therapy with Fluoxetine - Clinical Trials

The following events listed by body system have been observed. Very common adverse events are defined as those occurring in 1 or more occasions in at least 1/10 patients; common adverse events are defined as those occurring in 1 or more occasions in at least 1/100 patients; uncommon adverse events are those occurring in 1/100 to 1/1000 patients; rare events are those occurring in less than 1/1000 patients; very rare events are those occurring in less than 1/10000 patients. It is important to emphasise that, although the events reported did occur during treatment with fluoxetine, they were not necessarily caused by it.

Body as a Whole - Very Common: fatigue (includes asthenia); Common: allergic reaction, chills; Uncommon: feeling abnormal; Rare: photosensitivity reaction, serum sickness, anaphylactoid reaction, vasculitis; Very Rare: serotonin syndrome (neuroleptic malignant syndrome-like effects), mild intensity headache.

Cardiovascular System - Common: palpitations, vasodilatation; Uncommon: Hypotension; Very Rare: orthostatic hypotension.

Digestive System - Very Common: diarrhoea, nausea; Common: anorexia, dyspepsia, gastrointestinal disorder, mouth dryness, vomiting; Uncommon: dysphagia; Rare: oesophageal pain.

Haemic and Lymphatic Systems - Uncommon: ecchymosis

Metabolic and Nutritional Disorders - Common: weight loss.

Musculoskeletal System - Uncommon: twitching.

Nervous System - Very Common: anxiety, dizziness, headache, insomnia, nervousness, somnolence, tremor; Common: abnormal dreams, libido decreased, sleep disorder, thinking abnormal; Uncommon: akathisia, ataxia, balance disorder, bruxism, buccoglossal syndrome, depersonalisation, dyskinesia, manic reaction, myoclonus, seizures, psychomotor hyperactivity.

Respiratory System - Common: yawn.

Skin and Appendages - Common: pruritus, rash, sweating, urticaria; Uncommon: alopecia.

Special Senses - Common: abnormal vision, taste perversion; Uncommon: mydriasis.

Urogenital System - Common: abnormal ejaculation (male only), gynaecological bleeding (female only), impotence (male only), urinary frequency; Uncommon: anorgasmia, breast pain, sexual dysfunction (occasionally persisting after treatment discontinuation), urination impaired, Rare: priapism (male only).

Investigations – Common: Electrocardiogram Data: QT interval prolongation (QTcF \geq 450 msec)

Children and Adolescents Common: epistaxis

(Very rare) Weight loss and decreased height gain: As with other SSRIs, decreased weight gain has been observed in association with the use of fluoxetine in children and adolescent patients. After 19 weeks of treatment in a clinical trial, paediatric subjects treated with fluoxetine gained an average of 1.1 cm less in height ($p=0.004$) and 1.1 kg less in weight ($p=0.008$) than subjects treated with placebo. Fluoxetine treatment was also associated with a decrease in serum alkaline phosphatase levels in this study.

In a retrospective matched control observational study with a mean of 1.8 years of exposure to fluoxetine, paediatric subjects treated with fluoxetine had no difference in growth (0.0cm) adjusted for expected growth in height from their matched, untreated controls (95% CI: -0.6 to 0.6, $p=0.9673$). Limited evidence is available concerning the longer-term effects of fluoxetine on the development and maturation of children and adolescent patients. Height and weight should be monitored periodically in paediatric patients receiving fluoxetine.

Post-Marketing Experience

The following events have not been reported in clinical trials of fluoxetine, but have been reported in clinical practice and are possibly related to fluoxetine therapy. All these events are classified as very rare (occurring in less than 1/10000 patients) (except haemorrhagic manifestations which is classified as rare (occurring in less than 1/1000 patients)).

Body as a Whole - malignant hyperthermia, Stevens-Johnson syndrome, erythema multiforme.

Cardiovascular - angioedema.

Digestive System – abnormal hepatic function, aggravation of hepatic damage, hepatic failure/necrosis, idiosyncratic hepatitis, gastrointestinal bleeding. (This includes: oesophageal varices haemorrhage, gingival and mouth bleeding, haematemesis, haematochezia, haematomas [intra-abdominal, peritoneal], haemorrhage [anal, oesophageal, gastric, gastrointestinal (upper and lower), haemorrhoidal, peritoneal, rectal], haemorrhagic diarrhoea and enterocolitis, haemorrhagic diverticulitis, haemorrhagic gastritis, melaena and ulcer haemorrhage [esophageal, gastric, duodenal]).

Endocrine System - inappropriate secretion of antidiuretic hormone.

Haemic and Lymphatic Systems - eosinophilia, thrombocytopenic purpura; (Rare): haemorrhagic manifestations (e.g. gynaecological haemorrhages, gastrointestinal bleedings and other cutaneous or mucous bleedings) ([see Section 4.4 Special warnings and precautions for use](#), Haemorrhage).

Metabolic and Nutritional Disorders – weight gain

Nervous System - oculogyric crisis, tardive dyskinesia, memory impairment, aggression and extrapyramidal syndrome.

Skin and Appendages - epidermal necrolysis.

Urogenital System - enlarged clitoris.

Reproductive System and Breast Disorders – gynaecomastia, galactorrhea and hyperprolactinaemia.

Reporting of suspected adverse reactions

Reporting suspected adverse reactions after authorisation of the medicine is important. It allows continued monitoring of the benefit/risk balance of the medicine. Healthcare professionals are asked to report any suspected adverse reactions <https://nzphvc.otago.ac.nz/reporting/>

4.9 Overdose

Symptoms

Cases of overdose of fluoxetine alone usually have a mild course. Symptoms of overdose have included nausea, vomiting, seizures, cardiovascular dysfunction ranging from asymptomatic arrhythmias (including nodal rhythm and ventricular arrhythmias) or ECG changes indicative of QTc prolongation to cardiac arrest, (including very rare cases of Torsades de Pointes), pulmonary dysfunction, and signs of altered CNS status ranging from excitation to coma. Fatality attributed to overdose of fluoxetine alone has been extremely rare.

Management

Cardiac and vital signs monitoring is recommended, along with general symptomatic and supportive measures. No specific antidote is known. Forced diuresis, dialysis, haemoperfusion, and exchange transfusion are unlikely to be of benefit. In managing overdosage, consider the possibility of multiple medicine involvement. The physician should consider contacting the Poisons Information Centre on 0800 764 766 or 0800 POISON for advice on the treatment and management of any overdosage.

5 PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Antidepressants; Selective Serotonin Reuptake Inhibitors, ATC Code: N06A B03

The aetiology of premenstrual dysphoric disorder is unknown, but endogenous steroids (neuro and/or ovarian) involved in the menstrual cycle may interrelate with neuronal serotonergic activity. Clinical data premenstrual dysphoric disorder (PMDD): In clinical trials fluoxetine was shown to be effective in relieving both the cyclical mood changes and physical symptoms (tension, irritability and dysphoria, bloating and breast tenderness) associated with PMDD.

Mechanism of action

Arrow - Fluoxetine is an antidepressant intended for oral administration. Fluoxetine is a selective inhibitor of serotonin reuptake, its presumed mechanism of action. Fluoxetine has practically no affinity to other receptors such as α_1 -, α_2 - and β -adrenergic; serotonergic; dopaminergic; histaminergic; muscarinic; and GABA receptors.

5.2 Pharmacokinetic properties

Absorption

Fluoxetine is well absorbed after oral administration. Peak plasma concentration is reached in six to eight hours.

Distribution

Fluoxetine is extensively bound to plasma proteins.

Fluoxetine is widely distributed. Steady-state plasma concentrations are achieved after dosing for several weeks. Steady-state concentrations after prolonged dosing are similar to concentrations seen at four to five weeks.

Elimination

Fluoxetine is extensively metabolised in the liver to norfluoxetine and a number of other, unidentified metabolites which are excreted in urine. The elimination half-life of fluoxetine is four to six days and that of its active metabolite is four to 16 days.

5.3 Preclinical Safety Data

There is no evidence of carcinogenicity or mutagenicity from *in vitro* or animal studies.

In a juvenile toxicology study in CD rats, administration of 30 mg/kg of fluoxetine hydrochloride on postnatal days 21 through 90 resulted in increased serum activities of creatine kinase (CK) and aspartate aminotransferase (AST), which were accompanied microscopically by skeletal muscle degeneration, necrosis and regeneration. Other findings in rats administered 30 mg/kg included degeneration and necrosis of seminiferous tubules of the testis, epididymal epithelial vacuolation, and immaturity and inactivity of the female reproductive tract. Plasma levels achieved in these animals at 30 mg/kg were approximately 5 to 8 fold (fluoxetine) and 18 to 20 fold (norfluoxetine), and at 10 mg/kg approximately 2 fold (fluoxetine) and 8 fold (norfluoxetine) higher compared to plasma concentrations usually achieved in paediatric patients. Following an approximate 11-week recovery period, sperm assessments in the 30 mg/kg males only, indicated an approximately 30% decrease in sperm concentrations without affecting sperm morphology or motility. Microscopic evaluation of testes and epididymides of these 30 mg/kg males indicated that testicular degeneration was irreversible. Delays in sexual maturation occurred in the 10 mg/kg males and in the 30 mg/kg males and females. The significance of these findings in humans is unknown. Femur length at 30 mg/kg increased to a lesser extent compared with control rats.

6 PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Capsules: Maize starch, gelatin, yellow iron oxide (E172), titanium dioxide (E171), brilliant blue (E133) & edible black printing ink.

Dispersible tablets: Microcrystalline cellulose, croscarmellose sodium, colloidal anhydrous silica, magnesium stearate.

6.2 Incompatibilities

Not applicable.

6.3 Shelf life

Capsules: 3 years.

Dispersible tablets: 3 years

6.4 Special precautions for storage

Store below 25°C.

6.5 Nature and contents of container

Blister packs containing 30 or 90 capsules.

Blister packs containing 30 tablets.

6.6 Special precautions for disposal

Any unused medicine or waste material should be disposed of in accordance with local requirements.

7 MEDICINE SCHEDULE

Prescription Medicine

8 SPONSOR

Teva Pharma (New Zealand) Limited
PO Box 128 244
Remuera
Auckland 1541
Telephone: 0800 800 097

9 DATE OF FIRST APPROVAL

Capsules: 08 March 2012

Dispersible tablets: 17 October 2013

10 DATE OF REVISION OF THE TEXT

26 April 2019

Summary table of changes

Section Changed	Summary of new information
4.8	Weight gain added.