

**JOHN DOE**  
Specimen No: 700361  
Physician: Dr. Alice Jones

DOB: 01-01-46  
Sex: M

Sample Collection: Apr. 11, 2021 13:16 EDT  
Sample Analysis: Apr. 13, 2021 11:35 EDT

MEDICATION	DOSAGE FREQUENCY	RESULT	DDI*	INDICATION
<b>IN THE MEDICAL RECORD:</b>				
BUSPIRONE BuSpar	15 mg QD			Central nervous system agents/Anxiolytics, sedatives, and hypnotics
CITALOPRAM Celexa	10 mg BID			Psychotherapeutic agents/Antidepressants
LISINOPRIL Prinival, Zestril	20 mg			Cardiovascular agents/Angiotensin converting enzyme inhibitors
PALIPERIDONE Invega	6 mg			Psychotherapeutic agents/Antipsychotics
<b>NOT IN THE MEDICAL RECORD:</b>				
ARIPIPIRAZOLE Abilify	Unknown			Psychotherapeutic agents/Antipsychotics
FLUOXETINE Prozac	Unknown			Psychotherapeutic agents/Antidepressants
OXYMORPHONE Opana	Unknown			Central nervous system agents/Analgesics

**Result:**



Detected



Not Detected



**\*Drug-Drug Interaction (DDI):** See details on the following pages.

**Severe** - The use of these medications together is contraindicated. Rare exceptions may exist.



**Major** - The use of these medications together may be contraindicated in a select group of patients. The patient should be monitored for possible manifestations of the interaction.

**MEDICATIONS NOT IN ASSAY:**

LEVOTHYROXINE, MELATONIN

## Interaction Details

### BUSPIRONE

#### Interacting Drug CITALOPRAM

**Alert level** MAJOR

**Documentation Level** Likely Established

#### Professional Notes

Because of the potential risk and severity of serotonin syndrome or neuroleptic malignant syndrome-like reactions, caution should be observed when administering selective serotonin reuptake inhibitors (SSRIs) with other drugs that have serotonergic properties such as buspirone. Serotonin syndrome is characterized by rapid development of hyperthermia, hypertension, myoclonus, rigidity, autonomic instability, mental status changes (e.g., delirium or coma), and in rare cases, death. Serotonin syndrome, in its most severe form, can resemble neuroleptic malignant syndrome. The addition of fluoxetine to a regimen consisting of buspirone and trazodone was reported to result in an increase in anxiety-type symptoms in one patient. Another patient developed a grand mal seizure while receiving the combination of buspirone and fluoxetine. CYP3A4 inhibitors such as fluvoxamine may decrease systemic clearance of buspirone leading to increased or prolonged effects. If buspirone is to be administered concurrently with significant CYP3A4 inhibitors, a low dose of buspirone (i.e., 2.5 mg PO twice daily) is recommended initially. Subsequent dosage adjustments should be based on clinical response. Patients receiving these combinations should be monitored for the emergence of serotonin syndrome, neuroleptic malignant syndrome-like reactions, or other adverse effects.

#### Clinical Management

use combination with extreme caution :: monitor for signs of drug toxicity :: adjust drug dosage :: monitor for signs or symptoms of serotonin syndrome

#### References

Paxil(R) (paroxetine HCL) package insert. Research Triangle Park, NC: GlaxoSmithKline; 2006 July. :: Zoloft(R) (sertraline) package insert. New York, NY: Pfizer; 2003 Sept. :: Prozac(R) (fluoxetine hydrochloride). Indianapolis, IN: Eli Lilly and Company; 2003 Nov.

#### Interacting Drug FLUOXETINE

**Alert level** MAJOR

**Documentation Level** Likely Established

#### Professional Notes

Because of the potential risk and severity of serotonin syndrome or neuroleptic malignant syndrome-like reactions, caution should be observed when administering selective serotonin reuptake inhibitors (SSRIs) with other drugs that have serotonergic properties such as buspirone. Serotonin syndrome is characterized by rapid development of hyperthermia, hypertension, myoclonus, rigidity, autonomic instability, mental status changes (e.g., delirium or coma), and in rare cases, death. Serotonin syndrome, in its most severe form, can resemble neuroleptic malignant syndrome. The addition of fluoxetine to a regimen consisting of buspirone and trazodone was reported to result in an increase in anxiety-type symptoms in one patient. Another patient developed a grand mal seizure while receiving the combination of buspirone and fluoxetine. CYP3A4 inhibitors such as fluvoxamine may decrease systemic clearance of buspirone leading to increased or prolonged effects. If buspirone is to be administered concurrently with significant CYP3A4 inhibitors, a low dose of buspirone (i.e., 2.5 mg PO twice daily) is recommended initially. Subsequent dosage adjustments should be based on clinical response. Patients receiving these combinations should be monitored for the emergence of serotonin syndrome, neuroleptic malignant syndrome-like reactions, or other adverse effects.

#### Clinical Management

use combination with extreme caution :: monitor for signs of drug toxicity :: adjust drug dosage :: monitor for signs or symptoms of serotonin syndrome

#### References

Paxil(R) (paroxetine HCL) package insert. Research Triangle Park, NC: GlaxoSmithKline; 2006 July. :: Zoloft(R) (sertraline) package insert. New York, NY: Pfizer; 2003 Sept. :: Prozac(R) (fluoxetine hydrochloride). Indianapolis, IN: Eli Lilly and Company; 2003 Nov.

### CITALOPRAM

#### Interacting Drug PALIPERIDONE

**Alert level** MAJOR

**Documentation Level** Likely Established

#### Professional Notes

Concurrent use of paliperidone and citalopram should be avoided if possible. Citalopram causes dose-dependent QT interval prolongation and paliperidone is associated with a risk for QT prolongation and torsade de pointes (TdP). According to the manufacturer of citalopram, concurrent use of citalopram with other drugs that prolong the QT interval is not recommended. However, if concurrent therapy is considered essential, ECG monitoring is recommended. In addition, citalopram is a weak inhibitor of CYP2D6, and increased plasma concentrations of antipsychotics partially metabolized via CYP2D6, such as paliperidone, may occur. Decreased metabolism of paliperidone may lead to clinically important adverse reactions, such as extrapyramidal symptoms.

#### Clinical Management

use combination with extreme caution :: avoid combination unless benefit outweighs potential risk :: monitor for signs of drug toxicity :: monitor ECG :: monitor for fast, irregular heartbeat

#### References

Celexa (citalopram) package insert. Irvine, CA: Allergan USA, Inc.; 2016 Oct. :: Invega Sustenna (paliperidone palmitate injectable suspension) package insert. Titusville, NJ: Janssen Pharmaceuticals, Inc.; 2016 Mar.

#### Interacting Drug BUSPIRONE

**Alert level** MAJOR

**Documentation Level Likely Established****Professional Notes**

Because of the potential risk and severity of serotonin syndrome or neuroleptic malignant syndrome-like reactions, caution should be observed when administering selective serotonin reuptake inhibitors (SSRIs) with other drugs that have serotonergic properties such as buspirone. Serotonin syndrome is characterized by rapid development of hyperthermia, hypertension, myoclonus, rigidity, autonomic instability, mental status changes (e.g., delirium or coma), and in rare cases, death. Serotonin syndrome, in its most severe form, can resemble neuroleptic malignant syndrome. The addition of fluoxetine to a regimen consisting of buspirone and trazodone was reported to result in an increase in anxiety-type symptoms in one patient. Another patient developed a grand mal seizure while receiving the combination of buspirone and fluoxetine. CYP3A4 inhibitors such as fluvoxamine may decrease systemic clearance of buspirone leading to increased or prolonged effects. If buspirone is to be administered concurrently with significant CYP3A4 inhibitors, a low dose of buspirone (i.e., 2.5 mg PO twice daily) is recommended initially. Subsequent dosage adjustments should be based on clinical response. Patients receiving these combinations should be monitored for the emergence of serotonin syndrome, neuroleptic malignant syndrome-like reactions, or other adverse effects.

**Clinical Management**

use combination with extreme caution :: monitor for signs of drug toxicity :: adjust drug dosage :: monitor for signs or symptoms of serotonin syndrome

**References**

Paxil(R) (paroxetine HCL) package insert. Research Triangle Park, NC: GlaxoSmithKline; 2006 July. :: Zoloft(R) (sertraline) package insert. New York, NY: Pfizer; 2003 Sept. :: Prozac(R) (fluoxetine hydrochloride). Indianapolis, IN: Eli Lilly and Company; 2003 Nov.

**Interacting Drug FLUOXETINE**

**Alert level** SEVERE

**Documentation Level Established****Professional Notes**

Due to the similarity in pharmacology of fluoxetine and citalopram and the potential for serious adverse reactions, including serotonin syndrome, these selective serotonin reuptake inhibitors (SSRIs) should not be administered together. Serotonin syndrome is characterized by the rapid development of hyperthermia, hypertension, myoclonus, rigidity, autonomic instability, mental status changes (e.g., delirium or coma), and in rare cases, death. Also, both fluoxetine and citalopram have been associated with QT prolongation and torsade de pointes (TdP), which could theoretically result in additive effects on the QT interval. It is advisable to monitor for signs and symptoms of serotonin syndrome during an overlapping transition from one SSRI to another SSRI.

**Clinical Management**

never use this combination :: monitor for signs or symptoms of serotonin syndrome

**References**

Celexa (citalopram) package insert. Irvine, CA: Allergan USA, Inc.; 2016 Oct. :: Prozac (fluoxetine hydrochloride) package insert. Indianapolis, IN: Eli Lilly and Company; 2014 Oct.

**Interacting Drug ARIPIPRAZOLE**

**Alert level** MAJOR

**Documentation Level Likely Established****Professional Notes**

Because both citalopram and aripiprazole are associated with a possible risk for QT prolongation and torsade de pointes (TdP), this combination should be used cautiously and with close monitoring. In addition, citalopram is a weak inhibitor of CYP2D6, and increased plasma concentrations of antipsychotics partially metabolized via CYP2D6, such as aripiprazole, may occur. Decreased metabolism of aripiprazole may lead to clinically important adverse reactions, such as extrapyramidal symptoms.

**Clinical Management**

use combination with extreme caution :: monitor for signs of drug toxicity :: warn against driving or operating machinery or performing other hazardous tasks until drug effects are known :: monitor for fast, irregular heartbeat

**References**

Lexapro (escitalopram) package insert. Irvine, CA: Allergan USA, Inc.; 2016 Oct. :: Abilify (aripiprazole) tablets, discmelt orally-disintegrating tablets, oral solution, and intramuscular injection package insert. Princeton, NJ: Bristol-Myers Squibb Company; 2016 Aug.

**PALIPERIDONE****Interacting Drug CITALOPRAM**

**Alert level** MAJOR

**Documentation Level Likely Established****Professional Notes**

Concurrent use of paliperidone and citalopram should be avoided if possible. Citalopram causes dose-dependent QT interval prolongation and paliperidone is associated with a risk for QT prolongation and torsade de pointes (TdP). According to the manufacturer of citalopram, concurrent use of citalopram with other drugs that prolong the QT interval is not recommended. However, if concurrent therapy is considered essential, ECG monitoring is recommended. In addition, citalopram is a weak inhibitor of CYP2D6, and increased plasma concentrations of antipsychotics partially metabolized via CYP2D6, such as paliperidone, may occur. Decreased metabolism of paliperidone may lead to clinically important adverse reactions, such as extrapyramidal symptoms.

**Clinical Management**

use combination with extreme caution :: avoid combination unless benefit outweighs potential risk :: monitor for signs of drug toxicity :: monitor ECG :: monitor for fast, irregular heartbeat

**References**

Celexa (citalopram) package insert. Irvine, CA: Allergan USA, Inc.; 2016 Oct. :: Invega Sustenna (paliperidone palmitate injectable suspension) package insert. Titusville, NJ: Janssen Pharmaceuticals, Inc.; 2016 Mar.

**Interacting Drug** FLUOXETINE**Alert level** MAJOR**Documentation Level** Likely Established**Professional Notes**

According to the manufacturer of paliperidone, the drug should not be used with other drugs having an association with QT prolongation. QT prolongation and torsade de pointes (TdP) have been reported during post-marketing use of fluoxetine. In addition, fluoxetine is a potent inhibitor of CYP2D6 and its metabolite is a moderate CYP3A4 inhibitor, which may result in decreased clearance of CYP2D6 and CYP3A4 substrates including paliperidone. Decreased metabolism of paliperidone may lead to clinically important adverse reactions such as extrapyramidal symptoms. The effects of fluoxetine on the metabolism of interacting drugs may persist for several weeks after discontinuation of fluoxetine because of its long elimination half-life.

**Clinical Management**

use combination with caution :: monitor for signs of drug toxicity :: warn against driving or operating machinery or performing other hazardous tasks until drug effects are known :: monitor for fast, irregular heartbeat

**References**

Invega(TM) (paliperidone) package insert. Titusville, NJ: Janssen Pharmaceutica Products, L.P.; 2006 Dec. :: Prozac (fluoxetine hydrochloride) package insert. Indianapolis, IN: Eli Lilly and Company; 2014 Oct. :: Invega Sustenna (paliperidone palmitate injectable suspension) package insert. Titusville, NJ: Janssen Pharmaceuticals, Inc.; 2016 Mar.

**Interacting Drug** ARIPIPRAZOLE**Alert level** MAJOR**Documentation Level** Likely Established**Professional Notes**

QT prolongation has occurred during therapeutic use of aripiprazole and following overdose. Paliperidone is an atypical antipsychotic with a possible risk for QT prolongation and TdP that should be used cautiously and with close monitoring with aripiprazole. In addition, caution is advisable when aripiprazole is given in combination with other CNS depressants such as other atypical antipsychotics. The risk of drowsiness, dizziness, hypotension, extrapyramidal symptoms, anticholinergic effects, neuroleptic malignant syndrome, tardive dyskinesia, or seizures may be increased during combined use; therefore, it may be advisable to initiate treatment with lower dosages if combination therapy is deemed necessary. The likelihood of these pharmacodynamic interactions varies based upon the individual properties of the co-administered antipsychotic agent.

**Clinical Management**

use combination with extreme caution :: warn against driving or operating machinery or performing other hazardous tasks until drug effects are known :: monitor for fast, irregular heartbeat

**References**

Invega(TM) (paliperidone) package insert. Titusville, NJ: Janssen Pharmaceutica Products, L.P.; 2006 Dec. :: Woods SW, Morgenstern H, Saksa JR, et al. Incidence of tardive dyskinesia with atypical versus conventional antipsychotic medications: a prospective cohort study. J Clin Psychiatry. 2010;71(4):463-74. Epub 2010 Feb 9. :: Abilify (aripiprazole) tablets, discmelt orally-disintegrating tablets, oral solution, and intramuscular injection package insert. Princeton, NJ: Bristol-Myers Squibb Company; 2016 Aug.

## ARIPIPRAZOLE

**Interacting Drug** CITALOPRAM**Alert level** MAJOR**Documentation Level** Likely Established**Professional Notes**

Because both citalopram and aripiprazole are associated with a possible risk for QT prolongation and torsade de pointes (TdP), this combination should be used cautiously and with close monitoring. In addition, citalopram is a weak inhibitor of CYP2D6, and increased plasma concentrations of antipsychotics partially metabolized via CYP2D6, such as aripiprazole, may occur. Decreased metabolism of aripiprazole may lead to clinically important adverse reactions, such as extrapyramidal symptoms.

**Clinical Management**

use combination with extreme caution :: monitor for signs of drug toxicity :: warn against driving or operating machinery or performing other hazardous tasks until drug effects are known :: monitor for fast, irregular heartbeat

**References**

Lexapro (escitalopram) package insert. Irvine, CA: Allergan USA, Inc.; 2016 Oct. :: Abilify (aripiprazole) tablets, discmelt orally-disintegrating tablets, oral solution, and intramuscular injection package insert. Princeton, NJ: Bristol-Myers Squibb Company; 2016 Aug.

**Interacting Drug** PALIPERIDONE**Alert level** MAJOR**Documentation Level** Likely Established**Professional Notes**

QT prolongation has occurred during therapeutic use of aripiprazole and following overdose. Paliperidone is an atypical antipsychotic with a possible risk for QT prolongation and TdP that should be used cautiously and with close monitoring with aripiprazole. In addition, caution is advisable when aripiprazole is given in combination with other CNS depressants such as other atypical antipsychotics. The risk of drowsiness, dizziness, hypotension, extrapyramidal symptoms, anticholinergic effects, neuroleptic malignant syndrome, tardive dyskinesia, or seizures may be increased during combined use; therefore, it may be advisable to initiate treatment with lower dosages if combination therapy is deemed necessary. The likelihood of these pharmacodynamic interactions varies based upon the individual properties of the co-administered antipsychotic agent.

**Clinical Management**

use combination with extreme caution :: warn against driving or operating machinery or performing other hazardous tasks until drug effects are known :: monitor for fast, irregular heartbeat

**References**

Invega(TM) (paliperidone) package insert. Titusville, NJ: Janssen Pharmaceutica Products, L.P.; 2006 Dec. :: Woods SW, Morgenstern H, Saksa JR, et al. Incidence of tardive dyskinesia with atypical versus conventional antipsychotic medications: a prospective cohort study. *J Clin Psychiatry*. 2010;71(4):463-74. Epub 2010 Feb 9. :: Abilify (aripiprazole) tablets, disintegrating tablets, oral solution, and intramuscular injection package insert. Princeton, NJ: Bristol-Myers Squibb Company; 2016 Aug.

## Interacting Drug FLUOXETINE

**Alert level** MAJOR

**Documentation Level** Likely Established

### Professional Notes

Because both fluoxetine and aripiprazole are associated with a possible risk for QT prolongation and torsade de pointes (TdP), the combination should be used cautiously and with close monitoring. In addition, fluoxetine is a potent inhibitor of CYP2D6 and its metabolite is a moderate CYP3A4 inhibitor, which may result in decreased clearance of atypical antipsychotics that are CYP2D6 and CYP3A4 substrates including aripiprazole. Decreased metabolism of aripiprazole may lead to clinically important adverse reactions that are associated with antipsychotic use, such as extrapyramidal symptoms. The manufacturer recommends that the oral aripiprazole dose be reduced by one-half when co-administered with potent inhibitors of CYP3A4 or inhibitors of CYP2D6. In adult patients receiving 300 mg or 400 mg of the extended-release injection, dose reductions to 200 mg or 300 mg, respectively, are recommended if a potent CYP2D6 inhibitor or CYP3A4 inhibitor is used for more than 14 days. Patients receiving a combination of a CYP3A4 and CYP2D6 inhibitor for more than 14 days should have their extended-release intramuscular dose reduced from 400 mg/month to 200 mg/month or from 300 mg/month to 160 mg/month, respectively. Because fluoxetine and its metabolite norfluoxetine inhibit both CYP3A4 and CYP2D6, a further reduction in aripiprazole dosage may be clinically warranted in some patients. It should be noted that aripiprazole dosage adjustments are not required when it is added as adjunctive treatment to antidepressants for major depressive disorder, provided that the manufacturer's dosing guidelines for this indication are followed. Currently available data indicate no clinically significant pharmacokinetic changes to fluoxetine with coadministration. The effects of fluoxetine on the metabolism of interacting drugs may persist for several weeks after discontinuation of fluoxetine because of its long elimination half-life.

### Clinical Management

use combination with extreme caution :: monitor for signs of drug toxicity :: decrease drug dosage :: monitor for fast, irregular heartbeat

### References

Prozac (fluoxetine hydrochloride) package insert. Indianapolis, IN: Eli Lilly and Company; 2014 Oct. :: Abilify (aripiprazole) tablets, disintegrating tablets, oral solution, and intramuscular injection package insert. Princeton, NJ: Bristol-Myers Squibb Company; 2016 Aug.

## FLUOXETINE

## Interacting Drug CITALOPRAM

**Alert level** SEVERE

**Documentation Level** Established

### Professional Notes

Due to the similarity in pharmacology of fluoxetine and citalopram and the potential for serious adverse reactions, including serotonin syndrome, these selective serotonin reuptake inhibitors (SSRIs) should not be administered together. Serotonin syndrome is characterized by the rapid development of hyperthermia, hypertension, myoclonus, rigidity, autonomic instability, mental status changes (e.g., delirium or coma), and in rare cases, death. Also, both fluoxetine and citalopram have been associated with QT prolongation and torsade de pointes (TdP), which could theoretically result in additive effects on the QT interval. It is advisable to monitor for signs and symptoms of serotonin syndrome during an overlapping transition from one SSRI to another SSRI.

### Clinical Management

never use this combination :: monitor for signs or symptoms of serotonin syndrome

### References

Celexa (citalopram) package insert. Irvine, CA: Allergan USA, Inc.; 2016 Oct. :: Prozac (fluoxetine hydrochloride) package insert. Indianapolis, IN: Eli Lilly and Company; 2014 Oct.

## Interacting Drug PALIPERIDONE

**Alert level** MAJOR

**Documentation Level** Likely Established

### Professional Notes

According to the manufacturer of paliperidone, the drug should not be used with other drugs having an association with QT prolongation. QT prolongation and torsade de pointes (TdP) have been reported during post-marketing use of fluoxetine. In addition, fluoxetine is a potent inhibitor of CYP2D6 and its metabolite is a moderate CYP3A4 inhibitor, which may result in decreased clearance of CYP2D6 and CYP3A4 substrates including paliperidone. Decreased metabolism of paliperidone may lead to clinically important adverse reactions such as extrapyramidal symptoms. The effects of fluoxetine on the metabolism of interacting drugs may persist for several weeks after discontinuation of fluoxetine because of its long elimination half-life.

### Clinical Management

use combination with caution :: monitor for signs of drug toxicity :: warn against driving or operating machinery or performing other hazardous tasks until drug effects are known :: monitor for fast, irregular heartbeat

### References

Invega(TM) (paliperidone) package insert. Titusville, NJ: Janssen Pharmaceutica Products, L.P.; 2006 Dec. :: Prozac (fluoxetine hydrochloride) package insert. Indianapolis, IN: Eli Lilly and Company; 2014 Oct. :: Invega Sustenna (paliperidone palmitate injectable suspension) package insert. Titusville, NJ: Janssen Pharmaceuticals, Inc.; 2016 Mar.

## Interacting Drug BUSPIRONE

**Alert level** MAJOR

**Documentation Level** Likely Established

### Professional Notes

Because of the potential risk and severity of serotonin syndrome or neuroleptic malignant syndrome-like reactions, caution should be observed when administering selective serotonin reuptake

inhibitors (SSRIs) with other drugs that have serotonergic properties such as buspirone. Serotonin syndrome is characterized by rapid development of hyperthermia, hypertension, myoclonus, rigidity, autonomic instability, mental status changes (e.g., delirium or coma), and in rare cases, death. Serotonin syndrome, in its most severe form, can resemble neuroleptic malignant syndrome. The addition of fluoxetine to a regimen consisting of buspirone and trazodone was reported to result in an increase in anxiety-type symptoms in one patient. Another patient developed a grand mal seizure while receiving the combination of buspirone and fluoxetine. CYP3A4 inhibitors such as fluvoxamine may decrease systemic clearance of buspirone leading to increased or prolonged effects. If buspirone is to be administered concurrently with significant CYP3A4 inhibitors, a low dose of buspirone (i.e., 2.5 mg PO twice daily) is recommended initially. Subsequent dosage adjustments should be based on clinical response. Patients receiving these combinations should be monitored for the emergence of serotonin syndrome, neuroleptic malignant syndrome-like reactions, or other adverse effects.

### Clinical Management

use combination with extreme caution :: monitor for signs of drug toxicity :: adjust drug dosage :: monitor for signs or symptoms of serotonin syndrome

### References

Paxil(R) (paroxetine HCL) package insert. Research Triangle Park, NC: GlaxoSmithKline; 2006 July. :: Zoloft(R) (sertraline) package insert. New York, NY: Pfizer; 2003 Sept. :: Prozac(R) (fluoxetine hydrochloride). Indianapolis, IN: Eli Lilly and Company; 2003 Nov.

## Interacting Drug ARIPIPRAZOLE

**Alert level** MAJOR

**Documentation Level** Likely Established

### Professional Notes

Because both fluoxetine and aripiprazole are associated with a possible risk for QT prolongation and torsade de pointes (TdP), the combination should be used cautiously and with close monitoring. In addition, fluoxetine is a potent inhibitor of CYP2D6 and its metabolite is a moderate CYP3A4 inhibitor, which may result in decreased clearance of atypical antipsychotics that are CYP2D6 and CYP3A4 substrates including aripiprazole. Decreased metabolism of aripiprazole may lead to clinically important adverse reactions that are associated with antipsychotic use, such as extrapyramidal symptoms. The manufacturer recommends that the oral aripiprazole dose be reduced by one-half when co-administered with potent inhibitors of CYP3A4 or inhibitors of CYP2D6. In adult patients receiving 300 mg or 400 mg of the extended-release injection, dose reductions to 200 mg or 300 mg, respectively, are recommended if a potent CYP2D6 inhibitor or CYP3A4 inhibitor is used for more than 14 days. Patients receiving a combination of a CYP3A4 and CYP2D6 inhibitor for more than 14 days should have their extended-release intramuscular dose reduced from 400 mg/month to 200 mg/month or from 300 mg/month to 160 mg/month, respectively. Because fluoxetine and its metabolite norfluoxetine inhibit both CYP3A4 and CYP2D6, a further reduction in aripiprazole dosage may be clinically warranted in some patients. It should be noted that aripiprazole dosage adjustments are not required when it is added as adjunctive treatment to antidepressants for major depressive disorder, provided that the manufacturer's dosing guidelines for this indication are followed. Currently available data indicate no clinically significant pharmacokinetic changes to fluoxetine with coadministration. The effects of fluoxetine on the metabolism of interacting drugs may persist for several weeks after discontinuation of fluoxetine because of its long elimination half-life.

### Clinical Management

use combination with extreme caution :: monitor for signs of drug toxicity :: decrease drug dosage :: monitor for fast, irregular heartbeat

### References

Prozac (fluoxetine hydrochloride) package insert. Indianapolis, IN: Eli Lilly and Company; 2014 Oct. :: Abilify (aripiprazole) tablets, discolored orally-disintegrating tablets, oral solution, and intramuscular injection package insert. Princeton, NJ: Bristol-Myers Squibb Company; 2016 Aug.

## Interacting Drug OXYMORPHONE

**Alert level** MAJOR

**Documentation Level** Likely Established

### Professional Notes

Fluoxetine may inhibit the metabolism of oxymorphone. Clinicians should be alert for an exaggerated opiate response if oxymorphone is given with fluoxetine.

### Clinical Management

use combination with caution :: monitor patient clinically

### References

Hansten P, Horn J. The Top 100 Drug Interactions: A Guide to Patient Management. includes table of CYP450 and drug transporter substrates and modifiers (appendices). H & H Publications, LLP 2014 edition. :: Prozac(R) (fluoxetine hydrochloride). Indianapolis, IN: Eli Lilly and Company; 2003 Nov.

## OXYMORPHONE

## Interacting Drug FLUOXETINE

**Alert level** MAJOR

**Documentation Level** Likely Established

### Professional Notes

Fluoxetine may inhibit the metabolism of oxymorphone. Clinicians should be alert for an exaggerated opiate response if oxymorphone is given with fluoxetine.

### Clinical Management

use combination with caution :: monitor patient clinically

### References

Hansten P, Horn J. The Top 100 Drug Interactions: A Guide to Patient Management. includes table of CYP450 and drug transporter substrates and modifiers (appendices). H & H Publications, LLP 2014 edition. :: Prozac(R) (fluoxetine hydrochloride). Indianapolis, IN: Eli Lilly and Company; 2003 Nov.