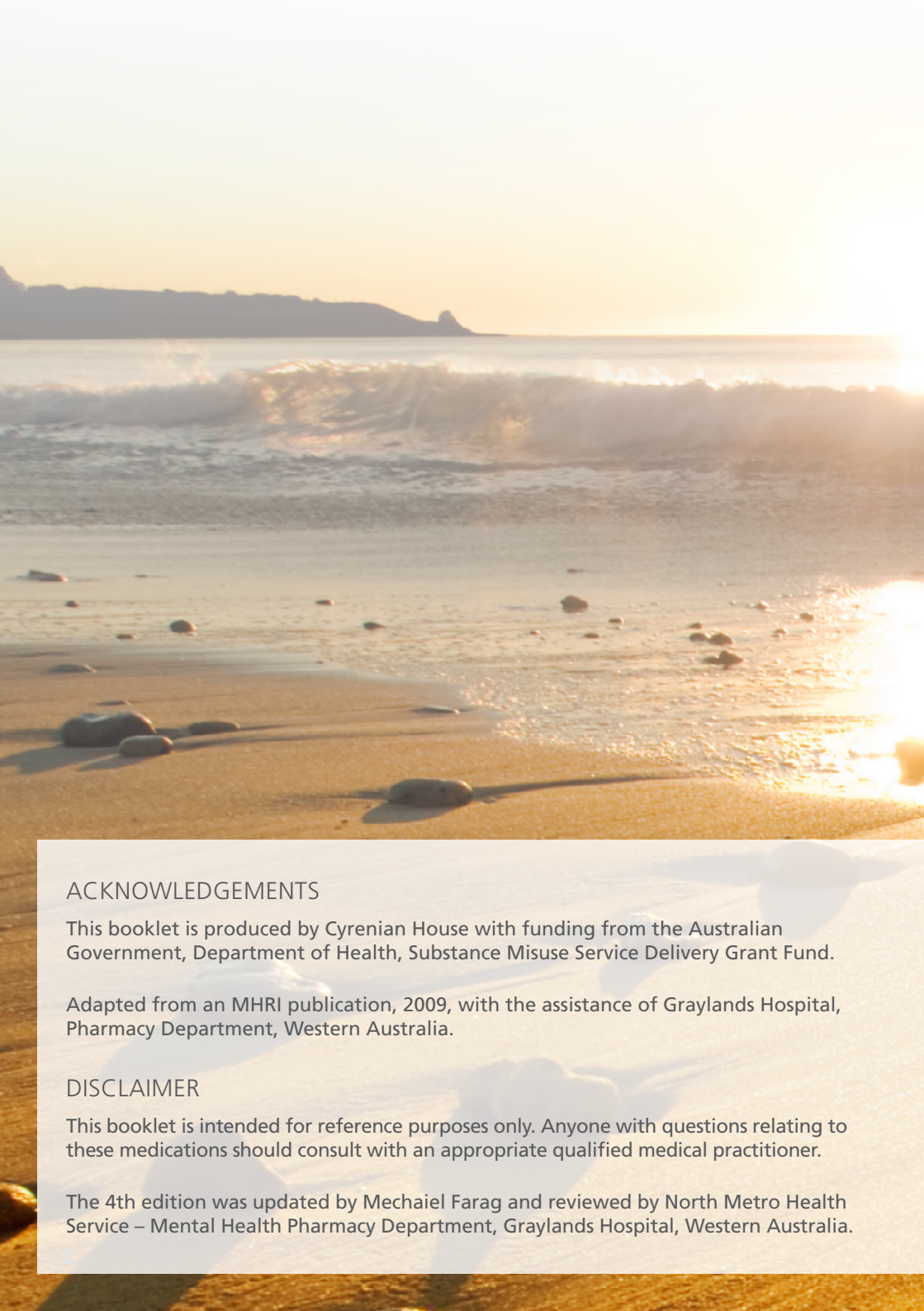


3RD EDITION
JULY 2020

Medication Handbook

PSYCHOTROPIC

A Guide To Medications
Used in Mental Health



ACKNOWLEDGEMENTS

This booklet is produced by Cyrenian House with funding from the Australian Government, Department of Health, Substance Misuse Service Delivery Grant Fund.

Adapted from an MHRI publication, 2009, with the assistance of Graylands Hospital, Pharmacy Department, Western Australia.

DISCLAIMER

This booklet is intended for reference purposes only. Anyone with questions relating to these medications should consult with an appropriate qualified medical practitioner.

The 4th edition was updated by Mechaïel Farag and reviewed by North Metro Health Service – Mental Health Pharmacy Department, Graylands Hospital, Western Australia.

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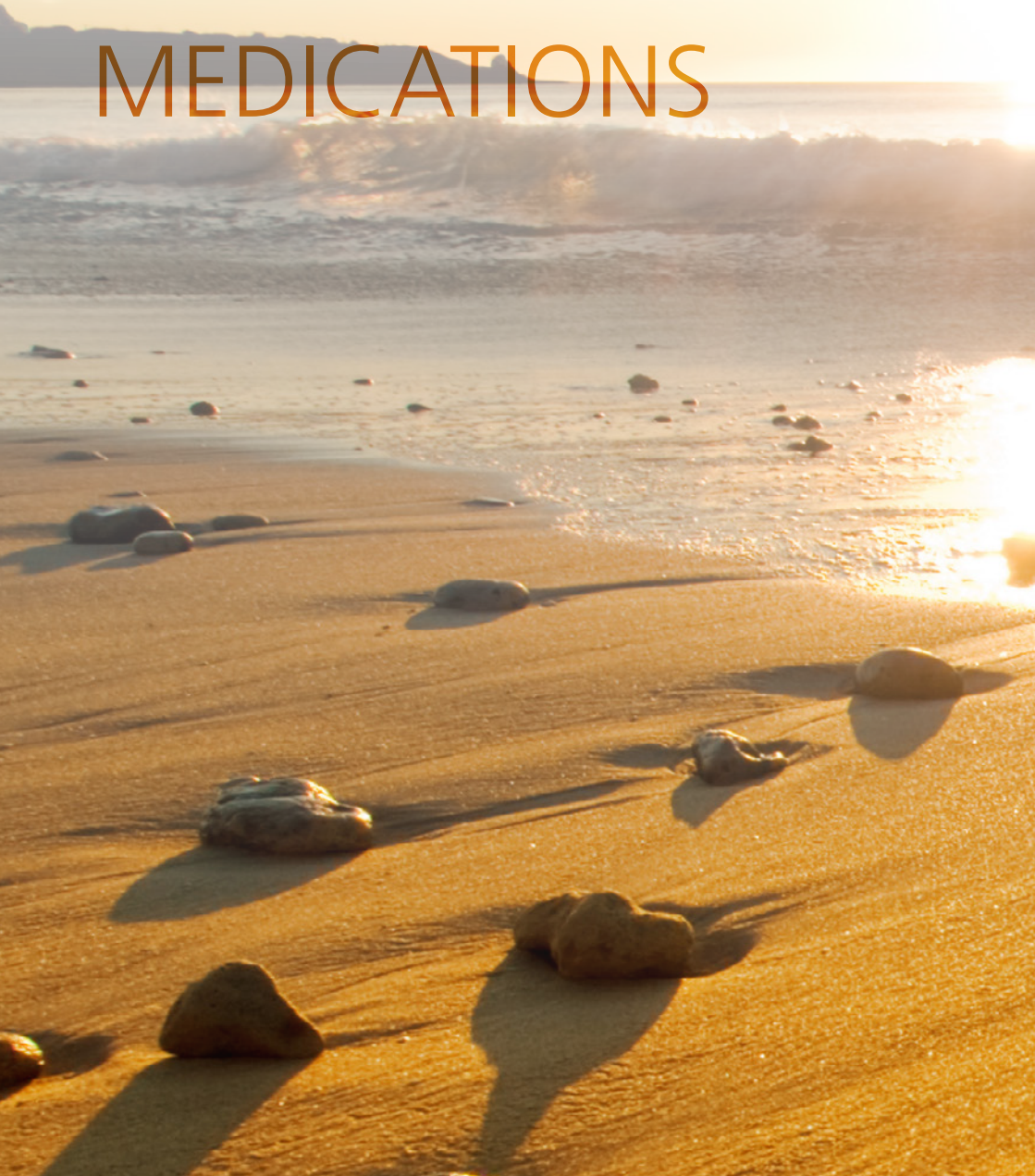
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COMMONLY USED PSYCHOTROPIC MEDICATIONS



Antipsychotics

Also known as Neuroleptics and Major Tranquilisers

How Do They Work?

Antipsychotics help to restore the brain's balance of natural chemicals, mainly dopamine but also serotonin, noradrenaline, histamine and acetylcholine. Dopamine is thought to be the main chemical affected and antipsychotics can reduce or eliminate psychotic symptoms such as hallucinations, delusions and disorganised thinking. Antipsychotics begin to relieve agitation and sleep disturbance in a few days, while substantial improvement in psychosis should be seen after 4-6 weeks of treatment.

There are two groups of antipsychotic medications:

- **Typical Antipsychotics** are older agents that are less popular nowadays due to increased likelihood of causing extrapyramidal side effects such as muscle spasm, rigidity, tremors, and restlessness. These are also known as First Generation Antipsychotics.
- **Atypical Antipsychotics** are newer agents that generally cause fewer extrapyramidal side and after effects (EPSE). These are also known as Second Generation Antipsychotics.

Antipsychotic General Information

All antipsychotics generally cause sedation. If affected, patients should not drive a car or operate machinery. Care should be taken with other central nervous system depressants, including alcohol.

Typical Antipsychotics

DRUG NAME	GENERIC NAME	FORMULATION AVAILABLE
<i>Chlorpromazine</i>	Largactil	Tablet, liquid, short-acting injection (inj not used commonly)
<i>Droperidol</i>	Droleptan	Short acting injection
<i>Flupenthixol</i>	Fluanxol	Long-acting injection
<i>Haloperidol</i>	Serenace (oral), Haldol (inj)	Tablet, liquid, short-acting injection, long-acting injection
<i>Pericyazine</i>	Neulactil	Tablet
<i>Zuclopenthixol*</i>	Clopixol	Tablet, intermediate-acting injection, long-acting injection

Common Side effects:

Sedation, dizziness, extrapyramidal side effects (drug-induced parkinsonism, muscle spasms, muscle rigidity, restlessness), dry mouth, blurred vision, urinary retention, constipation, sensitivity to sunlight (especially chlorpromazine), high prolactin levels (results in sexual dysfunction, menstrual irregularity, breast growth/lactation, osteoporosis).

Acuphase

*Zuclopenthixol is available in an intermediate-acting injection known as "Acuphase". This refers to its brand name, Clopixol Acuphase. This injection has a duration of effect of 24-72 hours. It is sometimes used for highly agitated people as it has an antipsychotic and markedly sedating effect. For this reason it is only used in hospitals.

The long-acting injection form of zuclopenthixol is often referred to as the "depot" form. Its effect has a duration of two weeks (up to four weeks).

Atypical Antipsychotics

Atypical antipsychotics are distinguished from typical antipsychotics by their clinical properties – a low incidence of extrapyramidal side effects (EPSE) and improved efficacy for treating negative symptoms.

DRUG NAME	BRAND NAME	FORMULATION AVAILABLE
<i>Amisulpride</i>	Solian	Tablet, liquid
<i>Aripiprazole</i>	Abilify	Tablet
<i>Asenapine</i>	Saphris	Wafer (dissolved in mouth)
<i>Brexipiprazole</i>	Rexult	Tablet
<i>Clozapine</i>	Clopine, Clozaril	Tablet, liquid
<i>Lurasidone</i>	Latuda	Tablet
<i>Olanzapine</i>	Zyprexa, Lanzek, Ozin, Zylap, Zypine	Tablet, wafer, short-acting injection, long-acting injection
<i>Paliperidone</i>	Invega	Tablet, long-acting injection
<i>Quetiapine</i>	Seroquel, Delucon, Quetiaccord, Sequase, Seronia, Syquet	Tablet, controlled release tablet
<i>Risperidone</i>	Risperdal, Resdone, Rispa, Ozidal	Tablet, wafer, liquid, long-acting injection
<i>Ziprasidone</i>	Zeldox	Tablet, short-acting injection

Common side effects:

Atypical antipsychotics generally produce fewer extrapyramidal side effects compared to typical antipsychotics. The side effect profile of these medications may be more tolerable, but differ depending on the agent used.

Amisulpride

Relatively non-sedating antipsychotic agent indicated for schizophrenia. Associated with little weight gain, but can cause high prolactin levels. Doses 400mg/day and above are given in divided doses (i.e. 200mg twice daily).

Common side effects:

Insomnia, agitation, sexual dysfunction, menstrual irregularities, movement disorders.

Aripiprazole

Relatively non-sedating antipsychotic, usually taken in the morning, which is used for schizophrenia and bipolar disorder. Mechanism of action is different to other antipsychotics. Has little effect on weight and prolactin.

Common side effects:

Headache, nausea, agitation, insomnia.

Asenapine

Antipsychotic indicated for the treatment of schizophrenia and bipolar disorder. Recommended to be taken twice daily.

Available as a sublingual (under the tongue) wafer that must be dissolved in the mouth. The medication is absorbed through the mouth, not the gut. Patients cannot eat or drink for 10 minutes after taking asenapine as it reduces drug absorption.

Common side effects:

Bitter taste, oral numbness, agitation, sedation, dizziness.

Brexipiprazole

Indicated for the treatment of schizophrenia. Similar to aripiprazole in its mechanism of action and effects but may cause less adverse effects, including less agitation.

Common side effects:

Dyspepsia (indigestion), insomnia, agitation.

Clozapine

Clozapine is only indicated for treatment-resistant schizophrenia. It is an effective treatment but because of its potential to cause severe adverse effects, there are very strict monitoring requirements for all patients on clozapine. The monitoring protocol is designed to detect any potential serious adverse effects before they occur (or at their early stages) so they may be prevented or halted. Patients are also monitored for less serious adverse effect so they may be minimised or managed. Clozapine is always commenced under specialist supervision and the dose is very gradually increased to minimise dose-related adverse effects.

Common side effects:

Clozapine can also cause other serious adverse effects including myocarditis and cardiomyopathy (heart conditions). The doctor monitors chest pain, shortness of breath, temperature and heart rate.

Other adverse effects caused by clozapine include weight gain (+++), sedation, hypersalivation (excess drooling), constipation, seizures and nocturnal enuresis (bed wetting).

Treatment of clozapine-specific adverse effects:

SIDE EFFECT	TREATMENT
Low white blood cells (WBCs)	Detected through blood test. Clinical signs include flu-like symptoms such as fever and sore throat. More frequent blood monitoring may be required. If the WBC level falls too low clozapine is ceased.
Excess salivation (drooling)	Generally occurs in the first few months but may persist, particularly problematic at night. For review by doctor – treatment options include dose reduction if appropriate, hyoscine (Kwells [®]), prescribing an anticholinergic (e.g. benztropine).
Tachycardia (fast heart beat)	Very common in early stages of treatment, usually not serious. Consult medical advice if chest pain, fever or low blood pressure also occurs.
Nocturnal enuresis (bed wetting)	Try manipulating dosage schedule so more of the dose is taken in the morning. Avoid fluids before bedtime, try routine night time awakenings. If still ineffective, medication can be used to treat it.
Seizures	Risk of seizures is associated with dose and drug concentration in the body. If seizure occurs and clozapine treatment is still required, consider prescribing anti-convulsant medication (e.g. sodium valproate)
Constipation	Increase dietary fibre and fluid intake. If constipation is still present, consider treatment with laxatives. Clozapine-induced constipation can be very severe and has caused fatalities – always treat.
Weight gain	Usually occurs in the first years of treatment. Dietary counselling before weight gain occurs is essential. Prevention is better than treatment. Monitor/alter diet and exercise

Lurasidone

Used for the treatment of schizophrenia. Recommended to be taken once a day. Must be taken with a meal to increase absorption of the medication. Low incidence of sedation or weight gain.

Common side effects:

Sedation or insomnia, agitation, movement disorders, nausea.

Olanzapine

Commonly used antipsychotic indicated for schizophrenia and bipolar disorder that is generally well tolerated. May cause significant weight gain.

Common side effects:

Sedation, weight gain, dizziness, dry mouth, constipation, skin sensitivity to sunlight.

Paliperidone

Paliperidone is used to treat schizophrenia and is the active metabolite of risperidone. Therefore, efficacy and tolerability of paliperidone is expected to be similar to risperidone. Oral formulation is a slow release tablet that should be taken once daily swallowed whole.

Common side effects:

Dizziness, weight gain, sexual dysfunction, menstrual irregularities, agitation, movement disorders.

Quetiapine

Available as immediate release (IR) tablets and modified release (XR) tablets. IR tablets generally taken 2 to 3 times daily; XR tablets taken once daily in the evening and should be swallowed whole.

Used in the treatment of schizophrenia, bipolar disorder, major depressive disorder and generalised anxiety disorder. Single night time doses often used to aid sleep.

Some potential for abuse. Movement disorders are rare.

Common adverse effects:

Sedation, weight gain, dizziness, fast heart rate.

Risperidone

Commonly used antipsychotic which can cause movement side effects at higher doses. Indicated for use in schizophrenia and bipolar disorder.

It may also be used for behavioural disorders in other conditions such as autism.

Common adverse effects:

Dizziness, weight gain, sexual dysfunction, menstrual irregularities, agitation, movement disorders.

Ziprasidone

Indicated for the treatment of schizophrenia and acute mania. Must be taken with meals to increase absorption of the medication. Recommended to be taken twice daily. Low incidence of movement disorders, weight gain and sexual dysfunction. The potential to cause arrhythmias is a concern with ziprasidone.

Common adverse effects:

Dizziness, sedation, arrhythmias, weight gain.

Long-Acting (depot) Injections

Long-acting antipsychotic injections, also called “depots”, deliver antipsychotic medication over an extended period of time, releasing medication gradually from the injection site. They are usually administered every 2 to 4 weeks.

Aliperidone palmitate is available as a monthly or 3-monthly long-acting injection.

The major advantages of long-acting injections are assured compliance and steady plasma levels, which are associated with reduced relapse rates.

Major disadvantages are the inability to change the dose or cease the antipsychotic once it is administered, patients feeling as though they are “being controlled” and also the pain at injection site.

Antipsychotic long-acting injections available in Australia:

TYPICAL ANTIPSYCHOTICS	ATYPICAL ANTIPSYCHOTICS
<i>Flupenthixol decanoate</i>	<i>Aripiprazole monohydrate</i>
<i>Haloperidol decanoate</i>	<i>Olanzapine pamoate</i>
<i>Zuclopenthixol decanoate</i>	<i>Paliperidone palmitate</i>
	<i>Risperidone</i>

Monthly paliperidone palmitate

Paliperidone palmitate is the only long-acting injection that has an accepted loading dose regimen.

Paliperidone palmitate is given as a 150mg injection on day 1, followed by a 100mg injection on day 8 and then the regular dose is given every 28 days after that.

3-Monthly paliperidone palmitate

It is recommended for the patient to be stable on paliperidone palmitate monthly injection for four months before switching to the 3-monthly injection.

Treatment of Antipsychotic Adverse Effects

There are different ways of managing any adverse effects that antipsychotic medications may cause. The following table describes some of those management strategies. If such strategies are not adequate to manage the adverse effect, a doctor should be consulted.

SIDE EFFECT	TREATMENT
Akathisia (internal restlessness)	Seek medical advice. The doctor may consider reducing the antipsychotic dose (if clinically appropriate) or treat the akathisia with medication.
Constipation	Increase fibre & fluid intake, increase exercise. If not effective, laxatives (e.g. Coloxyl with Senna) may be required as it can be a persistent problem. For clozapine associated constipation, treatment should be more aggressive and stimulant laxatives are first line.

SIDE EFFECT	TREATMENT
Muscle stiffness, tremor	Seek medical advice. The doctor may consider reducing the antipsychotic dose (if clinically appropriate) or treat it with medication.
Weight gain	Prevention is better than treatment. Maintaining a healthy diet with regular exercise is important. Weight gain most profound with clozapine and olanzapine.
Dizziness	Usually does not persist for more than a couple of weeks at the start of treatment. Dizziness is more likely to happen upon standing from a seated/lying position. If it occurs sit back down, wait a moment, then slowly stand up again.
Nausea	Usually only present for the first few weeks. Take medication with food; if nausea persists, seek medical advice. The doctor may consider treating it with medication.
Dry mouth	Try sucking ice, sugarless chewing gum, and taking small sips of water with a bit a lemon juice in it. If not successful, artificial saliva products can be obtained from a pharmacy. Avoid drinking sugary drinks (e.g. soft drinks, juice).
Sedation	Take most of the dose at night if possible. If not successful, seek medical advice.

Anticholinergics

Anticholinergic drugs are principally used in the treatment of Parkinson's Disease, but are used in psychiatry for the treatment of extra pyramidal side effects (EPSE).

Anticholinergics are subject to abuse, therefore doses and quantities prescribed are limited to avoid misuse. They can cause hallucinations, elation and cognitive impairment.

DRUG NAME	BRAND NAME	COMMENTS
Trixyphenidyl (Benzhexol)	Artane	More likely to be abused than benztropine.
Benztropine (benztropine)	Benztrop, Cogentin	More commonly used than benzhexol. Available in tablet and injection, which can be given intramuscularly (IM) or intravenously (IV)

Common side effects:

Sedation, dry mouth, constipation, blurred vision, dry eyes, urinary retention.

Extra Pyramidal Side Effects

EPSEs are movement-related side effects that can occur as a result of antipsychotic use, occurring due to the medications effect at the dopamine receptor.

	SIGNS AND SYMPTOMS	TREATMENT
Akathisia	<ul style="list-style-type: none"> • Unpleasant state of internal restlessness where there is a strong desire or compulsion to move • Foot stamping when seated • Constantly crossing/uncrossing legs • Rocking from foot to foot • Constantly pacing up and down <p><i>Note: can be mistaken for psychotic agitation</i></p>	<p>Consult your doctor; if appropriate, your doctor may:</p> <ul style="list-style-type: none"> • Reduce dose of antipsychotic • Switch to atypical agent • Consider using: <ul style="list-style-type: none"> – Propranolol – Clonazepam – Mirtazapine – Cyproheptadine • Anticholinergics are generally unhelpful
Parkinsonism	<ul style="list-style-type: none"> • Tremor • Rigidity • Bradykinesia – slow body movements, decreased facial expression, monotone voice • Shuffling gait (walk), reduced arm swing 	<p>Consult your doctor; if appropriate, your doctor may:</p> <ul style="list-style-type: none"> • Reduce dose of antipsychotic • Use atypical agent • Prescribe anticholinergic agent
Dystonia	<ul style="list-style-type: none"> • Muscle spasm in any part of the body, e.g. <ul style="list-style-type: none"> – Eyes rolling upwards (occulogyric crisis) – Head and neck twisted to the side (torticollis) • Patient may be unable to speak or swallow clearly • Can be painful and frightening 	<p>Consult your doctor; if appropriate, your doctor may:</p> <ul style="list-style-type: none"> • Immediate treatment with anticholinergic drug given orally, IM or IV depending on severity • Switch to atypical antipsychotic with low incidence of EPSE

Tardive dyskinesia

- ***May be irreversible***
- Lip smacking or chewing
- Tongue protrusion (fly catching)
- Choreiform hand movements (pill rolling or piano playing)

Consult your doctor;
if appropriate, your doctor may:

- **Stop anticholinergic**
- Reduce dose/stop antipsychotic
- Switch to atypical anti-psychotic – clozapine and quetiapine may help with resolution of symptoms

Antidepressants

How do they work

Antidepressants are used to treat major depressive disorder and the symptoms of depression, such as loss of pleasure in activities, feelings of despair or guilt, low mood and loss of energy. All antidepressants can treat depression, however, not all depression sufferers will respond to treatment equally.

The symptoms of depression are thought to be caused by an imbalance in brain chemicals, namely serotonin and noradrenaline. Antidepressants work by increasing the levels of these chemicals in the brain.

It may take a few weeks for antidepressants to have the desired effect on mood, so it is important to continue taking the antidepressant to allow it to work. Some side effects, such as headache and dizziness, may appear initially but usually subside.

All antidepressants are considered to be equally effective, though individuals will respond to them differently in terms of efficacy and side effects. First-line antidepressants are generally better tolerated in regards to adverse effects and are safer in overdose (when taken as a single agent) compared to second-line antidepressants.

Antidepressants are also used to treat anxiety disorders such as generalised anxiety disorder, social phobia, obsessive-compulsive disorder and post-traumatic stress disorder.

When ceasing antidepressants, reduce the dose slowly over weeks to months.

DO NOT CEASE ANTIDEPRESSANTS ABRUPTLY as they can cause discontinuation symptoms.

Withdrawal symptoms include: dizziness, lethargy, nausea, vomiting, headache, diarrhoea, fever, sweating, "electric-shock-like" sensations, anxiety irritability, and confusion. These are most likely to occur within 1-7 days, typically disappears within 3 weeks. To manage withdrawal symptoms, re-instate antidepressant and taper dose more slowly.

Antidepressants are associated with restlessness or agitation prior to seeing any change in depression symptoms. This agitation may be associated with hostility or suicidal thoughts.

Risk of suicide should be closely assessed and monitored during the first weeks of antidepressant therapy.

First Line Antidepressants

Selective Serotonin Reuptake Inhibitors (SSRIs)

Commonly used antidepressant class that is generally well tolerated, and relatively safe in overdose if taken as a single agent. They should be taken once daily in the morning (fluvoxamine may cause sedation and can be prescribed at night).

Common adverse effects:

- Headache, nausea, dizziness, irritability – usually present at initiation but generally subsides over time
- Sleep disturbance (take dose in the morning).
- Sexual dysfunction – decreased arousal, erectile dysfunction, delayed orgasm.

DRUG NAME	BRAND NAME	COMMENTS
Citalopram	Cipramil	In high doses, it may cause cardiac effects (increased risk of arrhythmias) at high doses. In such cases, your doctor may monitor your electrocardiogram (ECG).
Escitalopram	Lexapro	Escitalopram is the active isomer of citalopram.
Fluoxetine	Prozac	Least likely to cause discontinuation symptoms.
Fluvoxamine	Luvox	Can make some people drowsy, therefore can be taken at night if this occurs.
Paroxetine	Aropax	Most likely of the SSRIs to cause discontinuation symptoms.
Sertraline	Zoloft	

Serotonin and Noradrenaline Reuptake Inhibitors (SNRIs)

Commonly used antidepressants, may have faster onset of action and increase energy more than SSRIs. They should be taken once daily in the morning. More toxic in overdose than SSRIs.

Common adverse effects:

Headache, dizziness, nausea.

- Sexual dysfunction – decreased libido, erectile dysfunction, delayed orgasm.

DRUG NAME	BRAND NAME	COMMENTS
Desvenlafaxine	Pristiq	Desvenlafaxine is the active metabolite of venlafaxine, therefore similar efficacy and side effects are expected. Desvenlafaxine has fewer drug interactions than venlafaxine.
Duloxetine	Cymbalta	Duloxetine should not be given to individuals with chronic liver disease or excessive alcohol consumption.
Venlafaxine	Efexor-XR	Doses >225mg can increase blood pressure.

Noradrenergic and Specific Serotonergic Antidepressants

Commonly used if sleep and weight loss have been an issue in depression. Taken once daily at night. Low toxicity in overdose if taken alone.

Common adverse effects:

Sedation, increased appetite, weight gain, dry mouth, dizziness.

DRUG NAME	BRAND NAME	COMMENTS
Mirtazapine	Avanza, Remeron	May help anxiety symptoms. Sedative effect immediate so can help to restore sleep cycle immediately.

Noradrenaline Reuptake Inhibitor (NARI)

May be used for its activating effect to improve motivation levels.

Common adverse effects:

Dry mouth, constipation, dizziness, insomnia, sweating, urinary hesitancy (especially men).

DRUG NAME	BRAND NAME	COMMENTS
Reboxetine	Edronax	Taken twice daily.

Reversible Inhibitor of Monoamine Oxidase A (RIMA)

This class of drug is a safer alternative to MAOIs and no major dietary precautions are needed when the maximum licensed dose is not exceeded. RIMAs have fewer interactions, fewer cardiovascular effects and greater safety in overdose.

Common adverse effects:

Nausea, dry mouth insomnia, headache, dizziness.

DRUG NAME	BRAND NAME	COMMENTS
Moclobemide	Aurorix	Taken once or twice daily. Take doses no later than early afternoon to avoid insomnia effects.

Second Line Antidepressants

Tricyclic Antidepressants

Tricyclic antidepressants (TCAs) are not first line antidepressants due to their adverse effects and toxicity in overdose. All TCAs are equally effective in major depression.

Common adverse effects:

Sedation, dry mouth, blurred vision, constipation, weight gain, dizziness, urinary retention. **Overdose carries high risk of fatality.**

DRUG NAME	BRAND NAME	COMMENTS
Amitriptyline	Endep	Also used in pain management, migraine, incontinence and nocturnal enuresis (bed wetting).
Clomipramine	Anafranil	Also used to treat obsessive compulsive disorder.
Dosilepin (dothiepin)	Prothiaden	May be more toxic in overdose than other TCAs.
Doxepin	Sinequan	Most sedating of the TCAs.
Imipramine	Tolerade	Also used to treat urinary incontinence, panic disorder, ADHD and nocturnal enuresis.
Nortriptyline	Allegron	The active metabolite of amitriptyline.

Monoamine Oxidase Inhibitors (MAOIs)

Rarely prescribed antidepressants due to interactions with certain foods and some other medications. A strict diet low in tyramine must be adhered to whilst taking a MAOI and for 2 weeks after stopping the drug to reduce the risk of severe hypertension from occurring. Certain medication must also be avoided during treatment with a MAOI and for 2 weeks after stopping the medication.

DRUG NAME	BRAND NAME	COMMENTS
<i>Phenelzine</i>	Nardil	Usually taken in 2 or 3 doses daily. The last dose of the day should be taken before 3pm to avoid trouble sleeping at night Foods to be avoided include Vegemite*, tofu, soy sauce, matured cheeses, tap beer & dry sausage (e.g. salami). A full list of foods to avoid can be obtained from a doctor or pharmacist Always check with a pharmacist or doctor before starting any new medication, even herbal remedies, as they may interact with these medications
<i>Tranylcypromine</i>	Parnate	

Multi-modal Antidepressants

Vortioxetine (Brintellix)

New antidepressant, has multiple effects on serotonin and serotonin receptors. Has faster effect than other antidepressants and can improve cognitive function in depression.

Common side effects:

Short term nausea. Less likely to cause sexual dysfunction, weight gain.

Other Antidepressants

Agomelatine (Valdoxan)

New antidepressant; taken at bedtime as it can also improve sleep.

Common side effects:

Can cause raised liver enzymes so monitoring essential. Unlikely to cause weight gain or sexual adverse effects and is generally well tolerated.

Mianserin (Lumin)

New antidepressant; taken at bedtime as it can also improve sleep. Unlikely to cause weight gain or sexual adverse effects and is generally well tolerated.

Common adverse effects:

Sedation, dry mouth, dizziness.

Mood Stabilisers

Mood stabilisers are used to treat current episodes of mania or depression in patients with bipolar disorder. They are also used on a long-term basis to prevent future episodes of mania or depression from occurring.

It is not clear how these medications work to control and prevent changing mood. They do not have an immediate effect, but start to balance the mood after approximately one week.

These medications should be taken continually, even when their mood is stable, to ensure it stays that way.

Mood stabilisers are not a cure. Mood stabilisers should not be suddenly stopped without medical advice as suddenly stopping them can result in discontinuation symptoms (such as anxiety, irritability) and a worsening mental state.

Many of the mood stabilisers require ongoing blood tests to ensure the correct concentration of drug is present within the body. These blood tests should be done in the morning, and the morning dose of mood stabiliser should be taken after the tests to avoid inaccurate results. Blood tests are also used to detect some adverse effects (e.g. liver or kidney damage). If the blood test is not testing the drug level in the body, the morning dose can be taken before the test.

Mood stabilisers should be taken continuously as suddenly stopping them can result in withdrawal symptoms (anxiety, irritability) and a worsening mental state.

Lithium (Lithicarb, Quilonum)

Lithium is effective for acute mania and for preventing both manic and depressive episodes in bipolar disorder. Lithium is also used to augment antidepressants in treatment-resistant depression.

Dose:

Lithium should be taken twice or three times daily, with food to minimise nausea.

Dose of lithium depends on response to treatment and the lithium level in the blood. In most people, a lithium level of 0.5-1.2 is effective. Symptoms of toxicity tend to occur at levels >1.5, but they can also occur at lower concentrations, particularly in the elderly.

Common side effects:

Metallic taste, nausea, diarrhoea, weight gain, tremor, acne, psoriasis, underactive thyroid, excess urination.

Signs of Toxicity:

Mild-moderate: blurred vision, increasing diarrhoea, nausea, vomiting, muscle weakness, drowsiness

Severe: increased muscle tone, coarse tremor, disorientation, seizures, coma.

Medication Interactions:

Lithium interacts with many drugs, which can either increase or decrease lithium concentration in the body. Always consult a doctor or pharmacist before any new medications are started, even those bought from the supermarket (e.g. Nurofen can increase lithium levels).

Important points in patients taking lithium:

- The therapeutic range of lithium is small.
- Regular blood tests are required to ensure lithium blood level stays within the desired range.
- Be alert for signs of toxicity. If they occur, see a doctor as soon as possible. Toxicity symptoms often begin mild, but can develop into more serious effects if they are not addressed.
- Lithium interacts with many drugs, which can affect the lithium level.
- On hot days/sweating a lot, ensure fluid and electrolyte replacement occurs. Dehydration increases the risk of lithium toxicity.
- Lithium can affect thyroid and kidney function.
- Regular blood tests are required when patients take lithium to check lithium level, thyroid function, kidney function and electrolyte (salt) levels in the blood.
- Lithium can reduce suicide risk in patients with bipolar disorder.

Sodium Valproate (Epilim)

Anticonvulsant; most commonly used mood stabiliser.

Useful in the treatment of mania, maintenance treatment of bipolar disorder, and a small to medium effect in bipolar depression.

Dose:

Sodium valproate should be given twice daily, with food to minimise stomach upset.

200mg & 500mg tablets must be swallowed whole – do not break or crush them.

100mg tablets may be crushed/broken.

Common side effects:

Nausea, lethargy, confusion, weight gain, tremor (dose-related).

Hair loss with curly regrowth.

Peripheral oedema (swollen ankles).

Abnormal liver function, increased bleeding.

Sodium valproate in women:

Sodium valproate is a major teratogen – avoid use in pregnant women and women of child bearing potential. Use alternative in pregnant women if possible in the treatment of bipolar disorder. If used as an anticonvulsant to treat epilepsy, it may be continued to avoid increased risk of seizures.

Polycystic ovarian syndrome has been reported in women taking sodium valproate, and therefore may reduce fertility

Important points in patients taking sodium valproate:

- Regular blood tests are required to check the sodium valproate level in the blood as well as any adverse effects such as increased risk of bleeding and liver function.
- Take with food to reduce nausea and stomach upset.
- Do not stop taking abruptly. If valproate is to be discontinued, reduce dose slowly.
- Sometimes used to treat aggressive behaviours.
- Available in tablets or liquid.

Carbamazepine (Tegretol)

An anticonvulsant also used as a mood stabiliser in bipolar disorder. It is structurally related to tricyclic antidepressants. Used in the treatment of bipolar disorder when lithium and sodium valproate are not effective or not tolerated.

Dose:

Taken twice daily with food to reduce stomach upset.

Controlled release tablets available that release medication over a longer period. These are generally better tolerated.

Common side effects:

Drowsiness, dizziness, blurred vision, nausea, abdominal pain, headache, reduced platelets, low sodium in the blood, rash, abnormal liver function tests.

More serious side effects include low white blood cell count (reducing ability to fight infection).

Medication interactions:

Carbamazepine interacts with a lot of medication. Always check with a doctor or pharmacist before taking any new medication.

Carbamazepine commonly reduces the efficacy of other medications.

Lamotrigine (Lamictal)

Lamotrigine is an anticonvulsant used as a mood stabiliser, with particular efficacy demonstrated in the treatment of bipolar depression

Dose:

When initiating lamotrigine, start at a very low dose and increase very slowly over weeks to months. This is to reduce the risk of serious rash and skin conditions developing.

Common side effects:

Headache, drowsiness, tremor, dizziness.

Rash (less common) – can develop into serious skin condition.

Important points for people taking lamotrigine:

- Severe, life-threatening skin conditions have been reported.
- Report ALL rashes, flu-like symptoms, fever, malaise, sore throat, sores or blisters.
- The risk of these potential serious skin conditions is reduced by starting with a low dose of lamotrigine, and increasing the dose slowly.

Anxiolytics

Anxiety is a normal condition that everyone experiences some time in their life. When these symptoms become disabling or reduce a person's quality of life, intervention is required. Anxiety disorders include generalised anxiety disorder, social anxiety disorder, panic disorder, obsessive-compulsive disorder and post-traumatic stress disorder.

Anxiolytics provide relief from the symptoms of anxiety.

The selective serotonin reuptake inhibitors (see page 9) are first line options for the treatment of anxiety disorders. However, they can initially worsen anxiety on initiation and take a few weeks to have an effect.

Benzodiazepines provide immediate relief from symptoms. There are preferably not used long term due to the potential for tolerance and dependence.

Benzodiazepines

DRUG NAME	BRAND NAME	COMMENTS
<i>Alprazolam</i>	Kalma	Previously available as the brand Xanax. Rarely used and now a Schedule 8 medication (restricted use).
<i>Bromazepam</i>	Lexotan	
<i>Clobazam</i>	Frisium	
<i>Clonazepam</i>	Rivotril	
<i>Diazepam</i>	Valium	Longest acting benzodiazepine. Also used for alcohol withdrawal symptoms, muscle spasms.
<i>Lorazepam</i>	Ativan	
<i>Oxazepam</i>	Serepax	Preferred benzodiazepine for anxiety in the elderly.

Benzodiazepines reduce anxiety, agitation and tension.

Other indications for benzodiazepines include epilepsy, muscle spasm, alcohol withdrawal and as pre-medication.

Useful in the short-term management of anxiety disorders, however they are addictive, and can cause withdrawal symptoms on cessation.

Common side effects:

Drowsiness, over sedation, dizziness, memory loss, muscle incoordination (increased risk of falls in elderly), increased salivation, slurred speech.

Disinhibition (unexpected increase in aggressive behaviour) can occur after benzodiazepine use, reported in 1-20% of patients.

Important point for people taking benzodiazepines for anxiety:

- Ideally benzodiazepines should be used on a short-term basis as they are addictive.
- Tolerance and dependence can occur with prolonged treatment.
- Withdrawal symptoms can occur after 4-6 weeks of continuous use.
- Benzodiazepines are sometime misused for their euphoric and sedative effects, both alone and with other drugs.

Sedatives/Hypnotics

These agents are used for the short-term treatment of insomnia. Generally, medicines used to treat insomnia are prescribed for 2-4 weeks to help re-establish sleeping patterns, though occasionally they are prescribed for longer periods.

Principles of sleep hygiene

- Avoid excessive use of caffeine (particularly 3-4 hours before bed), alcohol or nicotine. A hot milky drink may help.
- Do not stay in bed for prolonged periods if not asleep. Go to another dimly lit room. Watching TV can have an alerting effect.
- Avoid daytime naps.
- Increase daily exercise, but not in the evening near bedtime.
- Only use the bed for sleeping (and sex).
- Establish a regular routine of going to bed and rising at the same time, regardless of the sleep duration.
- Make sure the bed and bedroom are comfortable and avoid extremes of noise, temperature and humidity.

Benzodiazepines

The most widely used hypnotics are the benzodiazepines. Benzodiazepines provide rapid symptomatic relief from anxiety symptoms.

Tolerance to the sedative effects can occur within 2-3 weeks. Long-term use may result in tolerance and dependence. Benzodiazepines used for insomnia generally have a quicker time to onset and a shorter duration of action compared to those used for anxiety.

DRUG NAME	BRAND NAME	COMMENTS
Flunitrazepam	Hypnodorm	Previously available as the brand Rohypnol. Schedule 8 drug (restricted use). Misuse is common as the “date rape” drug. Recommended for treatment-resistant insomnia. Not usually used for initial treatment.
Nitrazepam	Mogadon	

DRUG NAME	BRAND NAME	COMMENTS
<i>Temazepam</i>	Normison	Most commonly used sedative/hypnotic.

Z-Drugs

The Z-hypnotics have similar sedative actions to benzodiazepines, but do not have muscle relaxant, anti-epileptic or anxiolytic properties.

As with the benzodiazepines, they should only be used for short-term treatment of insomnia. Both z-hypnotics have an onset of action within 30 minutes.

If taken on a regular basis for longer than 2-4 weeks, dependence may occur. To avoid dependence, they may be used on an as-needed basis.

DRUG NAME	BRAND NAME	COMMENTS
<i>Zolpidem</i>	Stilnox, Stilnox CR	Do not take with alcohol as this may increase the risk of sleep walking/driving. Controlled release formulation (Stilnox CR) may provide a longer sleep period.
<i>Zopiclone</i>	Imovane, Imrest	Can cause a metallic taste

Common side effects:

Daytime (the morning after use) sedation, dizziness, headache, nausea, amnesia.

There have been reports of sleep walking, driving while “asleep” and food binging while “asleep” with zolpidem. Alcohol increases the risk of this occurring, therefore drinking alcohol whilst being treated with zolpidem is contraindicated. This can also occur with zopiclone, though seems to be less of a risk.

Other Medications for Insomnia

Melatonin (Circadin)

Melatonin is a naturally occurring hormone in the body associated with the control of circadian rhythm and sleep regulation. Melatonin can also be taken to improve insomnia and sleep quality.

Dose should be taken 1-2 hours before bed.

Melatonin is not addictive and seems to be well tolerated.

Common side effects:

Sedation, weakness

Suvorexant (Belsomra)

This is a new medication with a novel mechanism of action. It improves insomnia by blocking the binding of wake-promoting orexin A and B neuropeptides.

The dose should be taken 30 minutes before bed. As it is a new medication, it is unclear whether it has abuse potential, or rebound insomnia, dependence or discontinuation effects. There have not been any studies that compare its effectiveness to other hypnotic medications.

Common side effects:

Sedation (the morning after use), headache

Avoid combination with alcohol to reduce the risk of sleep-walking or other sleep-activities.

Psychostimulants

Psychostimulants are used to treat attention deficit hyperactivity disorder (ADHD), usually in children. They can also be used for narcolepsy.

These medications start working immediately, and are used to reduce hyperactivity in ADHD sufferers. They stimulate the central nervous system to increase motor activity, mental alertness and wakefulness.

Dexamphetamine and methylphenidate are considered equally effective, though patients may respond to one and not the other. If a patient does not respond to one psychostimulant, they can be switched to the other agent. They are the treatment of choice in ADHD for most patients.

How do they work:

Dexamphetamine and methylphenidate are thought to enhance dopamine and noradrenaline neurotransmission in the brain

DRUG NAME	BRAND NAME	COMMENTS
<i>Dexamphetamine</i>	Dexamphetamine	Immediate release tablets. Available only in 5mg strength
<i>Lisdexamfetamine</i>	Vyvanse	Slow release pro-drug that is converted to dexamphetamine in the body.
<i>Methylphenidate</i>	Ritalin, Ritalin LA, Concerta	Ritalin® is available as immediate release tablets. Ritalin LA® and Concerta® are controlled release formulations that are taken once daily (in the morning)

Common side effects:

Headache, insomnia, nausea, loss of appetite, weight loss, fast heart rate.

Infrequently can cause growth retardation - "drug free holidays" can be used to allow weight gain and growth to occur.

May worsen tics or Tourette's syndrome.

Important points:

- If taken once daily, take the dose in the morning. If taken twice daily, take first dose in the morning and the second dose early afternoon. This is to reduce sleep disturbance that can be caused by the medication.
- Potential for misuse – either by the patient or a sibling/parent/carer.

- Doctors must be authorised to prescribe dexamphetamine, lisdexamfetamine and methylphenidate with the WA Department of Health.
- Dexamphetamine, lisdexamfetamine and methylphenidate are controlled substances (Schedule 8).
- Psychostimulants also been used for treatment-resistant depression.

Atomoxetine (e.g. Strattera)

Atomoxetine is a non-stimulant drug indicated for the treatment of ADHD. It is usually used for patients who do not respond to or are intolerant of psychostimulants. Response to atomoxetine takes longer than psychostimulants.

Atomoxetine has low abuse potential.

DRUG NAME	BRAND NAME	COMMENTS
<i>Atomoxetine</i>	Strattera	Given once daily in the morning or twice daily in morning and late afternoon

Common side effects:

Nausea, vomiting, decreased appetite, abdominal pain, drowsiness, dry mouth.

Suicidal thoughts and behaviours have been rarely reported. Contact Dr if these emerge.

Guanfacine (Intuniv)

This is a non-stimulant medication indicated for the treatment of ADHD. It may be used as monotherapy (when psychostimulants or atomoxetine are not suitable, not tolerated or have been shown to be ineffective) or as adjunctive therapy to psychostimulants (where there has been a sub-optimal response to psychostimulants).

It is available as a modified release tablet that is suitable for once-daily dosing (in the morning or evening). Its sedation may help with sleep if taken in the evening.

Common side effects:

Drowsiness or insomnia, headache, abdominal pain, fatigue.

Reduced blood pressure or heart rate.

PSYCHOTROPIC MEDICATIONS & SUBSTANCE USE

General Effects Relating to Psychotropic Medications

The results of using substances other than prescribed medication (such as tobacco, cannabis, alcohol and illicit drugs) may include:

- poor response to treatment or slower time to recovery with treatment;
- additive side-effects with prescribed medications;
- more lifetime psychiatric hospitalisations.

People who inject drugs may be at increased risk of contracting hepatitis B and C infections. The associated liver damage may lead to a reduced ability of the body to metabolise (inactivate) prescribed medications, thereby increasing sensitivity to adverse effects.

Such people are also at an increased risk of contracting HIV. Medications used to treat HIV/AIDS may interact with prescribed medication and illicit substances. For example, ritonavir (an HIV medication) can increase the risk of ecstasy toxicity. Other HIV medications may increase or decrease methadone's effect.

Acute intoxication with illicit drugs, particularly synthetic cannabinoids, may result in behavioural disturbance.

People who misuse benzodiazepines – whether prescribed or not – may have a tolerance that renders benzodiazepines ineffective for the treatment of behavioural disturbances.

It is advised to discuss with your doctor any substance use and its potential impact on your mental state or medications.

Alcohol

The use of alcohol increases sedation from psychotropic medications. Any alcohol-related liver damage increases the levels of various psychotropic medications in the body, increasing the risk of adverse effects.

There is increased risk of low blood pressure if taken with olanzapine. There is increased risk of sedation and respiratory depression when alcohol is taken with benzodiazepines.

Cigarette Smoking

Polycyclic hydrocarbons in cigarette smoke stimulate liver enzymes to reduce the effectiveness of many psychotropic medications. Nicotine itself does not cause this interaction, so nicotine replacement therapy products used for smoking cessation are safe to use.

Cannabis

Cannabis use increases the risk of psychosis. For patients with a psychotic illness, there is increased risk of exacerbation of their psychosis.

Marijuana and synthetic cannabinoids can increase any sedation or rapid heart rate caused by some psychotropic medications.

If smoked, the polycyclic hydrocarbons in the smoke may reduce the effectiveness of some psychotropic medications.

Illicit Psychostimulants

These include methamphetamine and MDMA (ecstasy) and MDA. They increase the risk of arrhythmia in patients on TCAs. They can cause hypertensive crisis if taken with MAOIs. They can increase the risk of serotonin syndrome in patients on SSRIs, aripiprazole or lamotrigine. SSRIs may increase MDMA and cocaine levels, increasing the risk of overdose.

MDMA may increase the risk of EPSE from antipsychotic medications. The hyperthermia (high body temperature and dehydration from ecstasy) can increase the risk of lithium toxicity.

Cocaine

Has a psychostimulant effect but can be sedative in higher doses. Accordingly, it can interact with medications in a similar way as described above (for the psychostimulants). In high doses, cocaine-induced sedation can add to any sedation from prescribed psychotropic medications.

Cocaine can have toxic effects on the liver and heart when taken with carbamazepine.

Opioids

These include heroin, codeine and methadone. The sedation they cause can add to any sedation or respiratory depression caused by prescribed medications, increasing risk of overdose.

Ketamine

Ketamine causes sedation; when combined with sedating medications, the risk of respiratory depression or unconsciousness increases. There is an increased risk of high blood pressure when ketamine is taken with SNRIs or reboxetine.

Counselling & Support

Non-residential Services

318 Fitzgerald Street, Perth, 6000

P: 9328 9200 **E:** enquiry@cyrenianhouse.com

B: Bus Routes 19 or 960

Rick Hammersley Centre Therapeutic Community Mixed Gender Program & Saranna Women & Children's Program

Contact us through Non-residential Services

Serenity Lodge Therapeutic Community

Contact us through Non-residential Services

Serenity Withdrawal Unit

P: 9388 5000 **E:** enquiry@cyrenianhouse.com

Nannup Therapeutic Community

P: 9756 0100 **E:** enquiry@cyrenianhouse.com

Nannup Withdrawal Unit

P: 9756 0100 **E:** enquiry@cyrenianhouse.com

North Metro Community Alcohol & Drug Service

Joondalup

10 Clarke Crescent, Joondalup, 6027

P: 9301 3200

T: Joondalup Train Line

Warwick

26 Dugdale Street, Warwick, 6024

P: 9246 6767

B: Bus Routes 446 or 447

Cyrenian House Milliya Rumurra Outreach Service

Pembroke Road, Broome, 6725

P: 9192 6400 **E:** CHMReception@cyrenianhouse.com

Saranna Early Childhood Education & Care Centre

920 Gnangara Road, Cullacabardee, 6067

P: 9302 6444 **E:** SECECCadmin@cyrenianhouse.com

Wandoo Rehabilitation Prison Therapeutic Community

Murdoch Drive & Bramanti Road, Murdoch 6150

P: 9218 7926