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**WESTERN  
AUSTRALIA**

# Clinical Guidelines for the Physical Care of Mental Health Consumers

Clinician Handbook

Susanne Stanley &  
Jonathan Laugharne



Government of Western Australia  
Mental Health Commission



Based upon an extensive review of the literature and best practice guidelines, an overall Clinical Guidelines assessment package has been developed to assist in the examination and ongoing monitoring of mental health consumers' physical health.

**Five dimensions that impact upon a mental health consumer's physical health have been identified. Each dimension has a number of components, and an evaluation tool has been either sourced or developed for each:**

- **Medication effects**
- **Lifestyle factors**
- **Physical conditions (pre-existing or developing) & allergies**
- **Alcohol & illicit drug use**
- **Psychosocial factors**

The Clinical Guidelines for the Physical Care of Mental Health Consumers' assessment package includes:

### **Wall Chart – Metabolic Syndrome Algorithm**

This algorithm represents the basic physical health screening that must be conducted when assessing metabolic syndrome – waist circumference, blood pressure, fasting lipids, and fasting blood glucose. Designed as a wall chart, clinicians can easily access information they need to conduct required tests.

### **Clinical Handbook**

The handbook outlines information specifically dealing with medications and physical examinations, along with an overview of the other major health dimensions that need to be monitored. Designed for use by psychiatrists and general practitioners, the handbook represents an easily accessible knowledge source, and all results of specific tests are to be placed on the general screening forms provided.

## Lifestyle and Psychosocial Assessment

This booklet is a compilation of tools designed to give a deeper understanding of each consumer's health-related behaviours and social situation – Culture/religion/spirituality, exercise, diet, smoking, oral/dental, sexual activity, alcohol and other drug use, psychosocial supports. It is structured to be user-friendly as most people working within the health field can administer it.

### General Screening Forms

There are three results forms. A general screening form has been provided listing the recommended tests for each medication/medication category. A second screening form outlines additional tests recommended for specific medications (e.g. lithium carbonate), and a third screening form has been provided for clozapine.

These forms are to be used as a summary of each consumer's results, are to sit in the front of the consumer's medical file, and are colour-coded to match the lifestyle and psychosocial assessment booklet.

References used in this handbook are cited in full in the Clinical Guidelines for the Physical Care of Mental Health Consumers report.

This assessment package provides an overall evaluation of each consumer's physical health status, with information on the general screening form covering a time span of two years. This allows for recognition of patterns occurring over time, and places relevant information on physical health in the one location.

The Clinical Guidelines for the Physical Care of Mental Health Consumers' package has been developed for adults.

Further investigation is required for distinct populations (e.g. elderly, children, etc).

This Publication was produced with generous financial assistance of the Mental Health Commission of the State Government of Western Australia. The Government of Western Australia is granted a non-exclusive irrevocable non-transferable license to use the contents of this publication for any non-commercial purpose.

Enquiries concerning this report should be directed to:

Community, Culture and Mental Health Unit  
The University of Western Australia, School of Psychiatry and Clinical Neurosciences  
Fremantle Hospital, W Block, L6, 1 Alma Street, Fremantle WA 6160

Stanley, S. & Laugharne, J. (2010). *Clinical guidelines for the physical care of mental health consumers*. Community, Culture and Mental Health Unit, School of Psychiatry and Clinical Neurosciences, The University of Western Australia. Perth: The University of Western Australia

# MEDICATION

## Antidepressants

### *Recommended Testing*

- Blood Pressure
- Fasting Blood Glucose
- Urea & Electrolytes
- ECG
- Liver Function Tests

### *Adverse Effects*

#### Selective Serotonin Reuptake Inhibitors – SSRIs

(e.g. citalopram, escitalopram, fluoxetine, fluvoxamine, paroxetine, sertraline)

##### **Common**

Slow onset (4-12 weeks), nausea, agitation, insomnia, drowsiness, tremor, dry mouth, diarrhoea, constipation, dizziness, headache, sweating, weakness, anxiety, weight loss initially, weight gain long term, sexual dysfunction, rhinitis, myalgia, rash.

##### **Infrequent**

Extrapyramidal reactions (including tardive dyskinesia and dystonia), sedation, confusion, palpitations, tachycardia, hypotension, hyponatraemia (as part of SIADH), abnormal platelet aggregation/haemorrhagic complications (e.g. bruising, epistaxis, GI and vaginal bleeding).

##### **Rare**

Elevated liver enzymes, hepatitis, hepatic failure, galactorrhoea, blood dyscrasias, seizures, akathisia, paraesthesia, taste disturbance.

## Serotonin-Norepinephrine Reuptake Inhibitors – SNRIs

(e.g. venlafaxine, desvenlafaxine, nefazodone, duloxetine)

### Common

Nausea, vomiting, anorexia, headache, sweating, rash, anxiety, dizziness, fatigue, syncope, tremor, hypertension (dose-related), insomnia, hyponatremia, agitation, sexual dysfunction, sedation, orthostatic hypotension, elevated cholesterol levels.

### Rare

Suicidal thoughts or behaviour, agitation or panic attacks, hostility or aggressiveness, restlessness, mania, hallucinations, tachycardia, allergic reaction.

## Norepinephrine Reuptake Inhibitors – NRIs (NARI)

(e.g. reboxetine)

### Common

Urinary retention, sweating, paraesthesia, constipation, dry mouth, increase in diastolic blood pressure, increase in heart rate, low libido, insomnia, headache, impotence, dizziness.

### Infrequent

Hypotension, hypertension, tachycardia, hyponatremia, blurred vision, flushing, chills, urinary tract infection.

### Rare

Anxiety, loss of appetite, urinary retention in males, pain on ejaculation, increased orgasm intensity, premature ejaculation.

## Monoamine Oxidase Inhibitors – MAOIs

(e.g. phenelzine, tranylcypromine)

### Common

Orthostatic hypotension, sleep disturbances, headache, fatigue, drowsiness, weakness, agitation, tremors, twitching, myoclonus, hyper-reflexia, constipation, dry mouth, weight gain, impotence, loss of libido, elevated serum transaminases.

### Infrequent

Itch, rash, sweating, blurred vision, peripheral oedema, mania.

### Rare

Hypertensive crisis due to tyramine or medication interactions; hepatocellular damage, leucopenia, SIADH.

### Hypertensive Crisis

Severe occipital headache + rapid rise in blood pressure may result in intracranial haemorrhage or acute cardiac failure. Avoid large amounts of tyramine and rich foods (e.g. mature cheese, yeast extracts, red wine).

*Use with caution in the elderly due to adverse cardiovascular effects (e.g. orthostatic hypotension) and drug interactions*

## Reversible Inhibitors of Monoamine Oxidase – RIMAs

(e.g. moclobemide)

### Common to Infrequent

Nausea, dry mouth, anxiety, agitation, constipation, diarrhoea, insomnia, restlessness, dizziness, headache, sleepiness, tremor, visual disturbances, GI complaints (feeling of fullness), rash, pruritus, urticaria, flushing.

### Rare

Sedation, heartburn, confusion, avoid large amounts of tyramine and rich foods (e.g. mature cheese, yeast extracts, red wine), bone marrow damage, seizures, anaphylaxis, angioedema, hypertension, hypotension, hepatitis, breast enlargement, intrahepatic cholestasis, peripheral oedema.

## Tricyclics

(e.g. amitriptyline, clomipramine, dothiepin, doxepin, imipramine, nortriptyline, trimipramine)

### Common

Sedation, dry mouth, blurred vision, decreased lacrimation, constipation, weight gain, orthostatic hypotension, sinus tachycardia, urinary hesitancy or retention, reduced GI motility, anticholinergic delirium (particularly elderly, Parkinson's disease), impotence, loss of libido, other sexual adverse effects, tremor, dizziness, sweating, agitation, insomnia, anxiety, confusion.

### Infrequent

Slowed cardiac conduction, T wave inversion or flattening (high doses), arrhythmias, sinus tachycardia, nausea, hyperglycaemia, gynaecomastia in males, breast enlargement and galactorrhoea in females, allergic skin reactions, manic episodes.

### Rare

Blood dyscrasias, hepatitis, paralytic ileus, SIADH with hyponatraemia, seizures, prolonged QT interval.

*Nortriptyline often chosen for elderly as it is less likely to cause hypotension, sedation and anticholinergic effects*

## Noradrenergic & Specific Serotonergic Antidepressant's – NaSSAs

(e.g. mirtazapine)

### Common

Increased appetite, weight gain, sedation, asthenia, peripheral oedema, dry mouth, weakness.

### Rare

Orthostatic hypotension, elevated lipid levels, postural hypotension, seizures, mania, rash, granulocytopenia, agranulocytosis, eosinophilia.

## Anxiolytics

### *Recommended Testing*

- Blood Pressure
- Fasting Blood Glucose
- Urea & Electrolytes
- ECG
- Liver Function Tests

### *Adverse Effects*

#### **Benzodiazepines**

(e.g. alprazolam, bromazepam, clobazam, clonazepam, diazepam, flunitrazepam, lorazepam, midazolam, nitrazepam, oxazepam, temazepam, triazolam)

#### **Common**

Drowsiness, over-sedation, light-headedness, memory loss, hypersalivation, ataxia, slurred speech, risk of dependence.

#### **Infrequent**

Headache, vertigo, disorientation, confusion, paradoxical excitation, euphoria, aggression and hostility, anxiety, decreased libido, anterograde amnesia, respiratory depression, hypotension, cognitive impairment (long term).

*IV Injection* – pain and thrombophlebitis, severe hypotension, arrhythmias, respiratory arrest'

#### **Rare**

Blood disorders including leucopenia and leucocytosis, jaundice, transient elevated liver function tests, allergic reactions including rash and anaphylaxis, treatment emergent depression.

*Use low doses in elderly as risks increased*



## Mood Stabilisers /Antipsychotics

### *Recommended Testing*

- Blood Pressure
- Fasting Blood Glucose
- ECG
- Liver Function Tests
- Urea & Electrolytes
- Full Blood Picture
- Abnormal Involuntary Movement Scale (AIMS)

Additional test for amisulpride, risperidone, and olanzapine:

- Serum Prolactin

Additional test for quetiapine:

- Thyroid Stimulating Hormone

### *Adverse Effects*

#### Mood Stabilisers/Anticonvulsants

(e.g. gabapentin, pregabalin, topiramate, tiagabine, lamotrigine)

##### Common

Diplopia, blurred vision, dizziness, ataxia, headache, somnolence, hyperkinesia, nausea, vomiting, maculopapular rash, weight gain, diarrhoea, dysarthria, lethargy, memory impairment, euphoria, tremor, constipation, dry mouth, peripheral oedema, insomnia, (topiramate – reduced serum bicarbonate, nephrolithiasis, leucopenia).

##### Infrequent

Depression, confusion, agitation, hallucinations, myoclonus, hypoaesthesia, hyperaesthesia, tachycardia, heart failure, excessive salivation, sweating, flushing, rash, muscle cramp, myalgia, arthralgia, urinary incontinence, dysuria, facial and tongue oedema, suicidal ideation, aphasia, nystagmus (topiramate).

##### Rare

Multi-organ hypersensitivity syndrome (e.g. fever, abnormalities of blood and liver, lymphadenopathy, rash), neutropenia, pancreatitis, thrombocytopenia, first degree heart block (pregabalin), dysphagia.

## Antipsychotics

(e.g. olanzapine, quetiapine, amisulpride, aripiprazole, risperidone, ziprasidone, chlorpromazine, fluphenazine, haloperidol, loxapine, droperidol, flupenthixol, paliperidone, pericyazine, pimozide, trifluoperazine, zuclopenthixol).

### Common

Sedation, anxiety, agitation, orthostatic hypotension, tachycardia, blurred vision, moderate to marked weight gain, mydriasis, constipation, nausea, dry mouth, urinary retention, sexual adverse effects, hyperprolactinaemia (may result in galactorrhoea, gynaecomastia, amenorrhoea or infertility).

### Extrapyramidal Side Effects

Incidence highest for haloperidol, fluphenazine, trifluoperazine and pimozide; dystonias, akathisia, Parkinsonism, tardive dyskinesia.

### Infrequent or Rare

Allergic reactions including urticaria and Stevens-Johnson syndrome; corneal and lens opacities, SIADH, hyperthermia, hypothermia, neuroleptic malignant syndrome, anaemia, thrombocytopenia, agranulocytosis, ECG changes (reversible, broadened QT interval), arrhythmias, cardiac arrest, sudden death, hepatic fibrosis, systemic lupus erythematosus, seizures, increased blood glucose, dysarthria, dysphagia.

## Specific Drug Monitoring

Certain medications will need additional monitoring based on the increased incidence of adverse side-effects specific to those drugs.

*Separate monitoring is suggested for:*

- Carbamazepine
- Lithium Carbonate
- Valproic Acid
- Clozapine

# Carbamazepine

## *Recommended Testing*

- Blood Pressure
- Full Blood Picture
- Urea & Electrolytes
- Thyroid Stimulating Hormone
- Fasting Blood Glucose
- Serum Carbamazepine
- Liver Function Tests
- ECG

## *Adverse Effects*

### **Common**

Drowsiness, ataxia, blurred vision, diplopia, headache, rash, dry mouth, abdominal pain, nausea, vomiting, anorexia, diarrhoea, constipation, asymptomatic hyponatraemia, leucopenia, thrombocytopenia, increased liver enzymes.

### **Rare**

Antibody deficiency, severe skin reactions, systemic lupus erythematosus, aplastic anaemia, multi-organ hypersensitivity syndrome (including fever, lymphadenopathy, haematologic abnormalities, hepatitis), psychiatric disorders, SIADH, arrhythmias, orofacial dyskinesia, hepatitis, jaundice, osteomalacia.

### **Severe Skin Reactions**

Include exfoliative dermatitis, Stevens-Johnson syndrome and toxic epidermal necrolysis; may also occur as part of multi-organ hypersensitivity syndrome. Serious reactions generally occur within the first few months of treatment and are more common in people of Asian ancestry.

## Lithium Carbonate

### *Recommended Testing*

- Blood Pressure
- Full Blood Picture
- Urinalysis (U/A)
- Fasting Blood Glucose
- Thyroid Stimulating Hormone
- Urea & Electrolytes
- Serum Lithium
- ECG

### *Adverse Effects*

#### **Common**

Metallic taste, nausea, diarrhoea, epigastric discomfort, weight gain, fatigue, headache, vertigo, tremor, acne, psoriasis, polyuria, leucocytosis, hypothyroidism, benign T wave changes on ECG.

#### **Infrequent**

Nephrogenic diabetes insipidus with polydipsia and polyuria, memory impairment, hair loss, hyperparathyroidism.

#### **Rare**

Arrhythmias, hyperthyroidism.

#### **Mild-to-moderate toxicity**

Blurred vision, increasing diarrhoea, nausea, vomiting, muscle weakness, drowsiness, apathy, ataxia, flu-like illness.

#### **Severe toxicity**

Increased muscle tone, hyper-reflexia, myoclonic jerks, coarse tremor, dysarthria, disorientation, psychosis, seizures, coma.

#### **Nephrotoxicity**

Renal damage – multiple episodes of acute toxicity.

## Valproic Acid

### *Recommended Testing*

- Blood Pressure
- Fasting Blood Glucose
- Full Blood Picture
- Liver Function Tests
- Prothrombin Time (*PT*)
- Valproic Acid
- ECG

### *Adverse Effects*

#### **Common**

Nausea, vomiting, increased appetite, weight gain, tremor (dose-related), paraesthesia, drowsiness, ataxia, elevated liver transaminase concentrations (dose-related), asymptomatic hyperammonaemia.

#### **Infrequent**

Thinning or loss of scalp hair (usually temporary), menstrual irregularities, abnormal bleeding time (usually clinically unimportant), rash.

#### **Rare**

Hepatic failure, pancreatitis (usually occurs within the first 6 months and can be fatal), leucopenia, neutropenia, thrombocytopenia (dose-related), extrapyramidal syndrome, peripheral oedema, hyperammonaemic encephalopathy, hypersensitivity syndrome.

#### **Hypersensitivity Syndrome**

Usually occurs within the first 6 weeks and can be fatal; symptoms include fever, rash, lymphadenopathy, hepatitis, haematological abnormalities, hepatorenal syndrome may occur.

## Clozapine

### *Recommended Testing*

- Blood Pressure
- Fasting Blood Glucose
- Full Blood Picture
- Blood Type
- ECG
- Echocardiogram
- Liver Function Test
- Urea & Electrolytes
- Troponin T
- Pulse
- Temperature

- Contraindicated in severe renal impairment
- Contraindicated in severe hepatic impairment
- Contraindicated in bone marrow disorders, drug-induced (including clozapine-induced) neutropenia or agranulocytosis

### *Within 10 days prior to commencement of Clozapine*

- Conduct all baseline tests
- Register the prescriber, pharmacist and consumer with the relevant clozapine monitoring system

*NOTE: Possible incidence of myocarditis (early in treatment), and cardiomyopathy (within the first six months of treatment)*

(Western Australian Psychotropic Drugs Committee, 2006)

## *Daily/Weekly Monitoring*

- Daily monitoring of blood pressure, pulse and temperature for the first 4 weeks
- Full Blood Picture to be assessed weekly for 18 weeks, and monthly thereafter. Increase monitoring where required.
- Stop clozapine if neutrophils are  $< 1.5 \times 10^9/L$
- Stop clozapine if total leucocytes are  $< 3.0 \times 10^9/L$  or eosinophils are  $> 3.0 \times 10^9/L$
- Electrocardiogram (ECG)\*

\* *Should be repeated at 2 weeks, and possibly at 6 weeks as most reported cases of myocarditis have occurred within the first 6-8 weeks of therapy.*

(New Zealand Medicines & Medical Devices Safety Authority, 2008)

- Troponin T level should be measured baseline, week 1 and week 2, then 3 monthly.

## *Adverse Effects*

### **Common**

Drowsiness, hypersalivation (can cause aspiration pneumonia), constipation, seizures, headache, tachycardia, hyperpyrexia, hepatitis, neutropenia, weight gain, nausea, vomiting, urinary retention, urinary incontinence.

### **Infrequent**

Agranulocytosis, eosinophilia, priapism, EPSE.

### **Rare**

Cardiomyopathy, myocarditis, hypertension, hyperglycaemia, myoclonic jerks, interstitial nephritis, respiratory arrest.

## Normative Ranges for Each Test:

The ranges given here are for adults. Further information is needed for distinct populations such as people over the age of 65yrs, pregnant women, etc.

### Blood Pressure (mmHg)

<i>Systolic</i>	<i>Diastolic</i>	<i>Condition</i>
< 90	< 60	Hypotension
<b>90-119</b>	<b>60-79</b>	<b>Normal</b>
120-139	80-89	Pre-hypertension
140-159	90-99	Stage1-Hypertension
≥ 160	≥ 100	Stage2-Hypertension

### Fasting Blood Glucose (mmol/L)

< 5.6	Normal	
5.6-7.0	Impaired	→ Glucose Tolerance Test
≥ 7.0	Diabetes	

### Glucose Tolerance Test (GTT) (mmol/L)

<i>Fasting</i>		<i>2 Hour</i>	
≤ 6.0	and	< 7.8	Normal
6.1-6.9	and/or	7.8-11.0	Impaired
≥ 7.0	and/or	≥ 11.1	Diabetes

### Pulse

60-80 bpm	Resting
< 60 bpm	Brachycardia
> 100 bpm	Tachycardia

### Temperature

36-37.2°C	Normal – oral
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### Liver Function Test

Total protein		60-80 g/L
Albumin		35-50 g/L
Bilirubin		< 4 μmol/L or < 5% of total
Bicarbonate		> 13yrs 22-32
Alkaline Phosphatase		> 20yrs 35-135 U/L
Alanine Aminotransferase (ALT)	Male	> 17yrs < 40 U/L
	Female	> 17yrs < 35 U/L



## 25-hydroxyvitamin D (*serum*)

75 nmol/L

## Urea & Electrolytes

Sodium		> 13yrs	134-146 mmol/L
Potassium			3.4-5.0 mmol/L
Bicarbonate		> 13yrs	22-32 mmol/L
Glucose			< 5.6 mmol/L (fasting)
Urea		> 13yrs	3.0-8.0 mmol/L
Creatinine	Male	> 16yrs	60-110 mcmmol/L
	Female	> 16yrs	45-90 mcmmol/L
Chloride		> 13yrs	98-108 mmol/L
Osmolality			275-295 mosmol/kg

## ECG

Beats per minute			60-90
PR Interval			0.12-0.20 sec
QRS Duration			0.06-0.10 sec
QT Interval			QT <sub>c</sub> ≤ 0.40 sec

## Full Blood Picture

Red Cell Count	Male	> 12yrs	4.5-5.5 (x10 <sup>12</sup> /L)
	Female	> 12yrs	3.8-4.8
MCH		> 18yrs	27-32 pg
MCHC			320-360 g/L
MCV		> 18yrs	80-100 fL
RDW			9-15
White Cell Count		> 18yrs	4-11 (x10 <sup>9</sup> /L)
Neutrophils		> 18yrs	2-7.5 (Absolute x10 <sup>9</sup> /L) g/L
Lymphocytes		> 18yrs	1.2-4 (Absolute x10 <sup>9</sup> /L) g/L
Monocytes		> 2yrs	0.2-1.0 (Absolute x10 <sup>9</sup> /L) g/L
Eosinophils		> 18yrs	0.00-0.5 (Absolute x10 <sup>9</sup> /L) g/L
Basophils		> 28 days	0.00-0.2 (Absolute x10 <sup>9</sup> /L) g/L
Platelet Count			150-400 (x10 <sup>9</sup> /L)
MPV			6.0-10.0 fL

### **Thyroid Stimulating Hormone**

0.4-4.0

### **Urinalysis (U/A)**

Urea (24hr Urine) 300-600 mmol/Day

Specific Gravity 1.003-1.030

### **Serum Prolactin**

15-25 µg/L Normal range

25-200 µg/L Hyperprolactinaemia

> 200 µg/L Prolactinoma

### **Serum Lithium**

0.5-1.2 mmol/L Therapeutic range

### **Prothrombin Time (PT)**

0.9-1.3 sec

### **Valproic Acid**

50-100 µg/L Therapeutic range

### **Serum Carbamazepine**

6-12 µg/mL Therapeutic range

### **Troponin T**

< 0.03 µg/L Healthy

0.03-0.09 µg/L Possible cardiac risk

≥ 0.10 µg/L Myocardial infarction

### **Abnormal Involuntary Movement Scale (AIMS)**

Facial & oral movements

Extremity movements

Trunk movements

## Metabolic Syndrome

Atypical antipsychotic medications were introduced to lower the incidence of extrapyramidal symptoms such as Parkinsonism and tardive dyskinesia, yet it is becoming increasingly evident that they are associated with metabolic disturbances, cardiovascular disease and type 2 diabetes.

- One of the most prevalent health issues found in mental health consumers today
- Relatively common across all mental health diagnoses
- Central obesity, glucose intolerance/insulin resistance, hypertension, and dyslipidemia characterise the syndrome, yet only a small number of consumers are regularly screened

(Meyer & Stahl, 2009; Taylor et al., 2005)

## References for Medications:

*Rossi (2009)*

*American Society of Health System Pharmacists (2009)*

*CMP Medica (2008) MIMS Online*

*NAMI – National Alliance on Mental Illness (2009)*

*PathWest, Fremantle Hospital (December, 2009)*

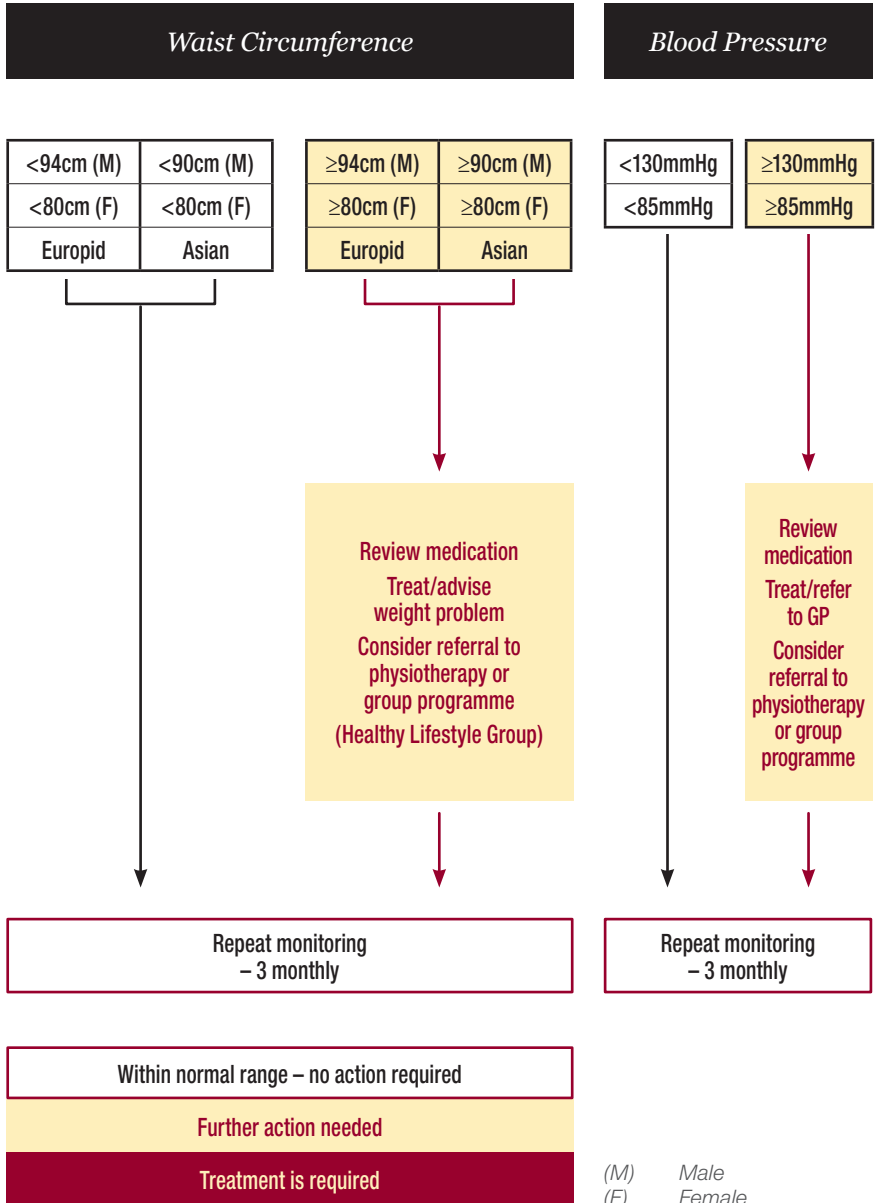
*Peel & Rockingham/Kwinana Mental Health Services (2009)*

*Western Australian Psychotropic Drugs Committee (2006)*

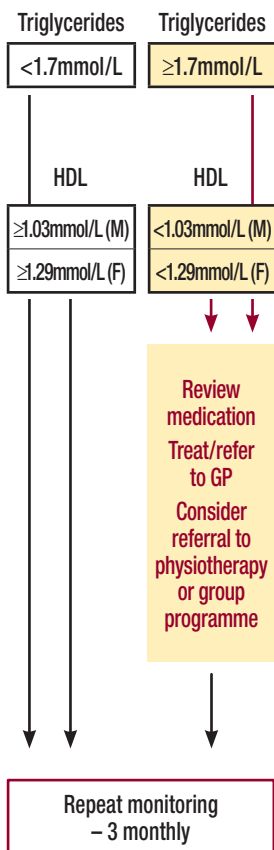
*New Zealand Medicines & Medical Devices Safety Authority (2008)*

*Guy (1976) Abnormal Involuntary Movement Scale (AIMS)*

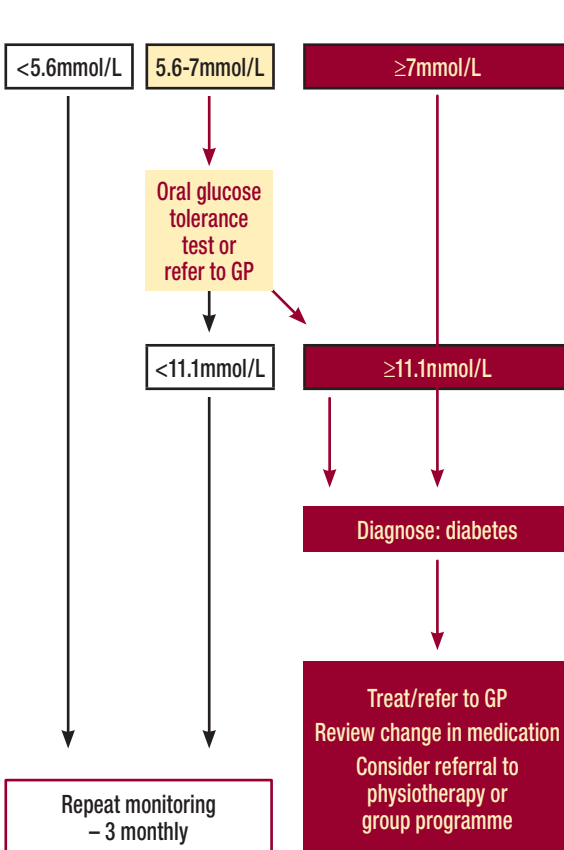
# Clinical algorithm for monitoring metabolic syndrome in mental health patients



## Fasting Lipids



## Fasting Blood Glucose



Based on Waterreus & Laugharne (2009).

Screening for the metabolic syndrome in patients receiving antipsychotic treatment: a proposed algorithm. *MJA*, 190 (4), 185-189.

# 2 LIFESTYLE

## Sexual Activity

Adequate sexual expression provides people with a sense of psychological, physical and social well-being.

Many psychotropic medications, including antidepressants cause:

- Sexual dysfunction (*Baldwin & Mayers, 2003; Montejo, 2008*)
- Decreased libido or decrease in sexual desire
- Impotence and problems with orgasm or ejaculation
- Fertility problems
- Lower rates of sexual activity in people with a mental illness, yet higher risk and self-report of unprotected sex, sex trading, and illicit drug use

(*Meade & Sikkema, 2007*)

## Cholesterol

Suggested target cholesterol levels:

### High Density Lipoprotein Cholesterol (HDL-C) (mmol/L)

*Desirable range*

≥ 1.03

Males

≥ 1.29

Females

*High Risk patient range*

> 1.0

Males and Females

### Low Density Lipoprotein Cholesterol (LDL-C) (mmol/L)

*Desirable range*

< 3.0

*High Risk patient range*

< 2.0

### Triglycerides (TG) (mmol/L)

*Desirable range*

< 1.7

*High Risk patient range*

< 1.5

### Total Cholesterol (TC) (mmol/L)

*Desirable range*

< 5.5

*High Risk patient range*

< 4.0

*High cholesterol and triglyceride levels are associated with coronary heart disease and diabetes. Dyslipidemia is associated with many psychotropic medications (e.g. olanzapine, clozapine, haloperidol, imipramine) as they increase lipid biosynthesis.*

## Exercise

### *Activity Level*

Vigorous intensity	Jogging, aerobics, digging, fast bicycling
Moderate intensity	Walking
Other	Slow bicycling, carrying light loads

### *Weight*

Monitor weight over time

Use weight measurement to calculate BMI

### *Body Mass Index (BMI)*

BMI is a simple index of weight-for-height that is commonly used to classify underweight, overweight, and obese adults.

e.g.  $BMI = 70 \text{ kg} / (1.75 \text{ m})^2 = 70 / 3.0625 = 22.9$

< 18.50	Underweight	High Risk
18.50-24.99	Normal range	Normal
≥ 25.00-29.99	Overweight	High Risk
30.00-34.99	Obese	High Risk
≥ 35.00	Morbidly Obese	Very High Risk

### *Abdominal Girth*

Increased abdominal fat is associated with type 2 diabetes, hypertension, cardiovascular disease, and dyslipidemia.

- Measure directly against the skin
- Tell the person to breathe out normally
- Make sure the tape is snug, without compressing the skin
- Measure halfway between the lowest rib and the top of the hipbone, roughly in line with the bellybutton.

< 94cm (male)	< 80cm (female)	Europid
< 90cm (male)	< 80cm (female)	Asian

## Diet

Consider referral to a dietician or providing information on healthy eating behaviours, determined by Body Mass Index (BMI) classification:

< 18.50	Underweight	Refer to dietician
18.50-24.99	Normal	Normal weight range
25.00-27.49	Overweight	Refer to a healthy eating guide
27.50-29.99	Overweight (Pre-obese)	Consider referral or direct to a healthy eating guide
30.00-34.99	Obese	Refer to dietician
≥ 35.00	Morbidly Obese	Refer to dietician

## Smoking

- 20% of Australian adults smoke tobacco
- 66% of people with bipolar, 74% of people with schizophrenia, and 57% of people with major depression smoke tobacco (*Diaz et al., 2009*)
- If the consumer smokes tobacco, administer the smoking cessation survey to explore the person's interest, confidence, and probability of quitting.
- Track attempts to quit / smoking behaviour over time.
- Many people attempt to give up smoking a number of times before they finally succeed.
- Nicotine replacement therapy or medication such as bupropion or varenicline may be used, but caution must be taken as these drugs are linked to depression and suicide.

## Oral/Dental

Oral health is generally poor in mental health consumers; they are less likely to visit a dentist, and medication enhances risk.

### *Problems:*

- Bad mouth odour;
- Ulcerated, bleeding and/or inflamed mucous membranes, lips and/or gums;
- Decayed and/or fractured teeth;
- Calculus on teeth;
- Absence of saliva



### *Psychotropic and Dental Drug interactions:*

**Amitriptyline (TCA's) + anxiolytics, hypnotics, sympathomimetics, local anaesthetic with adrenaline**

= sedative effects, potentiates dental drug, increased heart rate and blood pressure

**Cannabis + local anaesthetic with adrenaline**

= abnormal response to local anaesthetic

**Chlorpromazine + anxiolytics, hypnotics, analgesics, anaesthetics**

= sedative effects, potentiates dental drug

**Chlordiazepoxide + opioid analgesic, antihistamine**

= sedative effects

**Clozapine + carbamazepine, cotrimoxazole, anxiolytics, hypnotics**

= increased incidence of agranulocytosis, sedative effects

**Dexamphetamine Sulphate + adrenaline**

= possible hypertension

**Dothiepin + anxiolytics, hypnotics**

= sedative effects

**Fluoxetine + anticoagulants**

= potentiates dental drug

**Flupenthixol Decanoate + anxiolytics, hypnotics**

= sedative effects

**Haloperidol + carbamazepine, anxiolytics, hypnotics**

= accelerates metabolism, sedative effects

**Methylphenidate Hydrochloride + adrenaline**

= possible hypertension

**Prochlorperazine + anxiolytics, hypnotics**

= sedative effects

**Procyclidine + antifungals, antihistamine**

= reduced absorption, increased antimuscarinic effects

**Promazine Hydrochloride, Risperidone or Thioridazine + anxiolytics, hypnotics**

= sedative effects

# 3

## PHYSICAL DISORDERS

### HIV/AIDS & STI's

For all mental health consumers consideration should be given regarding health checks for HIV/AIDS and Sexually Transmissible Infections (STI's):

- Prevalence rates higher for people with a mental illness
  - 0.6% general population
  - 1.7%-5% of people with a mental illness (*USA data*)
- People with mental illness LESS likely to be sexually active when compared to people in the general population:
- People with a mental illness MORE likely than people in the general population to have unprotected sex, engage in sex-trading (trading sex for money, drugs, or other goods), and use illicit drugs.
- No difference in HIV risk between different mental disorders
- Positive symptoms of psychosis are associated with greater sexual activity
- Sex-trading is more likely for people diagnosed with schizophrenia and illicit drug users.

### Hepatitis B and C

For all mental health consumers consideration should be given regarding health checks for Hepatitis C and B:

- Prevalence rates higher for people with a mental illness (*Hep C*)
  - approximately 1% of the general population
  - approximately 19.5% of consumers with a mental illness (*across disorders*)
- Testing rates very low
- Hep C – Some evidence that interferon- $\alpha$  in combination with ribavirin can be safely administered to mental health consumers (*Rifai et al., 2006*)
- Hep B is one of the most common infectious diseases in the world

## Cancer

All mental health consumers should undergo cancer screening as per the general population.

- Incidence rates similar to general population
- Mortality rates significantly higher than the general population:
  - 40% higher in males
  - 20% higher in females
 (*Lawrence et al., 2000 – WA study of 172,932 mental health patients*)
- Likely that mental health consumers are not being adequately screened for cancer

### *Males*

#### **Highest cancer mortality rate ratios (in order):**

- cancer of the brain
- prostate
- urinary bladder
- unknown primary site
- lymphoma
- leukaemia
- lung

### *Females*

#### **Highest cancer mortality rate ratios (in order):**

- cancer of the brain
- unknown primary site
- breast
- cervix
- ovary
- lung
- pancreas
- lymphoma

*Majority of brain tumours found in older consumers*

## Irritable Bowel Syndrome (IBS) & Gastrointestinal Dysfunction

Irritable Bowel Syndrome (IBS) is characterised by abdominal discomfort or pain, bloating, and diarrhoea and/or constipation.

- Incidence in general population is 10-15%
- Incidence in mental health consumers is 20-25%
- IBS is thought to result from hypersensitivity in the bowel wall (*Talley, 2001, 2006*)
- Evidence of central dysregulation, serotonin dysregulation, inflammatory bowel disease, and bacterial overgrowth

*95% of the body's serotonin resides in the gut:*

- Constipation-predominant IBS = low levels of plasma serotonin
- Diarrhoea-predominant IBS = high levels of plasma serotonin

*Care must be taken to exclude the presence of Inflammatory Bowel Disease (IBD):*

Inflammatory conditions of the colon and small intestine e.g.

- Crohns's disease
- Ulcerative colitis

*Mental health consumers sometimes fluctuate between constipation and diarrhoea, and most experience some abdominal discomfort or pain.*

## Type 2 Diabetes

Type 2 diabetes occurs when either the pancreas does not make enough insulin, or the body's cells become resistant to insulin.

### *Risk Factors:*

- Genetics
- Environment – high blood pressure, a lack of exercise & poor diet  
(*may result in obesity*)
- Psychotropic medications – elevated blood glucose levels
- 4% of the general Australian population have diabetes
  - 88% Type 2 diabetes (*ABS, 2008*)
- 14.5% of people with schizophrenia, schizo-affective disorder have diabetes (*Cohen, 2006*)
- 1979 to 1995 – before and immediately following atypical antipsychotics the incidence of diabetes in people with schizophrenia was similar to the general population
- 1996 to 2001 – 70% of patients in the USA now take atypicals – 0.7% increase per year of diabetes mellitus for people with schizophrenia

(*Basu & Meltzer, 2006*)

- Antidepressants show an increased risk in diabetes mellitus  
(*Andersohn et al., 2009*):
  - Large observational study – 160,000 patients from 1990 to 2005
  - Long-term use (24 months +)
  - Tricyclics, SSRI's – 84% risk of diabetes
  - SNRI's – 80% risk of diabetes

### *Testing – Sex Differences:*

(*Magliano et al., 2008*)

- Males have higher fasting plasma glucose in general
- Females have higher 2-h plasma glucose in general (during a standard GTT)
- Women with high fasting blood glucose levels more likely to develop Type 2 diabetes than males
- Men with impaired glucose tolerance levels more likely to develop Type 2 diabetes than females

## Cardiovascular Disease

- Cardiovascular disease accounts for 36% of all deaths in Australia. The two most common conditions are:
  - stroke
  - heart attack
- In 2004/2005 roughly 3.5 million people (18%) in Australia reported having a long-term cardiovascular condition such as high blood pressure (most commonly reported) (ABS, 2006)

### *Key Risk Factors:*

- dyslipidemia
  - obesity
  - smoking
  - hypertension
  - hyperglycemia
- Atypical antipsychotics – olanzapine and quetiapine greatest risk for high blood pressure and cardiovascular disease (Daumit et al., 2008)
  - Baseline risk for cardiovascular disease across all antipsychotics – 8.1% to 9.1%
  - Antipsychotics, Tricyclics and SSRI's show an elevated risk for sudden cardiac death (Ray et al., 2001; Whang et al., 2009)
  - Typical antipsychotics (e.g. haloperidol, thioridazine, chlorpromazine, thiothixene) show a 60% greater incidence of sudden cardiac death than atypical antipsychotics

## Respiratory Disease

- Respiratory disease accounted for 8.4% of all registered deaths in Australia in 2007 (*ABS, 2007*)
- Chronic Obstructive Pulmonary Disease (*COPD*) (e.g. *asthma, bronchitis, emphysema*) accounted for the majority of these deaths
- In Australia 10.8% of people suffer from COPD symptoms (*Buist et al., 2007*)
- Almost 20% of Australians > 40yrs have COPD (*Lung Foundation, 2009*)
- Approximately 11% of adults have asthma (*Asthma Foundation Australia, 2009*)
- Due to the high incidence of tobacco smoking (*the highest risk factor for COPD*) in people with a mental illness, it is likely that respiratory disorders will be more prominent
- COPD is often mistaken for asthma or is unrecognised in mental health consumers (*Frith, Esterman, Crocket & James, 2004*).

# 4 ALCOHOL & ILLICIT DRUG USE

## Alcohol

- In Australia, 21% of people drink at a level that poses a high risk to their health (*ABS, 2008*).
- Anxiety disorders often precede alcohol disorders (*Kushner et al., 2009*)
- Alcohol disorders often precede depressive disorders (*Jane-Llopis & Matytsina, 2006*)

### *Health complications:*

Liver dysfunction; memory loss; possible brain damage (Wernicke's encephalopathy to Korsakoff's syndrome); oral, throat, and oesophageal cancers; aggression and violent behaviour; peptic ulcers; impaired sensation in peripheral extremities; heart failure; anaemia; bleeding, severe inflammation of the stomach, vomiting; inflammation of the pancreas; impaired sexual function; birth defects; alcohol can also affect the metabolism of prescription drugs.

### *Assessment:*

#### **AUDIT (Alcohol Use Disorders Identification Test)**

*Babor, de la Fuente, Saunders & Grant (1992)*

Identifies possible drinking-related problems

#### **SADQ-C (Severity of Alcohol Dependence Questionnaire)**

*Stockwell, Sitharan, McGrath & Lang (1994)*

If a drinking problem has been established, SADQ-C will establish the severity of dependence

- Both tests can be administered by assessor or consumer
- Both tests found to be reliable for psychiatric populations

## Illicit Drugs

### *Health Complications:*

#### **Amphetamines and related drugs (e.g. ecstasy, cocaine)**

*When taken:*

Muscular tension, bruxism, jaw clenching, restlessness of the legs, increased body temperature.



*Two to three days after:*

Pain and stiffness in lower back, headache, nausea, dry mouth, blurred vision, loss of appetite, insomnia, fluctuating heart rate and blood pressure.

*For some:*

Hyperactivity, inability to focus, mild hallucinations, depersonalisation and anxiety can occur.

*Long term use can cause:*

Serotonin neurotoxicity, impairments of memory, decision making, and information processing, greater impulsivity, panic attacks, recurrent paranoia and psychotic episodes, major physical toxicity (hepatic, cardiovascular, cerebral, and hyperpyrexia), and possible death.

## **Opioids**

Much of the physical harm is caused by unsterilized needles, needle swapping (e.g. HIV/AIDS, Hepatitis C), intravenous use of drug preparations for oral use only, and abscesses and cellulitis.

## **Cannabis**

*During drug use:*

Effects on cognition, depression of the immune system, and possible psychosis.

*Long-term:*

Heavy smokers of cannabis risk serious adverse effects on the respiratory system.

## **Anabolic Steroids**

Significant increase in anxiety, aggression, sexual behaviour, cardiovascular events, cholesterol, impaired liver function, liver tumours, jaundice, hypomania, and depression

*Assessment:*

### **DAST (Drug Abuse Screening Test)**

*Skinner (1982)*

Identifies possible drug abuse including:

- prescribed or over-the-counter drugs used in excess of directions
- any non-medical use of drugs
- does NOT include alcoholic beverages

### **SDS (Severity of Dependence Scales)**

*Gossop, Darke, Griffiths, Hando, Powis, Hall & Strang (1995)*

## Culture/Religion/Spirituality

### *Values/Belief Systems:*

*“Culture includes, but is not restricted to, age or generation; gender; sexual orientation; occupation and socioeconomic status; ethnic origin or migrant experience; religious or spiritual belief; and disability”*

(Nursing Council of New Zealand, 2009, p.4).

- Differences between religious and cultural beliefs, values and meaning, practices and customs can result in alienation, discrimination, and abuse
- Individual differences within cultures as well as between cultures
- The need to respect and consider the views of a client embodies the realisation that different people require different therapeutic assistance

### *Language:*

- 27.1% of WA's population were born overseas
- 11.4% of WA's population speak a language other than English at home
- Around 270 different languages spoken in WA
- The use of interpreters enables better communication between consumers and practitioners

*Consumers may prefer to have a family member present*

### *Autonomy and Relatedness:*

- Western cultures – high levels of autonomy and moderate levels of relatedness are encouraged and valued
  - individuals require a strong sense of control, achievement, competency, agency, independence, uniqueness, and separateness from others to maintain emotional/mental health
- Non-western cultures – high levels of relatedness and moderate levels of autonomy are encouraged and valued
  - emphasise communion, affiliation, connectedness, harmonious relationships, interdependence, and sociality to maintain emotional/mental health

### *Mental/Physical Health Ideology:*

- No universal explanation of mental illness can be applied to an entire cultural group (*Tyson & Flaskerud, 2009*)
- Individuals and groups consider emotions, thoughts and behaviours within the context of their own society
- Western medical explanations and treatments may not carry the same meaning or relevance for people from other cultures
- Definitions of support are dependent upon beliefs surrounding autonomy, dependency and reciprocity, and these beliefs in turn, shape the way in which people and groups give, receive, accept or reject support (*Jacobson, 1986*)

## *Assessment – Cultural Safety:*

### **Protocols**

Addresses cultural forms of engagement  
(e.g. informed consent, permission)

Seeking and sharing cultural knowledge

### **Personal Knowledge**

Being mindful of your own cultural identity

Socio-historic location/power in relation to the consumer

Personal ideology and commitment to ways of conceptualising mental health and well-being

Sharing personally relevant information creates equity and trust

### **Partnerships**

Sharing knowledge versus 'telling'

Collaborative practice where those seeking help share in the problem solving versus expert/authority models

### **Process**

Ensure equity and dignity

Negotiate goals and activities

Talk less and listen more

Frequent checking to ensure that proposed solutions fit with the consumer's values, preferences and lifestyle

## Psychosocial Supports

### *Familial Relationships:*

Social and emotional support is associated with a reduced risk of morbidity, mental illness, and mortality, and affects the way in which people cope with stressful events and situations

*(Uchino, 2006; Strine et al., 2008)*

Close social support from significant others equates to lower levels of depressive symptoms, hassles, and substance abuse

*(Jackson, 2006)*

Family contact cannot be assumed to be sufficient as the supports given may not meet the needs of the person

*(Fleury et al. (2008)*

*Patients in contact with family – PF*

*Patients not in contact with family – PNF*

	<b>PF</b>	<b>PNF</b>
Need for daytime activities	61%	44%
Physical health problems	37%	35%
Need social company	61%	50%
Need for intimate relationships	31%	26%
Need for sexual expression	33%	14%

*No help from relatives or services with:*

Health	10.5%	10.6%
Social	31%	42%
Information and utilities	31%	27%

- High rates of sexual impairment:

Antipsychotics – 60% men, 80% women *(Fan et al., 2007)*

SSRI's – around 50% *(Schweitzer et al., 2009)*

### *Community Involvement:*

- Belonging – a connection to others through intimate relationships, community engagement or group activities appears to protect people against physical symptoms of ill health (*Hale et al., 2005*)
- Kindness, being in a non-stigmatising environment, and having others to listen to them allows consumers to gain self-confidence and develop new social skills (*Shiner et al., 2008*)
- Mental and physical health can benefit greatly by providing assistance to others who also have mental health concerns (*Bates, Kemp & Isaac, 2008; Bracke, Christiaens & Verhaeghe, 2008*)
- The availability of peer supporters enhances the credibility of the service provider in that peers offering support draw from their own experiences of mental illness in order to engage with and assist others (*Davidson et al., 2006*)

### *Socio-Economic Status and Employment:*

- The overwhelming majority of the main indicators of health status (e.g. self-rated health, functional impairments, disease-specific morbidity, and mortality) are inversely associated with Socio-Economic Status (SES) (*Schnittker & McLeod, 2005*)
- Low SES is consistently related to a higher risk of mental illness (*Hudson, 2005*)
- Low SES affects the affordability of medications and essential health services (*Hynd et al., 2008*)
- Unemployment associated with more negative symptoms and a poorer quality of life
- People involved in non-labour force work such as students, trainees, and volunteers are more like the employed than the unemployed in regard to symptoms (*Turner et al., 2009*)

## *Assessment – Psychosocial Supports Survey:*

**Social supports may need to be investigated and support structures implemented if they are absent or not available when the person needs them.**

### *Emotional – crisis:*

i.e. empathy and care from family and friends for a person in crisis allows the expression of feelings and emotion (e.g. fear, anxiety, emotional distress).

### *Cognitive – transition:*

i.e. knowledge and information, and developing coping skills assists with decision-making and personal direction.

### *Material – deficiency*

i.e. rent assistance, and hostel accommodation assists people experiencing a deficiency in personal resources (e.g. housing and homelessness).

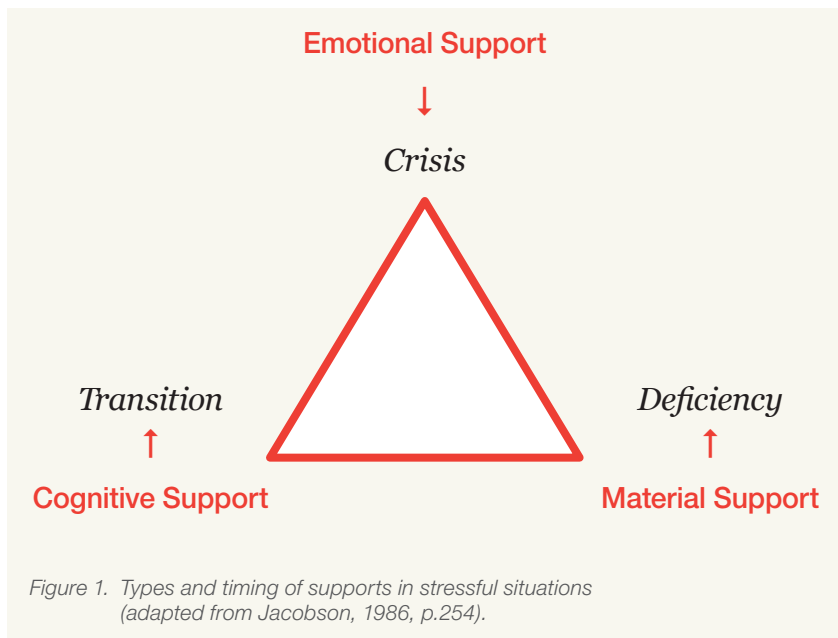


Figure 1. Types and timing of supports in stressful situations (adapted from Jacobson, 1986, p.254).



THE UNIVERSITY OF  
**WESTERN  
AUSTRALIA**

**Community, Culture and Mental Health Unit  
School of Psychiatry and Clinical Neurosciences**

The University of Western Australia  
Fremantle Hospital  
L6, W Block, Alma Street  
Fremantle, WA 6160

**Tel** +61 8 9431 3467

**Fax** +61 8 9431 3407

**Web** [www.psychiatry.uwa.edu.au/research/community-culture](http://www.psychiatry.uwa.edu.au/research/community-culture)

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