



Nourishing

mind, body and brain



Dietitians Australia Mental Health Evidence Brief 2024

The power of nutrition and Accredited Practising Dietitians in addressing Australia's mental health challenges

dietitiansaustralia.org.au/dietitians-week

#MindBodyBrain #DietitiansWeek2024



Foreword

A message from Dietitians Australia President Tara Diversi.

All Australians are impacted by mental health challenges in some way. Whether that be experiencing an occurrence personally, or supporting children, family members and community connections living with mental health challenges. About half of the Australian population will experience a mental health condition in their lives, with about 20 per cent experiencing a mental health condition in any given year.

Our health care system needs to evolve to manage the often-complex needs of people living with mental health conditions. New systems and models of care are urgently needed to optimise health outcomes of all Australians. People living with mental health conditions deserve and will benefit enormously from a holistic care approach that is best delivered by collaborative multidisciplinary teams.

For a successful, holistic approach, we must pay close attention to how people are fuelling and nourishing their bodies and minds.

What we eat has a profound impact on the mind, body and brain. The evidence is mounting that dietetic and nutrition guidance and therapy, ideally delivered through the support of an Accredited Practising Dietitian, can help Australians prevent, manage and treat some mental health symptoms and commonly associated physical illnesses.

“ As part of the solution to Australia’s great mental health challenge, Accredited Practising Dietitians are currently largely underutilised across the health sector. ”

As part of the solution to Australia’s great mental health challenge, Accredited Practising Dietitians are currently largely underutilised across the health sector.

Mental health conditions represent the fourth leading disease group in Australia, accounting for 12% of the total disease burden. They cost the economy upwards of \$70 billion dollars annually from lost productivity. Early mortality and disability due to mental health conditions cost an additional \$150 billion annually. There is not only a need, but an imperative to transform the way we deal with the personal, societal and economic costs of mental health conditions.

Mental health care teams, in all settings, must include Accredited Practising Dietitians. There is a wealth of evidence supporting the role of nutrition in mental health. Nutrition therapy for prevention, management and treatment of mental health conditions delivered by Accredited Practising Dietitians facilitate optimal outcomes.

Accredited Practising Dietitians are committed to boosting their role in transforming the mental health of all Australians. This evidence brief is a summary of the growing body of evidence that demonstrates the power of nutrition and dietetic intervention when it comes to nourishing the minds, bodies and brains of individuals. This is a call to action to all those involved in designing solutions to our mental health challenges in this country, to engage and leverage the power of nutrition by embracing the knowledge and guidance of the dietetic profession.



Impact in Australia

Prevalence of lifetime mental health conditions (2020-2022) ¹



42.9% (8.6 Million)
of Australians aged 16–85 years
experienced a mental health
condition at some time in their life



28.8% (5.7 Million)
people experienced an anxiety disorder



16% (3.2 Million)
people experienced a mood disorder



19.6% (3.9 Million)
people experienced a substance
use disorder

Prevalence of mental health conditions experienced in the previous 12 months (2020-2022) ¹



21% (4.2 Million)
of Australians aged 16–85 years
experienced a mental health condition
within the previous 12 months



17.2% (3.4 Million)
people experienced an anxiety disorder
within the previous 12 months



7.5% (1.5 Million)
people experienced a mood disorder
within the previous 12 months



3.3% (647,900)
people experienced a substance use
disorder within the previous 12 months





Females experienced higher rates than males of anxiety disorders (21.1% compared with 13.3%)



Females experienced higher rates than males of mood disorders (8.6% compared with 6.5%)



Males had over twice the rate of substance use disorders (4.4% compared to 2.1% of women).

Eating disorders



Approximately 16% of Australians (4 million people) are affected by either an eating disorder or disordered eating ²



Up to 25% of Australians experiencing an eating disorder are male ⁴



31.6% of Australian adolescents are engaging in disordered eating behaviours each year ³

Psychosis ⁵



The 2010 National Psychosis Survey estimated that 64,000 Australians aged 18–64 experienced a psychotic illness each year. Schizophrenia accounted for almost half of all diagnoses (47%)

Mental health conditions and disability ⁶



57.9% of all Australians with a profound or severe disability reported having a mental or behavioural condition in 2017-18



Evidence summary

This Brief is a summary of the growing volume of evidence that shows the power of nutrition therapy, dietetic guidance and counselling for the prevention, management and treatment of mental health conditions, symptoms and commonly associated physical illnesses. Dietitians Australia has prepared this Brief in collaboration with members of the Dietitians Australia Mental Health Interest Group, Eating Disorders Interest Group, Disability Interest Group and other expert members.

The impact of nutrition in the prevention, treatment and management of mood and anxiety disorders

There is significant evidence that shows improving diet quality can reduce the risk of developing mood and anxiety disorders and reduce symptoms associated with these disorders. There is emerging evidence that has found simply making changes to the quality of food intake, can lead to the remission of depressive symptoms in some people. Conversely, there is evidence that shows eating a diet comprised of unhealthy foods can increase the risk of developing mood and anxiety disorders.

The impact of nutrition in the detection, prevention, treatment and recovery of eating disorders

Accredited Practising Dietitians are continuing to grow as core members of multidisciplinary healthcare teams when it comes to the detection, prevention, and treatment of eating disorders in Australia.⁷

Eating disorders often co-exist with other mental health conditions in individuals. Accredited Practising Dietitians are committed to working with Australians to promote positive relationships with food and healthy eating patterns. Personalised nutrition therapy, supported by the multidisciplinary team is critical to support recovery from eating disorders.

The impact of nutrition in recovery from substance use

Evidence-based nutritional therapy delivered by Accredited Practising Dietitians can have a profound impact on a person's recovery from substance use, and vastly improve their quality of life and overall health.⁸

Nutrient deficiencies that commonly occur in people using alcohol pose a significant risk to physical, psychological and social health. Guidance and counselling from an Accredited Practising Dietitian is a critical component of the recovery journey in harmful substance use, to ensure the individual returns to optimal health.



The impact of nutrition in the management of psychotic disorders

Living with psychotic disorders can present significant challenges for people when it comes to meeting their nutritional needs and dealing with side-effects of certain psychotropic medications.

Including Accredited Practising Dietitians in multidisciplinary healthcare teams has been shown to have a significant impact on helping to anchor treatment and to optimise a person's nutritional intake and health outcomes.

The impact of nutrition support in mental health conditions with co-existing intellectual disability

Accredited Practising Dietitians, as part of the multidisciplinary team, play a crucial role in empowering people living with co-existing mental health conditions and intellectual disability to optimise their nutritional intake, health outcomes and quality of life. They play a pivotal role in providing personalised support for people with co-existing mental health conditions and intellectual disability to address issues that impact on their nutrition status by collaborating with the person to optimise function (body function, executing activities, community participation) through positive nutrition, eating patterns, and eating-behaviour change.



Policy recommendations

Accredited Practising Dietitians are the health professionals best equipped to play a central role in multidisciplinary teams to provide effective, evidence-based nutrition therapy for the prevention, treatment and management of mental health conditions and/or associated physical illness.

We call on all levels of government to ensure people living with mental health conditions can readily access comprehensive multidisciplinary mental health care that includes access to Accredited Practising Dietitians when and where they need it.

1 Investment in paid positions for Accredited Practising Dietitians in government-funded mental health initiatives and facilities

2 Creation of a Medicare Benefits Schedule (MBS) items pertaining to depression, other mood disorders and severe mental illness, to include:

a. introduction of long and short MBS items for Accredited Practising Dietitians for individual and group consultations, in person and by Telehealth

b. immediate referral to Accredited Practising Dietitians for people who are prescribed antipsychotics and other psychotropic medications where there are known metabolic side effects.

3 Inclusion of Accredited Practising Dietitians in the MBS 'Better Access to Psychiatrists, Psychologists and General Practitioners' (Better Access) initiative

4 Secured investment in the National Disability Insurance Scheme to ensure plans have sufficient hours and funding for comprehensive access to Accredited Practising Dietitians to support the functional needs and health goals of people living with mental health conditions and co-existing intellectual disability.



The impact of nutrition in prevention, treatment and management of mood and anxiety disorders

Description

Mood and anxiety disorders are a group of conditions featuring persistent episodes where a person's mood is disturbed. To break this down:

- **Mood disorders**, also known as affective disorders, are characterised by sadness or elation that is more intense than usual, accompanied by other symptoms, and impairment of physical and social function and ability to work.⁹ Common mood disorders include major depressive disorder, persistent depressive disorder and bipolar disorders.¹⁰
 - **Anxiety disorders**, consist of a group of conditions marked by excessive anxiety or fear that are beyond normal feelings of worry or stress.¹⁰ Common anxiety disorders include:
 - panic disorder
 - generalised anxiety disorder (GAD)
 - post-traumatic stress disorder (PTSD)
 - social phobia
 - other specific phobias (e.g. flying, heights, animals).
- **Lifetime occurrence** - 28.8% (5.7 million) of Australians aged 16–85 years had experienced an anxiety disorder and 16% (3.2 million) had experienced an affective disorder at some time in their life¹
 - **Occurrence in previous 12 months** - 17.2% (3.4 million) of Australians aged 16–85 years had anxiety and 7.5% (1.5 million) had an affective disorder within the previous 12-months¹

Prevalence

Mood and anxiety disorders are highly prevalent in Australian communities. In 2020–2022:

Impacts on nutrition status

Mood and anxiety disorders can impact dietary intake, ultimately affecting nutritional status and physical health. These effects can impact the person experiencing illness as well as their families.

Mood and anxiety disorders, and the medications used in their treatment, can lead to:¹¹

- taste changes, cravings or altered appetite
- inadequate or excessive intake
- food insecurity
- compromised nutritional status
- weight changes
- food preparation or cooking challenges
- dehydration or constipation
- poor organisation and meal planning skills
- increased energy expenditure
- difficulty chewing and swallowing
- reduced motivation, fatigue or impaired concentration
- increased nutrient requirements.¹¹



The life expectancy of people living with a mental health condition can be 10 to 20 years shorter than the rest of the Australian population.¹² The increased risk of illness and death are commonly due to factors that can be prevented, managed or treated with diet.^{13,14} Medications frequently used in the treatment of mood disorders (and psychosis, see later section), such as antipsychotic and mood stabilizer medications, can have metabolic side effects and can have varying tendency to promote weight gain.¹⁵ Other medications including antidepressants and anti-anxiety medications can have side effects that may impact on nutritional status and physical health.

Mood disorders are common in people with overweight or obesity and in those with chronic diseases like diabetes, heart disease and cancer.¹⁶⁻²⁰ The relationship between mental and physical illnesses is bi-directional. That means that physical illnesses like heart disease and diabetes are a risk factor for developing depression, and depression can increase the risk of developing these physical illnesses.^{17,21} Additionally, obesity has been shown to increase the risk of depression later in life by 55 percent, whilst depression increases the risk of developing obesity by 58 percent.²²

The co-occurrence of depression and physical illness can also worsen health outcomes. This can be due to reduced adherence to treatment, impaired physical and cognitive function, and reduced quality of life.²¹ Studies have shown a strong link between bipolar disorder and both heart disease²³ and metabolic syndrome,²⁴ which, like other chronic health conditions, can be managed through diet. Metabolic syndrome in people with bipolar disorder can complicate treatment and lead to poor health outcomes if not addressed.²⁴ Cardiometabolic screening is recommended upon diagnosis and as routine care to improve physical health outcomes.²⁵

How Accredited Practising Dietitians can support Australians living with mood and anxiety disorders

Eating nutritious food can help reduce the chance of developing a mood or anxiety disorder.

“
Diet and nutrition are important modifiable risk factors for depressive and anxiety disorders. ²⁶
”

Studies show the benefits of improving diet quality and its role in reducing the incidence of depression and depressive symptoms.^{27,28} Strong evidence suggests that high intakes of fruit, vegetables, fish and whole grains may reduce depression risk.²⁹ People who follow a Mediterranean-style diet, or a diet that includes fruit, vegetables, fish, and whole grains, have approximately a 30% reduction in the risk of developing depression.³⁰

Nutrition therapy led by Accredited Practising Dietitians is shown to be effective,³¹ and has shown significant reductions in depressive symptoms in people diagnosed with moderate to severe depression.²⁷ Similarly, adults diagnosed with depression who received nutrition education, food hampers and fish oil supplementation as well as being involved in Mediterranean-style diet cooking workshops showed greater reduction in depression and improved mental health compared to those receiving only social support.³² Telehealth interventions focusing on eating behaviours in people experiencing addictive eating have also shown significant improvements in mental health, including depression, anxiety and stress.³³



Consuming a poor-quality diet that is high in processed meats, carbohydrates and other inflammatory foods including alcohol and trans fats is linked to higher rates of depression.^{34, 35} Inflammation in the body increases the risk of major depressive disorder and the risk increases with higher levels of inflammation.³⁶ Emerging evidence also shows that poor diet quality is a risk factor for the development of adolescent mental health problems.³⁷

The relationship between the gut and brain has influence on immune function, metabolism, body weight and mental health.³⁸⁻⁴⁰ Mental health conditions can be associated with gut problems such as constipation, diarrhoea and bloating.⁴¹⁻⁴⁴ Emerging research has explored the role of dietary interventions, including the use of fermented foods and probiotics in altering gut microbiota and replenishing the gut barrier, as a potential therapy for neurological disorders.^{38, 41-44}

Adjunctive nutrition therapy is low cost, safe and effective.^{45, 46} There are no known harms associated with improving diet quality.

Rather, a healthy diet is likely to be associated with additional benefits in relation to co-existing health conditions and a reduction in associated health costs.

“ **Adjunctive nutrition therapy is low cost, safe and effective.**^{45, 46} **There are no known known harms associated with improving diet quality.** ”

A multidisciplinary approach to the prevention, management and treatment of any mental health condition is critical.^{43, 44, 47} Referral to a dietitian is recommended for anyone with a diagnosis of a mood or anxiety disorder and is particularly imperative when a disorder impacts on the person's:

- diet or nutrition-related quality of life
- ability to access, prepare or consume nutritious food
- eating behaviours or body image
- other medical issues that make dietary requirements more complex.²⁷



The impact of nutrition in the detection, prevention, treatment and recovery of eating disorders

Description

Eating Disorders are a group of psychiatric conditions characterised by extreme and prolonged disturbance in eating behaviours associated with psychological factors that lead to serious health problems.^{48,49} In 2023, the cost to individuals living with eating disorders was \$60,654. The economic and social cost was \$66.9 billion.⁷

Altered eating behaviour can fall between two extremes of eating – restriction and binge, or in some cases both. Eating disorders can take many different forms and interfere with a person's day to day life. They significantly increase the risk of suicidal ideation and suicide attempt. Eating disorders and disordered eating behaviours can impact people of any age, gender, socioeconomic group, culture, ethnicity, gender identity or sexual orientation.

The characteristics of some eating disorders are described below:

- **Anorexia Nervosa** is characterised by extreme dietary restriction resulting in significant weight loss and an intense fear of gaining weight. Anorexia Nervosa has the highest mortality rate of any psychiatric disorder and it can occur at any age and weight.¹⁰
- **Bulimia Nervosa** is characterised by recurrent episodes of binge-eating or consuming large amounts of food in a relatively short period of time, followed by compensatory behaviours, eg. self-induced vomiting, fasting, overexercising and/or the misuse of laxatives, enemas or diuretics.¹⁰
- **Binge Eating Disorder** is characterised by consuming large amounts of food in a relatively short period of time together with a sense of lack of control over the behaviour. Bingeing is followed by feelings of guilt, shame and distress. This can fuel further bingeing to escape these feelings.^{10, 49}
- **Avoidant/Restrictive Food Intake Disorder** is characterised by an eating or feeding disturbance, eg, apparent lack of interest in food or eating, avoidance based on the sensory characteristics of food, concern about unpleasant consequences of eating.¹⁰
- **Other Specified Feeding or Eating Disorder** is characterised by feeding or eating behaviours that cause clinically significant distress and impairment in functioning, but do not meet the full criteria for any of the other feeding and eating disorders.⁵⁰ Examples include pica and night eating syndrome.
- **Unspecified Feeding or Eating Disorder** is characterised by behaviours that cause clinically significant distress or impairment in functioning, but do not meet the full criteria for any of the other feeding and eating disorders. This classification is used when clinicians choose not to specify why criteria are not met, including where there may not be enough information to make a more specific diagnosis, eg, in emergency room settings.^{49,50}



- **Disordered eating** is a disturbed and unhealthy eating pattern that can include restrictive dieting, compulsive eating or skipping meals. Disordered eating can include behaviours which reflect many but not all the symptoms of feeding and eating disorders listed above.⁵¹

Prevalence

Approximately 16% of Australians (4 million people) are affected by either an eating disorder or disordered eating.² This number continues to increase, with 31.6% of Australian adolescents engaging in disordered eating behaviours each year.³

According to recent Australian research, 22% of the adolescent population, or 33% of girls and 13% of boys aged 11-19, met the criteria for an eating disorder.⁵²

Up to 25% of Australians experiencing an eating disorder are male,⁴ and the lifetime prevalence of eating disorders in men is 1.2% in Australia.⁵³ It is likely this is underestimated due to social stigma, lack of awareness, and differences in presentation of eating disorders in males compared to females. Younger males can have earlier age of onset than females. Unspecified Feeding or Eating Disorder diagnosis is more common in males than females.⁵⁴ There has also been a significant increase in the prevalence of Bulimia Nervosa reported in Australian males between the ages 14 and 20 years.⁵³

People with eating disorders experience higher rates of other mental disorders with reports of up to 97% having a co-existing mental health condition.^{55,56} Adults with eating disorders experience significantly higher levels of anxiety disorders, depressive disorders and suicide attempts as well as cardiovascular disease, chronic fatigue and neurological symptoms.⁵⁵ Adolescents with diabetes have more than double the risk of developing an eating disorder as adolescents without diabetes.⁵⁶

Impacts on nutrition status

Eating disorders are associated with significant impacts on an individual's nutrition status, especially for those with prolonged and more severe disease. Impacts on nutrition status may include malnutrition, dehydration and electrolyte disturbances.^{10, 49, 57-59} These impacts can lead to oral problems, problems with the function of the heart, brain, liver, stomach, intestine, kidney and muscle, and breakdown of these organs resulting in medical complications that can lead to death.^{49, 50, 57, 60-63} While Anorexia Nervosa results in significant weight loss, people living with other eating disorders may or may not experience significant changes in weight but may still present with significant medical risk.¹⁰



How Accredited Practising Dietitians can support Australians living with eating disorders and disordered eating

This may involve activities including:

- using dietary therapy to prevent or treat malnutrition
- providing nutritional rehabilitation to correct nutritional deficiencies
- promoting engagement with therapy
- helping to determine the suitability of available treatment options
- developing an individualised treatment plan in collaboration with the person, their supports and the multidisciplinary team
- providing structure, psychoeducation and therapeutic support to encourage the person to return to an appropriate nutritional intake, reduce disordered eating behaviours and promote a better relationship with food and eating
- developing mutually agreed goals and a treatment escalation and relapse prevention plan
- incorporating nutritional counselling that complements the psychological model used in therapy to facilitate and enhance change.

“ Skilled Accredited Practising Dietitians play an essential role as part of the multidisciplinary team for the detection, prevention and treatment of eating disorders and disordered eating. The primary role of skilled dietitians working with people experiencing an eating disorder or disordered eating is to support recovery. ”

Early detection is associated with better outcomes.

“ A person’s quality of life can be greatly improved, and their risk of death reduced, when they are treated by a skilled, multidisciplinary team that includes an Accredited Practising Dietitian. ”



The impact of nutrition in recovery from substance use

Substance use can be considered on a continuum from non-use to experimental use, recreational use, regular use, to compulsive or dependent use. People can move up and down this continuum and can be at different points with different substances.⁶⁴ Alcohol and other drug dependence typically refers to substance use patterns that negatively impact a person's mental and physical health, and includes challenges in reducing or ceasing use despite multiple efforts by a person to do so.⁶⁵ Although there is no safe level of alcohol consumption,¹⁸ these harms are distinct from alcohol dependence.⁶⁶ Similarly, while recreational use of illicit and legal substances poses risks to physical, psychological and social health, these concerns are distinct from substance dependence.^{8, 67}

There is a higher rate of mental health problems, including anxiety and depression, among people who experience challenges with alcohol and other drugs.^{68, 69} For some people, existing mental health conditions can lead to substance use as a way of coping or managing distress, and for others, substance use may precede symptoms of a mental health condition.^{70, 71}

Prevalence

The prevalence of some substance uses is described below:

- **Alcohol use** - alcohol is the most used drug in Australia, with 25% of the population drinking alcohol in quantities that exceed the single occasion risk⁸
- **Illicit drug use** - in 2019, 16.4% of Australians had used an illicit drug in the past 12 months

- **Mental health condition and substance use** - people with a mental health condition are 2.1 times more likely to self-report recent nonmedical use of painkillers and 1.8 times more likely to report cannabis use than the general population. People who report higher levels of psychological distress are at least twice as likely to report recent illicit drug use, and are more likely to drink more than 4 standard drinks on one occasion.⁸

In 2019, an Australian study found 47% of drug users had experienced a mental health condition in the preceding six months, with depression (70%) and anxiety (61%) the most reported conditions.⁷²

Impacts on nutrition status

Nutrient deficiencies are commonly associated with substance use.

Deficiencies result from:

- not eating adequately or appropriately during substance use
- inadequate absorption and use of nutrients in the body caused by substance use.^{73, 74}

Excessive alcohol intake and drug use can cause damage to the digestive tract, resulting in constipation, diarrhoea, indigestion and poor appetite. The nutritional impacts of alcohol and other drug use can be amplified when there are physical health conditions that also impact on nutritional needs like cirrhosis, hepatitis, heart disease and Type 2 Diabetes.⁷⁵



There is a higher rate of co-occurrence of physical health concerns among people with substance use disorder who also have a mental health condition.⁶⁹

Common nutrition issues present during and after substance use include:

- weight changes
- nutrient imbalances
- irregular eating patterns, including
- disordered eating and eating disorders
- food insecurity

Weight changes - appetite suppression is a common side effect of substance use, and eating may not be a priority for active users of drugs and alcohol. Some substances can increase appetite, leading to increased intake of nutrient-poor foods. The high energy and low nutrient content of alcohol can displace the intake of nutrient-rich foods, resulting in weight changes and nutrient deficiencies.⁷⁴ These weight changes often continue into detoxification and recovery, as a person's nutrient intake changes. Additionally, poor dental health has been identified as a common and significant issue which can restrict nutritional intake among people who use alcohol and other drugs.⁷⁶

Nutrient imbalances - reduced food intake and the consumption of nutrient-poor foods can both contribute to nutrient deficiencies during substance use. Malnutrition is prevalent among individuals with high alcohol and drug use.⁷⁷ Damage to the digestive system through drug and alcohol use can also impair the body's ability to absorb, use and store vitamins and minerals. Common vitamin deficiencies include vitamins A, C, D and E, thiamine, as well as iron and other trace minerals.⁷⁴

Eating patterns - people who use substances may not have regular meals, may experience binge eating following a period of substance use, and may have reduced social eating occasions.^{77,78} After detoxification and during treatments such as methadone therapy, cravings and consumption of high sugar foods are common.^{79,80}

Food insecurity - food insecurity is experienced at much higher levels for people who use substances or who have a mental health condition and use substances.⁸¹⁻⁸⁵

How Accredited Practising Dietitians can support Australians living with substance use disorders

Professional dietary advice on eating well and other healthy lifestyle behaviours such as regular exercise and adequate sleep can help to improve a person's physical, mental and emotional wellbeing during recovery.^{82,86}



“ Accredited Practising Dietitians support people in recovery by assessing nutrient status and monitoring and managing common nutrition-related symptoms, such as nausea, anorexia and gastrointestinal symptoms such as diarrhoea, fluid and electrolyte losses. ⁷⁹ ”

Australian research suggests:

- up to 60% of women who misuse substances have an eating disorder ⁸⁷
- up to 80% of people with a mental health condition and use substances experience binge eating episodes
- up to 25% are diagnosed with Other Specified Feeding or Eating Disorder. ⁸⁰

Eating disorders may lead to substance use via the use of substances to control weight and appetite, and substance use may lead to eating disorders due to the neurological and psychological impacts of substance-induced changes in appetite and weight. ^{74, 88, 89}

Dietitians work in a multidisciplinary team to address factors which may significantly impact a person's wellbeing and their food choices, including financial resources, level of food security, food literacy, social support and quality of housing. Dietitians can also support recovery through referral to relevant support services including social work and other specialised services if the person is seeking assistance with other priority issues.



The impact of nutrition in the management of psychotic disorders

Description

Psychosis' is an umbrella term used to describe a loss of touch with reality in some way, as well as disorganisation of thoughts and significant disturbances in thinking, perception, emotional response and behaviour.¹⁰ Key features of psychosis include delusion, hallucination and thought disorder.¹⁰

Broad categories of psychotic disorders include the following:¹⁰

• Primary psychotic disorders

- Schizophrenia - lifelong condition that may be characterised by delusions, hallucinations, disorganised and/or reduced speech, disorganised or catatonic behaviour, blunted emotions, reduced ability to experience pleasure, lack of motivation, disinterest in socialisation. Symptoms are associated with significant impairment in functioning.
- Schizophreniform Disorder – short-term condition lasting no more than 6 months with the same symptoms as schizophrenia.
- Schizoaffective Disorder – condition that includes symptoms of both schizophrenia and a mood disorder.
- Schizoaffective Disorder – condition that includes symptoms of both schizophrenia and a mood disorder.

Other categories include mood disorders with psychotic features, medical disorders with psychotic features and substance related disorders.

Prevalence

Schizophrenia is considered a 'serious' or 'severe mental illness'. It tends to be chronic and relapsing and may significantly impact an individual's functioning. The Australian National Psychosis Survey⁵ in 2010 estimated that 64,000 people in Australia aged 18 to 64 live with schizophrenia, contributing to almost half (47 percent) of all psychotic disorders diagnosed each year.⁵

Prevalence and incidence rates of schizophrenia are 4.5 per 1000 and 15.2 per 100,000 (per year) respectively.^{5, 90} Despite schizophrenia being considered a low prevalence disorder, it is a substantial contributor to the global disease burden.⁹¹ Schizophrenia contributes 13.4 million years of life lived with disability to the global burden of disease.⁹¹

It is estimated that a third of people diagnosed with schizophrenia have schizoaffective disorder,⁹² and a third have schizophreniform disorder.⁹³

Impacts on nutrition status

Modifiable diet-related risk factors contributing to higher morbidity and mortality rates^{18, 94-96} in people with schizophrenia may include:

- low quality diets high in saturated fats, sodium, sugar (including high intakes of sweetened drinks) and caffeine, and low in fibre, fruit and vegetables, Vitamin C and beta-carotene
- lack of skills and knowledge to prepare healthy meals
- lack of motivation to shop, cook and prepare healthy meals
- medication side effects, including nausea, thirst, dry mouth, excessive salivation, constipation, reflux, appetite changes, increased cravings for sweet foods and drinks, decreased feelings of fullness, weight gain, sleepiness and increased risk of heart disease, Type 2 Diabetes and metabolic syndrome
- substance use, including alcohol and other drugs
- food insecurity
- cardiometabolic risk factors
- reduced access to multidisciplinary mental health and lifestyle interventions.^{18, 94-96}



How Accredited Practising Dietitians can support Australians living with psychotic disorders

“ **Nutrition therapy delivered by Accredited Practising Dietitians is necessary from the start of treatment with medications that have known metabolic side effects. Early nutrition therapy helps to reduce any disruptions to eating behaviours and associated poor health outcomes.**^{95, 97} ”

Nutrition therapy addresses:

- diet quality
- malnutrition and poor hydration
- increased appetite
- decreased satiety and increased cravings for sweet foods and drinks
- barriers caused by any cognitive deficits
- lack of motivation
- poor memory
- health and food literacy
- food insecurity.⁹⁵

First episode psychosis has a ‘critical period’ for targeting lifestyle behaviour to prevent weight changes and metabolic disturbances later in life.^{15, 98}

The life expectancy of people living with schizophrenia may be reduced by an average of 13 to 15 years compared to the rest of the population. This mortality gap is believed to be widening.⁹⁹⁻¹⁰¹ In 2017, the average life expectancy for people with schizophrenia was 64.7 years - 59.9 years for men and 67.6 years for women.⁹⁹

This mortality gap is due to poor physical health, including preventable risk factors that lead to heart disease, Type 2 Diabetes and chronic obstructive pulmonary disease.¹⁸ Social determinants of health, including poverty, access to appropriate care and decreased social connectedness also contribute to the mortality gap.¹⁰¹ Poor diet quality and excessive energy intake are leading risk factors for cardiometabolic disease.¹⁸ Two thirds of deaths in people with schizophrenia are caused by poor physical health, contributing more than deaths by suicide.⁹⁷ Suicide accounts for less than 15% of premature deaths.⁹¹

It is vital for people living with schizophrenia and other psychotic disorders to be able to access a dietitian as an ongoing part of multidisciplinary team care.⁹⁵ It is essential that metabolic monitoring and referral systems are in place for individuals with mental health conditions for early detection of physiological changes associated with poorer physical health.¹⁰²

“ **Ongoing reviews with a dietitian supports sustainable lifestyle behaviour change, and may reduce the significant life expectancy gap.**⁹⁵ ”

Nutrition therapy is a key contributor to improved health outcomes for people living with schizophrenia and other psychotic disorders.⁹⁵ ”



The impact of nutrition in mental health conditions with co-existing intellectual disability

Description

Disability is the umbrella term for any impairment of body structure or function, limitation in activities (tasks a person does) or restriction in participation (involvement of the person in life situations).

There are a range of disabilities including:

- neurodevelopmental disorders, eg, intellectual disability, Autism Spectrum Disorder, Attention-Deficit/Hyperactivity Disorder
- physical disability
- acquired brain injury
- neurological disability
- psychosocial disability
- sensory disability
- developmental delay.

While mental health conditions affect nearly half the Australian population, including people living with disability, people living with intellectual disability are 2 to 3 times more likely to experience a mental health condition at all stages of life than other people. It is for this reason this section focuses on people living with intellectual disability.

Intellectual disability is characterised by an impairment of cognitive abilities which affects a person's capacity to learn, communicate and/or process and retain information. Intellectual disability also impacts a person's adaptive and social behaviours and can affect their learning, understanding, problem solving, home living and social skills, communication, selfcare, self-direction and work.^{103,104}

While most people with intellectual disability are born with the condition, an intellectual disability can develop at any point until the brain reaches maturity. Onset of intellectual disability can be due to a range of factors, including genetic and neurological factors, and trauma.¹⁰⁵

“Diet-related health issues are frequently experienced by people living with intellectual disability.”¹⁰⁶

People living with intellectual disability are also living longer, calling for a growing need to understand and address physical health issues of older people living with intellectual disability.^{104,107}

Prevalence

In 2012, it was estimated 668,100 Australians (2.9% of the population) were living with an intellectual disability.¹⁰⁸ The prevalence of intellectual disability in Aboriginal and Torres Strait islander populations is higher.¹⁰⁹

In addition, psychiatric disorders are more prevalent in people with intellectual disability compared to the rest of the population. Mental health conditions can also be underdiagnosed in populations with intellectual disability due to challenges of establishing diagnoses using standard clinical assessments.^{106,110}



Impacts on nutrition status

Mental health conditions with co-existing intellectual disability can impact a person's:

- food preferences, intake and diet quality
- capacity to engage in and control food purchase and preparation
- diet-related physical health, including risk of heart and gut problems
- physical activity.

Each of these issues can impact on nutrition status quite significantly. A carer or support staff's food-related knowledge and skills, if limited, can also negatively impact on the nutrition status of people in their care who are living with a mental health condition with co-existing intellectual disability.¹¹¹

The food preferences of people living with intellectual disability can be highly selective due to sensory issues or selective interests. They may prefer to eat only certain familiar foods, rejecting others or different ways of preparing them.¹¹² As a result, they may not meet their nutritional needs. Such restrictive eating patterns can also lead to a diagnosed eating disorder.

Research shows that people with intellectual disability tend to consume low-quality diets that:

- are high in processed, high-fat, and high-sugar foods and drinks, eg.
- takeaway, soft drinks, cordial, lollies, pastries, fast-food
- are low in dietary fibre, eg, fresh fruit, vegetables
- include larger portion sizes
- include frequent mid-meals and/or snacks throughout the day.¹¹²

Food insecurity in Australia affects approximately 5% of the population, with increased incidence amongst people experiencing physical or intellectual disability.¹¹³ Food insecurity is associated with general poor health and increased rates of coronary heart disease and Type 2 Diabetes.¹¹⁴

Food literacy in this population can be limited. People living with mental health conditions and co-existing intellectual disability can experience little control over their food choices and few opportunities to develop their skills and understanding around food choices, nutrition, purchasing or preparation.

The physical health of people living with mental health conditions and co-existing intellectual disability can be impacted by the side effects of psychotropic and other medications, poor lifestyle behaviours and poor health literacy. These issues can contribute to a higher risk than the rest of the population of developing chronic diseases including cardiovascular disease, Type 2 Diabetes, different types of cancer, osteoporosis, liver disease and sleep apnoea.¹¹¹

Poor gut health may also be a concern and can impact on nutrition status and quality of life. People living with intellectual disability are up to 3 times more likely to experience gut health problems compared to the rest of the population.¹⁰⁴ Common conditions include constipation and gastro-oesophageal reflux disease (GORD).^{115, 116} GORD may contribute to food refusal and food aversions.¹¹⁶

All Australians can improve their health through exercise. The same barriers to engage in physical activity exist for people living with mental health conditions and co-existing intellectual disability as for the rest of the population. These barriers include low motivation and limited resources such as money and time.



For people with intellectual disability barriers can also include a lack of access to supportive and suitable environments for physical activity.¹¹¹ Low levels of physical activity can impact on a person's nutritional needs and health outcomes.

In the last 15 years there has been a significant increase in life expectancy for people living with intellectual disability. Disparity still exists as severity of impairment increases, likely related to increased prevalence of co-existing health conditions.¹¹⁷ Dehydration and malnutrition are common causes of death in older adults with intellectual disability.¹⁰⁴

How Accredited Practising Dietitians can support Australians living with mental health conditions and co-existing intellectual disability

As part of a multidisciplinary team, which may include the person's family, friends, carers and formal supports, Accredited Practising Dietitians play a pivotal role in helping people living with mental health conditions and co-existing intellectual disability address issues that impact on their nutrition status by collaborating with the person to optimise function (body functions, executing activities, community participation) through positive nutrition, eating patterns, and eating-behaviour change.

“ Accredited Practising Dietitians play a pivotal role in helping people living with mental health conditions and co-existing intellectual disability address issues that impact on their nutrition status ”

Strategies may include:

- collaborative creation of an eating pattern plan, with ongoing refinement and review of benefit
- imparting nutrition knowledge based on learning needs, to build capacity and empowerment to make decisions
- supporting nutrition behaviour change, including advocating for and fostering environments which promote helpful choices
- skill building, including meal prep and food literacy to facilitate self-care and management.



REFERENCES

1. Australian Bureau of Statistics. National Study of Mental Health and Wellbeing. 2023 [Available from: <https://www.abs.gov.au/statistics/health/mental-health/national-study-mental-health-and-wellbeing/2020-2022>.
2. Hay P, Girosi F, Mond J. Prevalence and sociodemographic correlates of DSM-5 eating disorders in the Australian population. *Journal of eating disorders*. 2015;3(1):1-7
3. National Eating Disorders Collaboration. Eating Disorders in Australia. NEDC; 2023 [Available from: <https://nedc.com.au/eating-disorders/eating-disorders-explained/eating-disorders-in-australia#:~:text=Prevalence,%2C%204%25%20of%20the%20population>.
4. Wooldridge T, Lytle PP. An overview of anorexia nervosa in males. *Eating disorders*. 2012;20(5):368-78
5. Morgan VA, Waterreus A, Jablensky A, Mackinnon A, McGrath JJ, Carr V, et al. People living with psychotic illness 2010. Report on the second Australian national survey. 2011
6. Australian Bureau of Statistics. Mental Health. Australian Bureau of Statistics; 2018 Available from: <https://www.abs.gov.au/statistics/health/mental-health/mental-health/latest-release>.
7. Paxton SJ, Hay P, Touyz SW, Forbes D, Madden S, Girosi F, et al. Paying the price: The economic and social impact of eating disorders in Australia. 2012
8. Australian Institute of Health and Welfare. National Drug Strategy Household Survey 2019. Canberra: AIHW; 2020.
9. Coryell W. MSD Manuals: Overview of Mood Disorders. Merck&Co, Inc; 2023 [Available from: <https://www.msmanuals.com/en-au/home/mental-health-disorders/mood-disorders/overview-of-mood-disorders>.
10. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. Fifth ed. Arlington VA: American Psychiatric Publishing; 2013.
11. Webster-Gandy J, Madden A, Holdsworth M. Oxford handbook of nutrition and dietetics: Oxford University Press; 2020.
12. Lawrence D, Hancock KJ, Kisely S. The gap in life expectancy from preventable physical illness in psychiatric patients in Western Australia: retrospective analysis of population based registers. *Bmj*. 2013;346
13. Latoo J, Mistry M, Dunne FJ. Physical morbidity and mortality in people with mental illness. *Br J Med Pract*. 2013;6(3):621-3
14. Pearsall R, Praveen KT, Pelosi A, Geddes J. Dietary advice for people with schizophrenia. *Cochrane Database of Systematic Reviews*. 2016(3)
15. Teasdale SB, Ward PB, Rosenbaum S, Samaras K, Stubbs B. Solving a weighty problem: systematic review and meta-analysis of nutrition interventions in severe mental illness. *The British Journal of Psychiatry*. 2017;210(2):110-8
16. Clarke DM, Currie KC. Depression, anxiety and their relationship with chronic diseases: a review of the epidemiology, risk and treatment evidence. *Medical Journal of Australia*. 2009;190:S54-S60
17. Knol MJ, Twisk JW, Beekman AT, Heine RJ, Snoek FJ, Pouwer F. Depression as a risk factor for the onset of type 2 diabetes mellitus. A meta-analysis. *Diabetologia*. 2006;49:837-45
18. Firth J, Siddiqi N, Koyanagi A, Siskind D, Rosenbaum S, Galletly C, et al. The Lancet Psychiatry Commission: a blueprint for protecting physical health in people with mental illness. *The Lancet Psychiatry*. 2019;6(8):675-712
19. Riedl D, Schuessler G. Prevalence of depression and cancer—a systematic review. *Zeitschrift für Psychosomatische Medizin und Psychotherapie*. 2021;68(1):74-86
20. Wang Y-H, Li J-Q, Shi J-F, Que J-Y, Liu J-J, Lappin JM, et al. Depression and anxiety in relation to cancer incidence and mortality: a systematic review and meta-analysis of cohort studies. *Molecular psychiatry*. 2020;25(7):1487-99
21. Evans DL, Charney DS, Lewis L, Gorman JM, Krishnan KRR, et al. Mood disorders in the medically ill: scientific review and recommendations. *Biological psychiatry*. 2005;58(3):175-89



REFERENCES

22. Luppino FS, de Wit LM, Bouvy PF, Stijnen T, Cuijpers P, Penninx BW, et al. Overweight, obesity, and depression: a systematic review and meta-analysis of longitudinal studies. *Archives of general psychiatry*. 2010;67(3):220-9
23. Leboyer M, Soreca I, Scott J, Frye M, Henry C, Tamouza R, et al. Can bipolar disorder be viewed as a multi-system inflammatory disease? *Journal of affective disorders*. 2012;141(1):1-10
24. McIntyre RS, Danilewitz M, Liauw SS, Kemp DE, Nguyen HT, Kahn LS, et al. Bipolar disorder and metabolic syndrome: an international perspective. *Journal of affective disorders*. 2010;126(3):366-87
25. Malhi GS, Bell E, Bassett D, Boyce P, Bryant R, Hazell P, et al. The 2020 Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for mood disorders. *Australian & New Zealand Journal of Psychiatry*. 2021;55(1):7-117
26. Jacka FN, Berk M. Depression, diet and exercise. *The Medical Journal of Australia*. 2013;199(6):S21-S3
27. Jacka FN, O'Neil A, Opie R, Itsiopoulos C, Cotton S, Mohebbi M, et al. A randomised controlled trial of dietary improvement for adults with major depression (the 'SMILES' trial). *BMC medicine*. 2017;15(1):1-13
28. Lassale C, Batty GD, Baghdadli A, Jacka F, Sánchez-Villegas A, Kivimäki M, et al. Healthy dietary indices and risk of depressive outcomes: a systematic review and meta-analysis of observational studies. *Molecular psychiatry*. 2019;24(7):965-86
29. Lai JS, Hiles S, Bisquera A, Hure AJ, McEvoy M, Attia J. A systematic review and meta-analysis of dietary patterns and depression in community-dwelling adults. *The American journal of clinical nutrition*. 2014;99(1):181-97
30. Psaltopoulou T, Sergentanis TN, Panagiotakos DB, Sergentanis IN, Kosti R, Scarmeas N. Mediterranean diet, stroke, cognitive impairment, and depression: a meta-analysis. *Annals of neurology*. 2013;74(4):580-91
31. Burrows T, Teasdale S, Rocks T, Whatnall M, Schindlmayr J, Plain J, et al. Effectiveness of dietary interventions in mental health treatment: A rapid review of reviews. *Nutrition & Dietetics*. 2022;79(3):279-90
32. Parletta N, Zarnowiecki D, Cho J, Wilson A, Bogomolova S, Villani A, et al. A Mediterranean-style dietary intervention supplemented with fish oil improves diet quality and mental health in people with depression: A randomized controlled trial (HELFI-MED). *Nutritional neuroscience*. 2019;22(7):474-87
33. Skinner JA, Leary M, Whatnall M, Collins RA, Pursey KM, Verdejo-Garcia A, et al. A three-arm randomised controlled trial of a telehealth intervention targeting improvement in addictive eating for Australian adults (the TRACE program). *Appetite*. 2024;195:107211
34. Sarris J, Logan AC, Akbaraly TN, Amminger GP, Balanzá-Martínez V, Freeman MP, et al. Nutritional medicine as mainstream in psychiatry. *The Lancet Psychiatry*. 2015;2(3):271-4
35. Firth J, Marx W, Dash S, Carney R, Teasdale SB, Solmi M, et al. The effects of dietary improvement on symptoms of depression and anxiety: a meta-analysis of randomized controlled trials. *Psychosomatic medicine*. 2019;81(3):265
36. Pasco JA, Nicholson GC, Williams LJ, Jacka FN, Henry MJ, Kotowicz MA, et al. Association of high-sensitivity C-reactive protein with de novo major depression. *The British Journal of Psychiatry*. 2010;197(5):372-7
37. Jacka FN, Kremer PJ, Berk M, de Silva-Sanigorski AM, Moodie M, Leslie ER, et al. A prospective study of diet quality and mental health in adolescents. *PloS one*. 2011;6(9):e24805
38. Jacka F. *Brain changer: The good mental health diet*: Macmillan Publishers Aus.; 2019.
39. Aslam H, Green J, Jacka FN, Collier F, Berk M, Pasco J, et al. Fermented foods, the gut and mental health: a mechanistic overview with implications for depression and anxiety. *Nutritional neuroscience*. 2020;23(9):659-71
40. Wallace CJ, Milev R. The effects of probiotics on depressive symptoms in humans: a systematic review. *Annals of general psychiatry*. 2017;16(1):1-10
41. Mörk S, Wagner-Skacel J, Lahousen T, Lackner S, Holasek SJ, Bengesser SA, et al. The role of nutrition and the gut-brain axis in psychiatry: a review of the literature. *Neuropsychobiology*. 2020;79(1):80-8
42. Dawson S, Dash S, Jacka F. The importance of diet and gut health to the treatment and prevention of mental disorders. *International review of neurobiology*. 2016;131:325-46



REFERENCES

43. Canadian Collaborative Mental Health Initiative. The Role of Dietitians in Collaborative Primary Mental Health Care Programs. 2006.
44. DAA ESSA and APS. Joint Position Statement: Addressing the Physical Health of People with Mental Illness. 2017.
45. Segal L, Twizeyemariya A, Zarnowiecki D, Niyonsenga T, Bogomolova S, Wilson A, et al. Cost effectiveness and cost-utility analysis of a group-based diet intervention for treating major depression—the HELFIMED trial. *Nutritional neuroscience*. 2020;23(10):770-8
46. Chatterton ML, Mihalopoulos C, O'Neil A, Itsiopoulos C, Opie R, Castle D, et al. Economic evaluation of a dietary intervention for adults with major depression (the “SMILES” trial). *BMC Public Health*. 2018;18(1):1-11
47. Guu T-W, Mischoulon D, Sarris J, Hibbeln J, McNamara RK, Hamazaki K, et al. International society for nutritional psychiatry research practice guidelines for omega-3 fatty acids in the treatment of major depressive disorder. *Psychotherapy and psychosomatics*. 2019;88(5):263-73
48. Whelan K. *Advanced nutrition and dietetics in obesity*: John Wiley & Sons; 2018.
49. Hay P, Chinn D, Forbes D, Madden S, Newton R, Sugenor L, et al. Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for the treatment of eating disorders. *Australian and New Zealand Journal of Psychiatry*. 2014;48(11):1-62 <https://www.ranzcp.org/getmedia/0ee7d923-af5f-44ad-b411-46edf10ba0b8/eating-disorders-cpg.pdf>
50. Ozier AD, Henry BW. Position of the American Dietetic Association: nutrition intervention in the treatment of eating disorders. *Journal of the American Dietetic Association*. 2011;111(8):1236-41
51. Butterfly Foundation. Disordered eating. 2024 [Available from: <https://butterfly.org.au/eating-disorders/eating-disorders-explained/disordered-eating/>].
52. Mitchison D, Mond J, Bussey K, Griffiths S, Trompeter N, Lonergan A, et al. DSM-5 full syndrome, other specified, and unspecified eating disorders in Australian adolescents: prevalence and clinical significance. *Psychological medicine*. 2020;50(6):981-90
53. Limbers CA, Cohen LA, Gray BA. Eating disorders in adolescent and young adult males: prevalence, diagnosis, and treatment strategies. *Adolescent Health, Medicine and Therapeutics*. 2018;111-6
54. Shu CY, Limburg K, Harris C, McCormack J, Hoiles KJ, Hamilton MJ, et al. Clinical presentation of eating disorders in young males at a tertiary setting. *Journal of eating disorders*. 2015;3(1):1-7
55. The National Eating Disorders Collaboration. *An Integrated Response to Complexity: National Eating Disorders Framework 2012*. Sydney; 2012.
56. Pereira RF, Alvarenga M. Disordered eating: identifying, treating, preventing, and differentiating it from eating disorders. *Diabetes Spectrum*. 2007;20(3):141-8
57. Hickson M, Smith S. *Advanced nutrition and dietetics in nutrition support*: John Wiley & Sons; 2018.
58. Hay PP, Bacaltchuk J, Stefano S, Kashyap P. Psychological treatments for bulimia nervosa and bingeing. *Cochrane database of systematic reviews*. 2009(4)
59. Mehler PS, Rylander M. Bulimia Nervosa—medical complications. *Journal of eating disorders*. 2015;3(1):1-5
60. Arcelus J, Mitchell AJ, Wales J, Nielsen S. Mortality rates in patients with anorexia nervosa and other eating disorders: a meta-analysis of 36 studies. *Archives of general psychiatry*. 2011;68(7):724-31
61. Katzman DK. Medical complications in adolescents with anorexia nervosa: a review of the literature. *International Journal of Eating Disorders*. 2005;37(S1):S52-S9
62. Royal College of Psychiatrists. CR130: Guidelines for the Nutritional Management of Anorexia Nervosa. Royal College of Psychiatrists; 2005.
63. Mehler PS, Brown C. Anorexia nervosa—medical complications. *Journal of eating disorders*. 2015;3:1-8
64. Spencer J. *Fast Facts About Substance Use Disorders: What Every Nurse, APRN, and PA Needs to Know*: Springer Publishing Company; 2018.
65. Denning P, Little J. *Over the influence: The harm reduction guide to controlling your drug and alcohol use*: Guilford Publications; 2017.
66. Griswold MG, Fullman N, Hawley C, Arian N, Zimsen SR, Tymeson HD, et al. Alcohol use and burden for 195 countries and territories, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016. *The Lancet*. 2018;392(10152):1015-35



REFERENCES

67. Queensland Government. Dual diagnosis clinical guidelines: co-occurring mental health and alcohol and other drug problems. Brisbane: Queensland Health; 2010.
68. Iudici A, Girolimetto R, Volponi G, Eletto A. Dual diagnosis and application problems in the use of the construct: A review of literature. *The Journal of Nervous and Mental Disease*. 2020;208(3):181-9
69. Onyeka IN, Collier Høegh M, Nåheim Eien EM, Nwaru BI, Melle I. Comorbidity of physical disorders among patients with severe mental illness with and without substance use disorders: a systematic review and meta-analysis. *Journal of dual diagnosis*. 2019;15(3):192-206
70. Hynan C. An Introduction to Dual Diagnosis: key concepts for dietitians. St Vincents Hospital: Victorian Dual Diagnosis Initiative; 2013.
71. Roberts BM, Maybery D. Dual diagnosis discourse in Victoria Australia: the responsiveness of mental health services. *Journal of dual diagnosis*. 2014;10(3):139-44
72. Peacock A, Uporova J, Karlsson A, Price O, Gibbs D, Swanton R, et al. Australian drug trends 2020: key findings from the National Illicit Drug Reporting System (IDRS) interviews. 2021
73. Ross LJ, Wilson M, Banks M, Rezannah F, Daglish M. Prevalence of malnutrition and nutritional risk factors in patients undergoing alcohol and drug treatment. *Nutrition*. 2012;28(7-8):738-43
74. Wiss DA. The role of nutrition in addiction recovery: what we know and what we don't. *The assessment and treatment of addiction*. 2019:21-42
75. Department of Health. National Drug Strategy 2017-2026. Canberra: Commonwealth of Australia; 2017.
76. Kaiser SK, Prendergast K, Ruter TJ. Nutritional links to substance abuse recovery. *Journal of Addictions Nursing*. 2008;19(3):125-9
77. Jeynes KD, Gibson EL. The importance of nutrition in aiding recovery from substance use disorders: A review. *Drug and alcohol dependence*. 2017;179:229-39
78. Davidson K NE, Chandrasekera U, Seely C, Cairns J, Mailhot-Hall L, et al. *Substance Use and Addictive Disorders*. Toronto: Dietitians of Canada; 2012.
79. Mahboub N, Rizk R, Karavetian M, de Vries N. Nutritional status and eating habits of people who use drugs and/or are undergoing treatment for recovery: a narrative review. *Nutrition reviews*. 2021;79(6):627-35
80. Western Australia Network of Alcohol and Other Drug Agencies. *Healthy Eating for Wellbeing: A Nutrition Guide for Alcohol and Other Drug Agency Workers*. 2011.
81. Schmetzer AD. Deinstitutionalization and dual diagnosis. *Journal of dual diagnosis*. 2007;3(2):95-101
82. Davison KM, Holloway C, Gondara L, Hatcher AS. Independent associations and effect modification between lifetime substance use and recent mood disorder diagnosis with household food insecurity. *PLoS One*. 2018;13(1):e0191072
83. Miewald C, McCann E, Temenos C, McIntosh A. "I do my best to eat while I'm using": Mapping the foodscapes of people living with HIV/AIDS who use drugs. *Social science & medicine*. 2019;226:96-103
84. Pellowski JA, Huedo-Medina TB, Kalichman SC. Food insecurity, substance use, and sexual transmission risk behavior among people living with HIV: a daily level analysis. *Archives of sexual behavior*. 2018;47:1899-907
85. Whittle HJ, Sheira LA, Frongillo EA, Palar K, Cohen J, Merenstein D, et al. Longitudinal associations between food insecurity and substance use in a cohort of women with or at risk for HIV in the United States. *Addiction*. 2019;114(1):127-36
86. Wiss DA, Schellenberger M, Prelep ML. Registered dietitian nutritionists in substance use disorder treatment centers. *Journal of the Academy of Nutrition and Dietetics*. 2018;118(12):2217-21
87. Robinson LD, Kelly PJ, Deane FP, Reis SL. Exploring the relationships between eating disorders and mental health in women attending residential substance use treatment. *Journal of Dual Diagnosis*. 2019;15(4):270-80



REFERENCES

88. Cowan J, Devine C. Food, eating, and weight concerns of men in recovery from substance addiction. *Appetite*. 2008;50(1):33-42
89. Drach LL, Maher JE, Braun MJ, Murray SL, Sazie E. Substance use, disordered eating, and weight gain: describing the prevention and treatment needs of incarcerated women. *Journal of Correctional Health Care*. 2016;22(2):139-45
90. McGrath J, Saha S, Chant D, Welham J. Schizophrenia: a concise overview of incidence, prevalence, and mortality. *Epidemiologic reviews*. 2008;30(1):67-76
91. Charlson FJ, Ferrari AJ, Santomauro DF, Diminic S, Stockings E, Scott JG, et al. Global epidemiology and burden of schizophrenia: findings from the global burden of disease study 2016. *Schizophrenia bulletin*. 2018;44(6):1195-203
92. Better Health Channel. Schizoaffective disorder. VicHealth; 2022 [Available from: <https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/schizoaffective-disorder#about-schizoaffective-disorder>].
93. Cleveland Clinic. Schizophreniform disorder. Cleveland Clinic; 2024 [Available from: <https://my.clevelandclinic.org/health/diseases/9571-schizophreniform-disorder>].
94. Šagud M, Mihaljević-Peleš A, Mück-Šeler D, Pivac N, Vuksan-Ćusa B, Brataljenović T, et al. Smoking and schizophrenia. *Psychiatria Danubina*. 2009;21(3):371-5
95. Teasdale SB, Ward PB, Samaras K, Firth J, Stubbs B, Tripodi E, et al. Dietary intake of people with severe mental illness: systematic review and meta-analysis. *The British Journal of Psychiatry*. 2019;214(5):251-9
96. Jean-Baptiste M, Tek C, Liskov E, Chakunta UR, Nicholls S, Hassan AQ, et al. A pilot study of a weight management program with food provision in schizophrenia. *Schizophrenia Research*. 2007;96(1-3):198-205
97. Correll CU, Solmi M, Veronese N, Bortolato B, Rosson S, Santonastaso P, et al. Prevalence, incidence and mortality from cardiovascular disease in patients with pooled and specific severe mental illness: a large-scale meta-analysis of 3,211,768 patients and 113,383,368 controls. *World Psychiatry*. 2017;16(2):163-80
98. Spelman LM, Walsh PI, Sharifi N, Collins P, Thakore JH. Impaired glucose tolerance in first-episode drug-naïve patients with schizophrenia. *Diabetic Medicine*. 2007;24(5):481-5
99. Hjorthøj C, Stürup AE, McGrath JJ, Nordentoft M. Years of potential life lost and life expectancy in schizophrenia: a systematic review and meta-analysis. *The Lancet Psychiatry*. 2017;4(4):295-301
100. Kritharides L, Chow V, Lambert TJ. Cardiovascular disease in patients with schizophrenia. *The Medical journal of Australia*. 2017;207(4):179
101. Walker ER, McGee RE, Druss BG. Mortality in mental disorders and global disease burden implications: a systematic review and meta-analysis. *JAMA psychiatry*. 2015;72(4):334-41
102. Chen R, Lambert T, Kinsella J, Chapman L, Kamp M, Conn J. Australian Diabetes Society Position Statement: The prevention and management of type 2 diabetes in the context of psychotic disorders. 2017
103. Kendall K, Owen MJ. Intellectual disability and psychiatric comorbidity: challenges and clinical issues. *Psychiatric Times*. 2015;32(5):60-3
104. Kolset SO, Nordstrøm M, Hope S, Retterstøl K, Iversen PO. Securing rights and nutritional health for persons with intellectual disabilities—a pressing challenge. *Food & Nutrition Research*. 2018;62
105. Janicki MP, Organization WH. Ageing and intellectual disabilities: improving longevity and promoting healthy ageing—summative report. 2001
106. Department of Developmental Disability Neuropsychiatry. Accessible mental health services for People with an Intellectual Disability. A Guide for Providers: Department of Developmental Disability Neuropsychiatry; 2014.
107. Coppus AM. People with intellectual disability: what do we know about adulthood and life expectancy? *Developmental disabilities research reviews*. 2013;18(1):6-16
108. Australian Bureau of Statistics. 4433.0.55.003 - Intellectual Disability, Australia, 2012. ABS; 2014 [Available from: [https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/4433.0.55.003main+features102012#:~:text=disability%20\(Media%20Release\)-,HOW%20MANY%20PEOPLE%20HAVE%20INTELLECTUAL%20DISABILITY%3F,disability%20in%20the%202009%20SDAC](https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/4433.0.55.003main+features102012#:~:text=disability%20(Media%20Release)-,HOW%20MANY%20PEOPLE%20HAVE%20INTELLECTUAL%20DISABILITY%3F,disability%20in%20the%202009%20SDAC)].
109. Australian Institute of Health and Welfare. Specialised support and informal care for First Nations people with disability. AIHW; 2023 [Available from: <https://www.aihw.gov.au/reports/australias-welfare/disability-support-for-indigenous-australians>].
110. Mason J, Scior K. 'Diagnostic overshadowing' amongst clinicians working with people with intellectual disabilities in the UK. *Journal of Applied Research in Intellectual Disabilities*. 2004;17(2):85-90



REFERENCES

111. Salomon C, Whittle E, Bellamy J, Evans E, Teasdale S, Samaras K, et al. A qualitative exploration of barriers and enablers of healthy lifestyle engagement for older Australians with intellectual disabilities. *Research and Practice in Intellectual and Developmental Disabilities*. 2019;6(2):182-91
112. Adolfsson P, Mattsson Sydner Y, Fjellström C, Lewin B, Andersson A. Observed dietary intake in adults with intellectual disability living in the community. *Food & nutrition research*. 2008;52(1):1857
113. Burns C. A review of the literature describing the link between poverty, food insecurity and obesity with specific reference to Australia: VicHealth Melbourne, Australia;; 2004.
114. Turrell G, Kavanagh AM. Socio-economic pathways to diet: modelling the association between socio-economic position and food purchasing behaviour. *Public health nutrition*. 2006;9(3):375-83
115. Robertson J, Baines S, Emerson E, Hatton C. Prevalence of constipation in people with intellectual disability: A systematic review. *Journal of Intellectual & Developmental Disability*. 2018;43(4):392-406
116. May ME, Kennedy CH. Health and problem behavior among people with intellectual disabilities. *Behavior Analysis in Practice*. 2010;3:4-12
117. Bittles AH, Petterson BA, Sullivan SG, Hussain R, Glasson EJ, Montgomery PD. The influence of intellectual disability on life expectancy. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*. 2002;57(7):M470-M2





Nourishing

mind, body and brain






Find a dietitian near you

Find an Accredited Practising Dietitian (APD) to support your health needs.



Contact us

-  PO Box 2087 Woden ACT 2606
-  02 6189 1200
-  info@dietitiansaustralia.org.au

Follow us

-  @dietitiansaus
-  @dietitiansaus
-  @dietitiansaus
-  @dietitians-australia

dietitiansaustralia.org.au/dietitians-week

#MindBodyBrain #DietitiansWeek2024

