

Ausdance National

FACT SHEET

Fuelling the Dancer

What this Fact Sheet covers

Practical nutrition guidance for dancers covering energy availability, macronutrients, micronutrients and hydration — and why each matters for performance, recovery and long-term health.

Who is this for?

Dancers of all levels and ages, teachers, studio owners, parents and carers.

Why this matters

To perform at their best, dancers need to be well-fuelled. This means eating enough food and eating a diverse range of nourishing foods containing carbohydrates, fats, proteins, micronutrients and fluids. Under-fuelling is one of the most significant and under-recognised risks to dancer health, performance and career longevity.

Energy availability

The food we eat provides us with energy to fuel our bodies. It is important that dancers consume enough food to provide energy for both the demands of dance and other physical activities, and for essential daily life processes.

Under-fuelling — or low energy availability — occurs when there is a mismatch between energy provided through food and energy expended through dance and life. When prolonged or severe, this can develop into Relative Energy Deficiency in Sport (REDs), which negatively impacts both health and performance.

All dancers need sufficient energy to meet the demands of training and performing. Consuming the right amounts and types of food and fluid provides the ‘high-performance fuel’ necessary for optimal training and peak performance.

Strategies to promote adequate fuelling

Eat regularly across the day

Regular meals — breakfast, lunch and dinner — plus snacks in between, help support energy, concentration and recovery throughout a dance day.

Eat a variety of foods from all food groups

The Australian Dietary Guidelines recommend eating from each of the five food groups:

- Grain (cereal) foods, mostly wholegrain and/or high cereal fibre varieties
- Vegetables and legumes/beans
- Fruit
- Lean meats, poultry, fish, eggs, tofu, nuts, seeds and legumes/beans
- Milk, yoghurt, cheese and/or alternatives

For information about food groups and recommended daily serves by age and activity level, visit eatforhealth.gov.au.

Adjusting fuelling to reflect training or preparation for events.

In periods of high intensity, or in preparation for periods of high intensity, such as weekends full of dress rehearsals or before competitions or exams, food intake should be adjusted to reflect the body's needs.

First Nations considerations

Nutrition guidance for First Nations dancers must account for the diversity of food cultures, food access contexts and health histories across Aboriginal and Torres Strait Islander Communities. There is no single First Nations experience — communities vary enormously by Country, Language group, urban or remote context, and individual circumstance.

Iron deficiency is sometimes prevalent among First Nations young people and women. For dancers, iron deficiency directly affects aerobic capacity, muscle endurance, concentration and recovery — all critical to performance. Vitamin D deficiency is also more prevalent in some First Nations communities, despite Australia's climate due to a range of environmental/biological factors. Both deficiencies are manageable with proper assessment and support, and referral to a GP or dietitian should be actively encouraged.

Food insecurity affects a significant proportion of First Nations families, particularly in regional and remote areas. Nutrition guidance that assumes ready access to a full range of fresh foods may be impractical in these contexts. Where possible, studios and programs working with First Nations Communities should seek to understand local food access realities and connect families with relevant community services.

Nutrition discussions in dance settings should be strengths-based, informed by local environment and realities and Culturally affirming. Acknowledging the nutritional value and Cultural importance of Traditional First Nations foods and approaching food access challenges with practical support reflects genuine Cultural safety in practice.

Macronutrients

Carbohydrates

Carbohydrate is the major energy source for muscles during heavy training and rehearsing. Ingested carbohydrate is broken down into glucose and stored in muscle as glycogen — the primary fuel for energy production. Insufficient carbohydrate leads to low glycogen levels, increased fatigue and reduced performance.

It is recommended that dancers consume 4–8 grams of carbohydrate per kilogram of body weight per day. Guidance from an Accredited Sports Dietitian is recommended for individual targets.

- Include complex carbohydrates (cereals, bread, pasta, rice, starchy vegetables) in main meals for sustained energy.
- During long rehearsals, use quick-release simple sugars (fruit, dried fruit, a small cordial drink) to maintain energy levels.
- After dancing, eat carbohydrate within two hours to replenish muscle glycogen stores — the rate of glycogen resynthesis is fastest in this window.

Fats

Healthy fats are essential for:

- providing structure for cell membranes
- forming the insulating layer around nerves
- providing the base of many hormones
- absorbing fat-soluble vitamins (A, D, E and K)
- fuelling muscles during endurance activity and long rehearsals

Sources include olive oil, nuts and seeds, oily fish, avocado, dairy products and animal meat. The estimated need is approximately 1 gram per kilogram of body weight per day. A diet too low in fat can have serious health consequences and impair performance.

Protein

Protein is essential for repairing muscle fibres stressed by dance and exercise, synthesising metabolic enzymes, and fuelling the body. The estimated need is 1–2 grams per kilogram of body weight per day, depending on training load.

Sources include chicken, turkey, lean red meat (also a good source of iron and zinc), tofu, beans, legumes and dairy. Protein powders are not necessary if dietary recommendations are being met — milk powder can be equally effective and far less expensive.

Micronutrients

Vitamins and minerals are needed in relatively small amounts but play vital roles in a wide range of body functions — including energy production, bone health, muscle repair, immune function and oxygen transport.

The IADMS Nutrition Resource Paper (2016, updated 2019) identifies iron, calcium and vitamin D as the three micronutrients of greatest concern for dancers, due to the high prevalence of deficiency and the significant impact on health and performance.

The table below summarises the key micronutrients relevant to dancers, their functions, and their primary food sources.

Micronutrient	Role / Function	Food Sources
VITAMINS		
Vitamin A (beta-carotene)	Antioxidant. Supports muscle repair and recovery from strenuous activity. Essential for immune function and vision.	Liver, oily fish, dairy products, eggs, orange and yellow vegetables (carrots, sweet potato), dark leafy greens.
B Vitamins (B1 thiamin, B2 riboflavin, B3 niacin, B6, B12, folate)	Critical for energy production from carbohydrates, fats and proteins. B12 and folate are essential for red blood cell formation. Deficiency impairs performance and endurance.	Whole grains, lean meat, fish, poultry, dairy, eggs, legumes, nuts, seeds, dark leafy greens. B12 found only in animal products — vegans should supplement.
Vitamin C	Antioxidant essential for repair of stressed muscles and recovery from intense activity. Increases absorption of non-haem (plant-based) iron. Supports immune function and collagen synthesis.	Capsicum (especially red), citrus fruits (oranges, lemons), strawberries, kiwifruit, broccoli, tomatoes.
Vitamin D	Critical for bone mineralisation and calcium absorption. Associated with muscle function, injury prevention and immune health. Dancers who train predominantly indoors are at particular risk of deficiency. Identified by IADMS as one of the three micronutrients of greatest concern for dancers.	Fatty fish (salmon, sardines, mackerel), egg yolks, fortified dairy and plant-based milks. Primary source is sunlight exposure — brief, safe outdoor time daily is recommended for dancers.
Vitamin E	Antioxidant that supports repair of over-stressed muscles and recovery from strenuous activity. Works synergistically with Vitamins A and C.	Nuts and seeds (especially almonds, sunflower seeds), vegetable oils, avocado, dark leafy greens, wholegrains.
Vitamin K	Essential for blood clotting and bone metabolism. Supports calcium regulation in bone tissue.	Dark leafy greens (kale, spinach, broccoli, Brussels sprouts), fermented foods.
MINERALS		
Calcium	Vital for healthy, strong bones. Bone mass is primarily developed in the first two to three decades of life — adequate calcium is essential during this window. Low calcium intake is associated with increased risk of stress fractures. Identified by IADMS as one of the three micronutrients of greatest concern for dancers.	Dairy products (milk, yoghurt, cheese), canned bony fish (sardines, salmon), tofu, almonds, fortified plant-based milks (oat, soy, almond). Vitamin D is required for optimal calcium absorption.
Iron	Carries oxygen in the blood as part of haemoglobin. Essential for energy production in muscle cells. Deficiency leads to fatigue, reduced endurance and impaired performance. Identified by IADMS as one of the three micronutrients of greatest concern for dancers. Female dancers are particularly at risk.	Haem iron (better absorbed): red meat (beef, lamb, kangaroo), chicken, turkey, liver, fish. Non-haem iron (less absorbed): legumes, dark leafy greens, tofu, nuts, seeds, iron-fortified cereals. Eat with Vitamin C to enhance absorption.
Magnesium	Supports calcium absorption and is a component of bone tissue. Important for nerve conduction, muscle contraction and energy metabolism. Involved in over 300 enzymatic reactions.	Dark leafy greens (spinach), nuts and seeds, whole grains, legumes, avocado, dark chocolate.

Micronutrient	Role / Function	Food Sources
Zinc	Component of enzymes involved in energy production and metabolism. Plays a role in red blood cell production, immune function and tissue repair. Often low in dancers with restricted dietary intake.	Red meat (best source), shellfish (oysters), poultry, dairy, legumes, nuts, seeds, whole grains.
Phosphorus	Works with calcium to build and maintain strong bones and teeth. Involved in energy storage and release (ATP). Supports muscle contraction and nerve function.	Dairy products, meat, fish, poultry, eggs, legumes, nuts, whole grains.
Potassium	Regulates fluid balance, muscle contraction and nerve function. Helps prevent muscle cramps. Important for electrolyte balance during and after intense activity.	Bananas, potatoes, sweet potatoes, avocado, leafy greens, tomatoes, dairy, legumes.
Sodium	Key electrolyte for fluid balance and nerve/muscle function. Lost through sweat — important to replenish after intense or prolonged dancing, particularly in hot conditions.	Table salt, processed foods, sports drinks. Most dancers consume adequate amounts; excessive restriction is not recommended in active populations.

Because not all vitamins or minerals occur in all foods, eating a wide variety of foods is the most effective strategy for meeting micronutrient needs. A calorie-restricted or monotonous diet can lead to deficiencies that significantly impair the ability to work and recover.

Dancers should be cautious about taking vitamin and mineral supplements without guidance from a qualified health professional. Excessive amounts can interfere with absorption of other nutrients, and megadoses of some vitamins and minerals can be toxic. Obtaining micronutrients from fresh food is always preferable where possible.

Hydration

Exercise increases heat production and the body cools itself through sweating. Sweat losses during a hard class or long rehearsal can be substantial — up to two litres per hour. Dehydration impairs both physical performance and mental function, making it harder to learn and execute choreography.

- Drink regularly throughout the day — do not wait until thirsty, as the thirst mechanism does not keep pace with the body's fluid needs.
- A water bottle should be part of every dancer's kit. Dancers should be permitted to drink in the studio or theatre where possible.
- Continue increasing fluid intake in the hours after class and rehearsal.
- Avoid carbonated drinks, energy drinks and large quantities of fruit juice.

Monitor hydration by checking urine colour: clear to light yellow = hydrated; yellow to dark yellow = dehydrated. Note: Vitamin B supplements will produce yellow urine regardless of hydration status.

Further reading

Nutrition for Dance and Performance — Challis, J. (2023). Routledge, Taylor & Francis Group.

Australian Dietary Guidelines: eatforhealth.gov.au

Sports Dietitians Australia: sportsdietitians.com.au

Australian Institute of Sport — nutrition factsheets: ais.gov.au

Wellbeing for Dancers: wellbeingfordancers.com.au

Healthy Bones Australia: healthybones.com.au

IADMS resource papers: iadms.org

https://hw.qld.gov.au/make-healthy-happen/health-wellbeing-initiatives/?fwp_sort=title_asc

Acknowledgements and resources

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Ausdance Child Safe Dance Practices: ausdance.org.au/articles/details/child-safe-dance

AIHW — Health and wellbeing of First Nations people: aihw.gov.au/reports/australias-health/indigenous-health-and-wellbeing

Creative Australia — Living Culture (arts and wellbeing): creative.gov.au/research/living-culture-first-nations-arts-participation-and-wellbeing

Reconciliation Australia — Reconciliation Action Plans: reconciliation.org.au

eSafety Commissioner — First Nations resources: esafety.gov.au

13YARN (24/7 crisis support for First Nations people): 13 92 76

Australian Public Service Commission — Cultural Load: apsc.gov.au

ABS National Aboriginal and Torres Strait Islander Health Survey 2022–23: abs.gov.au

National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey 2023: abs.gov.au

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