

Bringing mushrooms from the shadows to centre stage in the Australian Dietary Guidelines

In the world of nutrition, even the most mundane details can have a profound impact on our health and wellbeing. Enter the Australian Dietary Guidelines (ADG) - a comprehensive blueprint designed by the Australian Government to steer us towards better dietary choices.

By Leah Bramich, AMGA

The Australian Dietary Guidelines (ADG) are used by consumers, health care professionals and schools, as the benchmark for dietary advice for all Australians. Nestled within these guidelines, mushrooms are classed as a vegetable.

However, the current (2013) guidelines are under review and due for update in 2025. This provides an opportunity to advocate for a more prominent position for mushrooms, which will help to highlight their unique nutritional composition.

In the current iteration of the ADG, mushrooms find themselves tucked away in the 'other vegetables' subcategory of the 'vegetables and legumes/beans' group. However, mushrooms belong to the Fungi Kingdom, which sets them apart with their distinct nutritional profile and health benefits. This is not recognised in the current ADG, which may be a missed opportunity to improve nutrient intake and generally improve the Australian diet.

The Australian Mushroom Growers Association (AMGA) is advocating for the repositioning of mushrooms in the ADG, using scientific evidence provided by Nutrition Research Australia (NRAUS), via the levy-funded project MU22001 - *Scientific basis for a mushroom food group in the Australian Dietary Guidelines*.

The project consists of four phases, with AMGA talking the lead in Phase 4.

Phase 1: Determine the best strategic pathways to help achieve repositioning in the updated 2025 ADG. This has been completed and a decision was made to advocate for mushrooms to be its own subcategory within a revamped 'vegetable, legumes/beans, and mushrooms' food group.

Phase 2: Collate the relevant evidence to support repositioning in the form of a scientific summary report. This is to include dietary modelling to capture the nutritional impact that such a change would have on key population groups in Australia.

Phase 3: Translation of this science into key messages that will support the mushroom industry with making a submission to the ADG.

Phase 4: The AMGA will independently advocate for a change to the ADG, by using the scientific evidence to initiate a PR campaign.

With Phase 2 of the project (the scientific summary report) now complete, NRAUS have collated some exciting scientific data to help justify why mushrooms are worthy of being highlighted in the ADG.

The report addresses six research questions:

1. What is the biological classification of mushrooms and how does this differ to vegetables?
2. What is the nutritional composition and contribution of mushrooms to the diet and how does this differ to vegetables?
3. What is the significance of mushrooms being a source of vitamin D?
4. What are the key culinary properties of mushrooms and how does these differ from vegetables?
5. What are the unique health effects associated with mushroom consumption and how do these differ from vegetables?
6. What is the effect on nutritional intake if mushrooms were to become their own subcategory within the vegetable food group?

The key findings are summarised in the table below.

Table 1. Key findings of the scientific report relating to a mushrooms sub- category within the vegetables core food group of the Australian Dietary Guidelines.

Biologically distinct	<ul style="list-style-type: none"> • Mushrooms are not vegetables and belong to a distinct biological kingdom, fungi.
Nutritionally distinct	<ul style="list-style-type: none"> • Mushrooms provide a unique set of nutrients to the diet that is different to vegetables. • Mushrooms also contain a different complement of bioactives to vegetables. • Dietary modelling has shown that increasing mushroom intake can make a significant contribution to the intake of key dietary nutrients that vegetables do not provide.
Vitamin D is a key distinguishing ingredient	<ul style="list-style-type: none"> • Mushrooms are a source of vitamin D and, when exposed to UV light, provide 100-300% of dietary needs. • Vitamin D deficiency is a global problem with no clear solution. • Vitamin D intakes in Australia are low and it is difficult to meet vitamin D needs. • There is precedent in dietary guidelines to recognise foods with unique nutrient compositions or different 'distinguishing' nutrients, yet the current ADG do not recognise the unique nutritional composition of mushrooms.
Culinary distinct	<ul style="list-style-type: none"> • Mushrooms have unique culinary properties from vegetables including an umami flavour and meat-like texture. • Mushrooms can be used as meat substitutes with comparable or increased liking scores and improved nutrient intakes. • The substitution of meat with mushrooms can provide cost savings and environmental benefits.
Unique health benefits	<ul style="list-style-type: none"> • Unlike vegetables, UV-exposed mushrooms improve vitamin D status and may reduce ovarian cancer risk. • This is due to their bioactive profile, which is distinct from vegetables.
Validated by dietary modelling	<ul style="list-style-type: none"> • Current recommended diets in the ADG are deficient in vitamin D and vegetarian diets are deficient in vitamin D and selenium. • The adoption of a new 'mushrooms' subcategory of vegetables will produce notable increases in vitamin D intakes for adult males and females. • This effect is amplified with UV-exposed mushrooms, where vitamin D needs were met with as little as 1 x 75 gram serve per week for women aged 19-30 years. • One 75 g serve of mushrooms per day also enabled ovo-lacto vegetarian adults to meet their selenium requirements.

The Australian Dietary Guidelines (ADG) aim to support health and provide Australians with a sufficient intake of all nutrients within a diet. This is achieved by grouping foods based on similar nutritional compositions. However, the current ADG do not meet vitamin D needs or acknowledge the distinct nutritional composition of mushrooms.

Scientific evidence supports the claim that mushrooms have a unique nutritional composition, including being

a source of vitamin D, which is explained by their unique biology.

Dietary modelling confirmed that categorising mushrooms as its own subcategory of foods within the 'Vegetables and legumes/beans' food group would have a notable impact on vitamin D intake. Their culinary properties are also diverse to vegetables, and they can help to reduce sodium and saturated fat intake, and increase fibre and potassium intake, via meat replacement in meals.

Together, the evidence shows that revamping the position of mushrooms within the ADG has a beneficial effect on modelled micronutrient intakes in the Australian population and the potential to make a significant contribution to solving current public health challenges.

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Australian Guide to Healthy Eating

Enjoy a wide variety of nutritious foods from these five food groups every day.

Drink plenty of water.



Use small amounts



Only sometimes and in small amounts

