Aspartame questions answered

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The safety of the artificial sweetener aspartame has recently been reassessed by two arms of the World Health Organisation (WHO): the International Agency for Research on Cancer (IARC) and Joint Expert Committee on Food Additives (JECFA).

On 14 July 2023, IARC and JECFA in a joint statement concluded that although aspartame is a possible carcinogen, the current acceptable daily intake of 40mg/kg body weight remains accurate.

The two reports found no convincing evidence that aspartame has adverse effects on humans when consumed in moderation.

This means that the levels at which aspartame can be considered unsafe are well in excess of those consumed through food and those approved under the Joint Australia New Zealand Food Standards Code.

Here are some frequently asked questions about aspartame and its potential health risks.

What is aspartame?

Aspartame is an intense sweetener about 200 times sweeter than sugar.

It consists of two amino acids, phenylalanine and aspartic acid, which are normal components of proteins in our body and in our food. The phenylalanine in aspartame has been slightly modified to enhance sweetness.

Which foods is it used in?

It is used as a table-top sweetener and to replace sugar in foods, including diet drinks, dairy products, sweets, weight-control products and chewing gum.

Does aspartame need to be listed as an ingredient in New Zealand?

Yes. Aspartame is regulated as a food additive under the Australia New Zealand Food Standards Code, and it must be included in the ingredients list as sweetener (aspartame) or using its international food additive number sweetener (951). It is also found in food additive aspartame-acesulphame salt (962).

When aspartame is present in a food, the label must include a note that the product contains phenylalanine. This is due to a rare inherited disease (phenylketonuria) where those affected have limited ability to metabolise the amino acid phenylalanine.

How is aspartame in food regulated in New Zealand?

The Australia New Zealand Food Standards Code allows intense sweeteners, including aspartame, to be used in an amount necessary to replace, either wholly or partially, the sweetness normally provided by sugars.

This means that if a 355ml can of a regular soft drink normally contains around 38g of sugar, then the diet soft drink version would be permitted to have a maximum of around 0.19g of aspartame.

Maximum permitted levels of aspartame are set for some foods, including confectionery, electrolyte drinks, and brewed soft drinks.

With comprehensive food safety assessments previously showing that aspartame is safe, it has been permitted for use in New Zealand and internationally for more than 40 years.

The reassessment by IARC and JECFA supports the safety of aspartame in foods if used appropriately.

Are there risks associated with consuming aspartame?

Extensive studies since the 1970s have not found evidence of a risk of consuming aspartame at the levels people usually do.

These studies determined an 82kg adult would need to drink 6 litres - or 17 355mL cans - of Diet Coke every day to experience any health issues from aspartame.

The three main breakdown products of aspartame: aspartic acid, phenylalanine, and methanol, all occur naturally in the body and in a wide variety of foods. None of these chemicals are carcinogens. Methanol is toxic at doses far in excess of what occurs naturally in the body or in foods.

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For more information see **factsheetaspartame.pdf**

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New Zealand Government

Ministry for Primary Industries
Manatū Ahu Matua

How is aspartame risk assessed?

Aspartame is an extensively studied food additive with a lot of research done on both experimental animals and humans.

Food Standards Australia New Zealand (FSANZ) and international organisations – such as the WHO, the Food and Agricultural Organization (FAO), the European Food Safety Authority (EFSA), and the US Food and Drug Administration (USFDA) – carry out safety assessments on food additives before approving their use in foods.

JECFA evaluated the safety of aspartame in 1981, establishing an acceptable daily intake (ADI) for consumption through food. The ADI is the amount of a food additive that can be consumed daily over an entire lifetime without any appreciable health risks.

The current ADI for aspartame is 40mg/kg body weight, which was based on the highest level causing no effect in a long-term rat study. This ADI equates to having to drink 17 cans of a diet soft drink sweetened using aspartame per day to exceed safe levels.

In December 2013, EFSA completed a full risk assessment on aspartame and concluded it is safe at current levels of consumption. The risk assessment involved a review of all scientific research on aspartame and its breakdown products.

Surveys in Europe and by FSANZ have found that consumption levels of aspartame are well below the current ADI.

What do the two latest WHO assessments show?

On 14 July 2023, the International Agency for Research on Cancer (IARC) and the Joint Expert Committee on Food Additives (JECFA) released new assessments about the safety of aspartame.

IARC's assessment on whether there is any evidence of a cancer hazard for aspartame, has deemed aspartame a "possible carcinogen". This assessment does not directly relate to the safety of aspartame in food, because the animal studies that are the basis for these assessments often use doses that are much higher than what a person would be exposed to through their food.

JECFA's current full human health risk assessment on aspartame has determined there is no evidence of a food safety risk to human health if used appropriately.

JECFA assessments are the primary source of safety data used by FSANZ and other international food regulators to inform regulations on the use of food additives.

What is International Agency for Research on Cancer and what does it do?

IARC is the specialised cancer research agency of the WHO. Established in May 1965, IARC meets to assess if something is a cancer hazard but it does not assess if it is a significant risk to the human health.

This means that they could classify something as having a risk of causing cancer, but to experience any negative effect you would need to consume much more of the product than is realistic.

What are the IARC classifications?

IARC classifies substances including potential food additives into one of four categories:

- Group 1: The additive is carcinogenic to humans.
- Group 2A: The additive is probably carcinogenic to humans.
- Group 2B: The additive is possibly carcinogenic to humans.
- Group 3: The additive is not classifiable as to its carcinogenicity to humans.

What does an IARC classification for aspartame of Group 2B mean?

A 2B classification is generally used when there is not enough data to prove an additive is cancer-causing. Other additives in the 2B Classification are caffeine, aloe vera (whole leaf extract), pickled vegetables.

There are many non-food and environmental agents, including radiation from cellphones, that have been classified under 2B.

What is Joint Expert Committee on Food Additives and what does it do?

JECFA is an international scientific expert committee on the safety of food additives that is administered jointly by the FAO and the WHO.

It has been meeting since 1956, initially to evaluate the safety of food additives, but it now it includes food contaminants, naturally occurring toxicants, and residues of veterinary drugs in food.

JECFA safety assessments establish the safe levels of consumption of chemicals found in food. This information is used to regulate the use of food additives and other chemicals for the protection of consumer health while ensuring trade of safe food.

The main outcome of the safety assessment is establishing an acceptable daily intake (ADI) for a potential food additive. ADIs tell you how much of a specific food additive you can safely eat each day, over the course of your life.

For more information see https://www.fao.org/food/food-safety-quality/scientific-advice/jecfa/en/

Should I drink a soft drink with sugar or a soft drink with aspartame?

The **New Zealand Eating and Activity Guidelines for New Zealand Adults**, produced by Manatū Hauora Ministry of Health, recommend making water your first choice over other drinks.

These also state that diet drinks, which use intense sweeteners instead of sugar, are a better option in moderation than sugary drinks.

Should consumers be concerned about potential cancer risks from aspartame?

Everyone should try to eat in line with the dietary guidelines. These guidelines have been developed by experts to provide evidence-based guidance for everyone on eating well to maximise health and reduce risk of diseases like cardiovascular disease and cancers.

They recommend enjoying a variety of nutritious foods every day, including plenty of fruit and vegetables and whole grain foods, as well as some low-fat dairy and protein (e.g. eggs, meat, fish, legumes).

They also recommend choosing less processed foods with unsaturated fats (instead of saturated fats), that are low in salt and added sugars.

The guidelines emphasise the importance of eating a varied and balanced diet made up of minimally processed, nutritious foods, so high intakes of any sweeteners would not be consistent with these recommendations.

What is happening in response to the reports?

The outcome of both assessments will be considered by New Zealand Food Safety (NZFS), FSANZ, and regulators internationally.

The focus will be on new evidence that may affect advice on the safety of aspartame and whether any changes are required to regulate the use of aspartame in food.

The JECFA report has indicated that there is no evidence to change the current ADI for aspartame, which is 40mg/kg body weight.

Food safety is critically important and if there are unacceptable risks to the public, NZFS will take action.