



# Position Statement for Healthcare Professionals

## ***Eggs and Nutrient Density***

***Updated May 2016***

### **The importance of choosing nutritious foods**

Foods in each of the major food groups included in Australia's national healthy eating model, the Australian Guide to Healthy Eating, contribute unique nutrients to the diet. The 2013 Australian Dietary Guidelines<sup>1</sup> recommend Australians 'enjoy a wide variety of nutritious foods' from the five groups every day. The guidelines define 'nutritious foods' as those 'that make a substantial contribution towards providing a range of nutrients, have an appropriate nutrient density, and are compatible with the overall aims of the Guidelines'<sup>1</sup>. Consumption of a wide variety of nutritious foods helps ensure the body is provided with a balance of all the nutrients required for optimal health, namely the macronutrients protein, carbohydrates and fats, as well as vitamins, minerals, individual fatty acids and dietary fibre. To help ensure the diet is nutrient dense the guidelines also include the recommendation to 'limit intake of foods containing saturated fat, added salt, added sugars and alcohol'<sup>1</sup>. Foods containing high amounts of added sugars in particular contribute energy while diluting the nutrient density of the diet.

Data from the most recent Australian Health Survey revealed Australians are currently failing to meet the dietary guideline recommendations<sup>2</sup>. Furthermore, 1 in 2 Australians (52%) exceed the World Health Organisation's (WHO) recommendation that free sugars should contribute less than 10% of total energy intake<sup>3</sup>. These results highlight the need to promote the consumption of energy dense whole foods to Australians.

### **Defining nutrient dense foods**

Traditionally the concept of a 'nutritious' food was not based on any consistent standards or criteria. Healthy foods are often defined by the absence of negative nutrients such as saturated fat, sugar and sodium (salt), rather than by the amount of important nutrients such as fibre, vitamins, minerals and protein they contain<sup>4</sup>. However a concept that has been widely adopted by researchers and health professionals is a food's 'nutrient density'. Nutrient dense foods have been defined as foods with a high proportion of vitamins and minerals for the amount of energy (kilojoules) they provide<sup>5</sup>. Therefore foods that are relatively low in kilojoules but high in vitamins and minerals are classified as 'nutrient dense'.

In Australia, systems are used to rank a food's healthfulness and are often referred to as 'nutrient profiling criteria'. For example food labelling legislation includes the requirement that foods meet a nutrient profiling scoring criteria before they can use certain health claim statements on packaging and in advertising. A score is determined based on the amount of energy, saturated fat, total sugars and sodium in the food, along with the amount of fruit, vegetables, nuts, legumes, and in some cases, dietary fibre and protein. Furthermore, the voluntary front-of-pack labelling system recently introduced in Australia (the Health Star Rating) uses a nutrient profiling calculation to determine the number of stars a product can carry.

A naturally nutrient rich (unfortified) healthy eating pattern requires a focus on whole foods with the consumption of strongly coloured fruit and vegetables, whole grains, lean meats, seafood, eggs, beans and nuts, and low-fat dairy products<sup>4</sup>. Implementation of the NRF in practice means that people can greatly improve their intake of essential nutrients by making simple changes to everyday food choices within each of the major food groups. Table 1 shows high nutrient dense foods within each of the major foods groups.

**Table 1: Nutrient dense choices from each food group**

<b>Food group</b>	<b>Nutrient dense food choices</b>
<b>Fruits</b>	Banana
	Orange
	Berries
	Kiwifruit
<b>Vegetables</b>	Broccoli
	Spinach
	Tomato
	Cabbage
<b>Grain (cereal) foods</b>	Wholegrain bread
	Wholemeal pasta
	Brown rice
	Oats
<b>Dairy and alternatives</b>	Low-fat milk
	Low-fat cheese
	Fortified soy milk
	Reduced-fat yoghurt
<b>Lean meat and alternatives</b>	Eggs
	Lean red meat
	Oysters
	Turkey
<b>Healthy fats</b>	Nuts
	Seeds
	Vegetable oils
	Margarine

The nutrient rich foods index is one way of ranking foods according to their composition of key vitamins and minerals, however there are also a number of other important beneficial components such as antioxidants contained in fresh, minimally processed whole foods that are not accounted for. In addition, although the majority of Australians agree that it is important to eat foods that are naturally rich sources of vitamins and minerals, supplement use has been steadily increasing. In the 2011-12 National Nutrition and Physical Activity Survey 24.5% of Australians over the age of 19 reported consuming a vitamin or mineral supplement on the day prior to the survey interview<sup>6</sup>. A higher percentage of females compared to males consumed vitamin or mineral supplements and consumption was also more likely in the older age groups<sup>6</sup>.

Eating a variety of foods from each of the major food groups every day, with an emphasis on nutrient dense choices, means people are more likely to be getting all the vitamins, minerals and other compounds needed by the body without the need for vitamin and mineral supplements.

A concept that is frequently considered along with nutrient density is energy density, which relates to the total energy of the diet and may also contribute to the nutritional adequacy of a person's diet. For instance, a study showed higher proportions of older men and women consuming low energy density diets met dietary recommendations for total fat, saturated fat, cholesterol, fibre and a range of key vitamins and minerals. Vegetables, fruits, legumes, cooked potatoes and low-fat milk and yoghurt were key to the low energy density of the diet<sup>7</sup>.

## **Eggs and nutrient density**

Eggs are a nutrient dense food, being a natural source of at least 11 different vitamins and minerals. A serve of eggs provides the same amount of kilojoules as two small apples (7% of a person's daily energy needs) while providing significantly more than 7% of vitamin and mineral RDIs<sup>8,9</sup> for a range of important nutrients. Eggs provide 59% of the RDI for selenium, 49% RDI for folate, 42% RDI for pantothenic acid, 40% RDI for vitamin B12, 32% RDI for vitamin A, 29% RDI for iodine and riboflavin, 24% RDI for vitamin E and 21% RDI for phosphorus. Other nutrients for which eggs contribute more than 10% of the RDI include iron (14%) and thiamin (11%). Eggs are also rich in long-chain omega-3 fatty acids, providing 71% of the adequate intake (AI) for men and 127% AI for women.

## **Who may particularly benefit from nutrient dense foods**

- **Weight loss**

People who are overweight often have a dietary intake that is high in energy (kilojoules) but low in nutrients (vitamins and minerals), resulting in nutritional deficiency<sup>10</sup>. On the other hand, people on weight loss diets often cut out or reduce their intake of foods from the core food groups as a strategy to lower their kilojoule intake. By choosing nutrient dense foods, people on weight loss diets can improve their nutrition status and eat less food but still meet their nutrient intakes.

- **Pregnancy**

Significant increases in vitamin and mineral needs, with only minor increases in kilojoule requirements during pregnancy, can be met by increasing the intake of nutrient rich foods.

- **Children**

Children have a small stomach capacity and fussy eaters in particular may benefit from nutrient dense foods. Toddlers and preschoolers need to be encouraged to try a wide a range of nutrient dense foods<sup>11</sup>.

- **Teenagers**

Nutritional requirements during adolescence are high to fuel rapid growth and development, however adolescents often have irregular eating patterns, with a tendency to skip breakfast, graze constantly, have a high intake of snacks, confectionery and soft drinks, experiment with different diets, and make poor food choices<sup>12</sup>. Due to the wide range of nutrients found in eggs, they are a particularly useful inclusion in the diet of teenagers who may be following special diets. They are also easy to prepare and can be consumed in a variety of formats which may increase their appeal to this age group.

- **Older Adults**

Older adults often have higher nutrient requirements, coupled with lower energy needs and often poorer appetite, therefore it is particularly important they have a high quality, nutrient rich diet. Low nutrient intakes have been reported in older Australians, which researchers attribute to diets of low nutrient density along with an insufficient quantity of food eaten.

Poor dentition can also lead to inadequate nutrition and reduced chewing ability<sup>13</sup>. Issues such as these can lead to inadequate intakes of fibre, vitamin A, magnesium, potassium and calcium, folate and zinc in particular<sup>14</sup> and higher intakes of added sugars, fat and salt<sup>15</sup>.



The concept of nutrient density as a measure of diet quality is increasingly relevant as many people struggle to maintain a healthy weight, while also maintaining optimal nutritional status. Including nutrient dense foods such as eggs in a healthy balanced eating plan can help ensure adequate macronutrient and micronutrient intakes. Eggs also have the added advantage of being an economical choice since the cost of high nutrient density foods are reported to be increasing in Australia in comparison with higher energy density, lower nutrient density food<sup>1</sup>.

This statement is for healthcare professionals only.

*\*One serve = 2x60g eggs (104g edible portion)*

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