

VITAL

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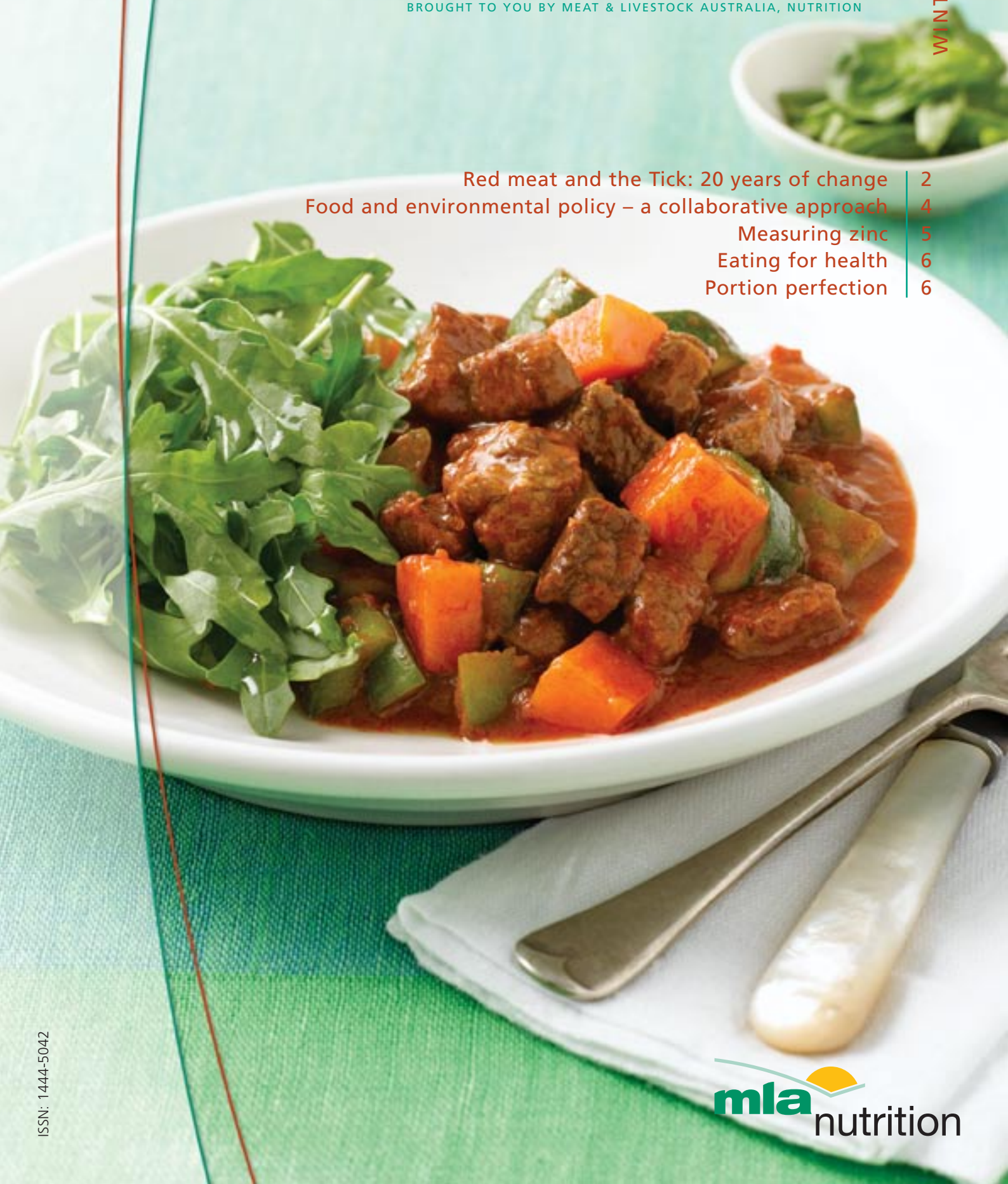
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NEWS, VIEWS & INFORMATION FOR NUTRITION PROFESSIONALS

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WINTER

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Welcome to our winter issue of *Vital*.

Collaboration is a common theme in this issue of *Vital*.

In our feature article, the Heart Foundation Tick anniversary has allowed us to reflect on what has influenced our red meat supply. We see how the dynamic interplay between consumers, public health, producers, processors and retailers from gate to plate have been important drivers of change.

We also report on a unique closed workshop held recently, attended by primary producer organisations, producers, non-government organisations and public health representatives. *Food policy and the environment – bridging the gap* provided an insight into environmental issues from a different perspective.

Developed in consultation with dietitians, the revised Eating For Health brochure reflects the key issues facing dietitians in practice today including portion sizes.

Fransiska has temporarily left us to start an exciting new journey in her life, motherhood. As always the MLA nutrition team will be keeping you updated with the latest nutrition news, research and resources.

We hope you enjoy this issue of *Vital*.

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Red meat and the Tick: 20 years of change

Health messages to reduce total dietary fat have been successful in changing consumer behaviour. In the case of red meat the dynamic interplay of influence between consumers, public health, producers, processors and retailers has influenced the product, how it is purchased, how it is eaten and consequently its contribution to total saturated fat intake.

It's 20 years since the Heart Foundation launched the Tick program, which aimed to provide both an educational message to consumers and to influence the food supply. Red meat trimmed of visible fat was one of the first foods to join the program. Since then, many changes have taken place throughout the red meat supply chain, contributing to the consumption of predominantly trimmed red meat in Australia today.

Peter Williams from the University of Wollongong and Veronique Droulez from Meat & Livestock Australia investigated these changes and the implications for red meat nutrient composition in a paper which was presented as a poster at the Heart Foundation conference in Brisbane in May. The analysis highlighted the dynamic interplay between the different players in the food supply, including public health, consumers, producers, processors and retailers, and how they influence each other.

While public health messages have influenced consumer food purchasing and preparation behaviour, it is interesting to note that other, non-health-related factors were important drivers for change. These factors include the demand for more consistent and better eating quality food; the need for more cost-efficient processes; and the decline in the wool market.

Changes in consumer behaviour

Consumer research commissioned by the red meat industry from 1993 to 2007 provides an interesting insight into changes in consumer behaviour. The research shows the progressive adoption of low fat practices by consumers. In 1993 61 per cent reported cutting back on fat; by 1994 that number had grown to 65 per cent¹. It jumped to 74 per cent just one year later in 1995 and by 2007 was at 81 per cent².

In these consumer research studies, respondents reported that healthcare professionals and the media as well as friends/relatives were important sources of nutrition information. They reported that they were cutting back on fat by trimming fat off meat; cutting back on oils and fats; eating less snack foods and fast foods and for some, eating less red meat³.

Comparison of 1983 with 1995 national nutrition surveys show intake of red meat fell 36 per cent in men and 45 per cent in women in the period, while intake of poultry remained unchanged^{4,5}. Mean weight of cooked red meat on the day of the 1995 National Nutrition Survey was 88 grams for adult males and 45 grams for adult females⁶. Intakes reported in more recent studies suggest that these figures remain current.

Influence of demand for consistent eating quality

Since the 1980s, changing lifestyles and multicultural influences have increased the variety of food available to Australian consumers. As the marketplace became more competitive, the red meat industry was forced to respond both to consumer health concerns, and to increasing demands for convenience, variety, and consistency in taste and price.

The industry invested in research to identify the factors throughout the supply chain that influence the eating quality of meat. The outcome of this exhaustive research was Meat Standards Australia (MSA), a series of quality assurance pathways to guarantee tender meat. These guidelines cover processing, butchering and cooking. An unintended outcome of the MSA research process was the introduction of a range of sub-primal cuts, smaller in portion size and trimmed of visible fat. These cuts were initially developed to facilitate the thousands of sensory tests required in the research, but they found ready acceptance by consumers who were looking for smaller portions of meat, trimmed of fat⁷.

Influence of decline in the wool market

Through the 1980s, producers started to diversify from wool into meat. This required producers to select breeds more suited to producing meat than producing wool. These animals were those with a larger, leaner carcass, better for preparing cuts composed of more meat and less separable fat. The subsequent changes in the national flock made a significant impact on the regular supply of a wide range of trimmed lamb cuts.

Consequences for red meat nutrient composition

Trimming of separable fat is the greatest determinant of saturated fat in Australian red meat. Since Australian livestock are predominantly pasture-fed, the lean component of the meat has little marbling.

Trimming takes place throughout the supply chain, with significant changes in the processing and retail sectors. There has been a significant reduction in the total fat of all cuts; for example, the fat content of chump chops reduced by 70 per cent and scotch fillet by 48 per cent since the 1980s. The average thickness of selvedge fat on cuts in 2000 to 2002 were generally less than 5 millimetres⁸.

Trimming by consumers has resulted in red meat not being a major contributor to saturated fat intake in the Australian diet (see Table 1). Red meat contributed less than 10 per cent to total saturated fat intake in the 1995 National Nutrition Survey⁹. As a tangible demonstration of this change, lean red meat as a category now has the Heart Foundation Tick, 20 years after it was awarded to individual lean cuts.

Further research is now required to better understand how consumers are eating red meat today so that future analyses and advice reflects contemporary consumer practices.

Understanding trimming

1. Processor trimming

Hot fat trimming, a process developed 10 years ago, involves trimming of excess fat from the external surface of the standard carcass before chilling to facilitate the slicing of meat into primal cuts. As well as reducing selvedge fat it delivers processing efficiencies through reduced energy costs for chilling.

2. Butcher trimming

Today butchers tend to purchase cartons of primal cuts that are vacuum-packed and meet desired specifications of age, level of trim and tenderness. All they then have to do is slice and trim the cuts from the primal muscle group. This is cost-effective as it makes it easier for butchers to supply what their customers want, with less waste.

3. Supermarket trimming

Supermarkets have dramatically changed meat retailing. The majority of meat sold in supermarkets tends to be centrally processed according to strict specifications. Standardised cuts charts describing trimming specifications ensure meat cuts on display are fat-trimmed, particularly where lean meat claims are made.

4. Home trimming

Eighty nine per cent of consumers either purchase trimmed lean meat or trim it further when they get home, before or after it is cooked.

Table 1:

| Year | Source | per cent adults trimming meat |
|------|---|-------------------------------|
| 1980 | NHF Risk Factor Prevalence Survey 1 ¹⁰ | 42 |
| 1989 | NHF Risk Factor Prevalence Survey 3 ¹¹ | 49 |
| 1995 | National Nutrition Survey ⁶ | 63 |
| 2005 | MLA CATI Survey ¹² | 84 |
| 2007 | MLA CATI Survey ¹² | 89 |

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Red meat and the Tick brochure

This new 8 page brochure explains how red meat earns the Heart Foundation Tick, provides patients with practical tips on cuts and cooking methods as well as inspirational meal ideas. Available at www.redmeatandnutrition.com.au



Food and environmental policy – a collaborative approach

A unique workshop brought agricultural producers, public health experts, economists and environmental scientists together to discuss food production in Australia from an environmental, economic and social perspective.

In February this year Horticulture Australia, the Australian Egg Corporation and Meat & Livestock Australia organised a closed workshop, *Food policy and the environment – bridging the gap*. The workshop was designed to discuss issues of sustainability and affordability in various forms of agricultural production. It was the first time that producer organisations have collaborated in this way.

This workshop offered a unique opportunity for information-sharing and dialogue between people with different areas of expertise who might not normally have the occasion to discuss their different perspectives.

Presentation topics included: an overview of each industry; industry environmental programs; the potential impact of climate change on food production in Australia; production methods and issues by producers – the economic drivers of Australian food production.

The public health attendees appreciated the chance to hear from producers about Australian production and to engage directly with the primary production sector. It was suggested that opportunities like this, as well as other information on this topic would make a worthwhile continuing education activity.

Towards a common language

The meeting highlighted how the same terms may have different

meanings for different audiences. It was acknowledged that, without a common language and understanding of the issues, there is potential for miscommunication.

For example, ‘productivity’ for agriculture means maintaining viability into the future. From an agricultural perspective it involves increasing yields, tackling the lack of skilled labour, needing to remain competitive in a global market, managing increasing costs of inputs and diminishing profit margins, and dealing with climate change. Natural resource management and environmental sustainability are an integral part of improving productivity.

For public health, it means equal and easy access to affordable and nutritious food. More research is required to understand what effect various policy and market forces have on the social, economic, environmental and nutritional aspects of food.

The workshop highlighted the need for different sectors to work together so as to understand issues from all perspectives and develop a common language. Participants noted that it was important to adopt a broad approach to the concept of sustainability, for example; one which considers all aspects of the issue, not just climate change. The group agreed there was an urgent need for an overarching national food and nutrition policy, which currently Australia does not have.



The image shows the cover of a brochure titled "Food Policy and the Environment: Bridging the Gap". The cover features three small images: a bowl of red apples at the top, a plate of meat and vegetables in the middle, and a plate of eggs and vegetables at the bottom. The text on the cover includes the title "Food Policy and the Environment Bridging the Gap" and the subtitle "An agricultural perspective".

Workshop proceedings available
Proceedings of the workshop are available from: www.aecl.org
www.redmeatandnutrition.com.au
www.horticulture.com.au

Australian red meat production

A broader understanding of primary production in Australia underpins discussions about food and environmental sustainability. MLA has developed a new brochure ‘*Australian red meat production: beef, veal, lamb, mutton and goat*’ which describes key differences between production methods used in Australia and overseas. This information provides a local framework within which to assess the contribution of red meat to human nutrition; national and regional economies; social fabric; and the environment. The new brochure acts as an adjunct to the ‘Red Meat and the Environment’ brochure released last year. Both are available from www.redmeatandnutrition.com.au

Measuring zinc

Zinc is an important nutrient, but it is difficult to measure. Professor Rosalind Gibson from the University of Otago helps us to understand the recommendations for assessing population zinc status including dietary, biochemical and functional indicators. Zinc bioavailability is an important component of the dietary assessment of zinc intake.

A major factor associated with the development of zinc deficiency is an inadequate intake of dietary zinc arising from low dietary zinc intakes per se, poor zinc bioavailability, or a combination of both these dietary factors.

The International Zinc Nutrition Consultative Group (IZINCG) provides guidance on how to assess dietary zinc intake¹. As is the case with iron, factors that influence zinc absorption must be considered when assessing dietary zinc intake, because these factors can influence zinc status. Phytate is a key factor influencing zinc bioavailability. (Phytate is found mainly in cereals, nuts, and legumes). Consequently, IZINCG recommends assessing both zinc and phytate intake, using an appropriate food composition database, in order to calculate the molar ratio of phytate:zinc of the diet to provide an estimate of zinc absorption.

Requirements for zinc can increase by as much as 50 per cent when the phytate:zinc molar ratio of the diet is greater than 15:1, as may occur in strict vegetarian diets². The EAR is based on the assumption that the bioavailability of zinc in the adult habitual Australasian diet is equivalent to that of a mixed or refined vegetarian diet with phytate:zinc molar ratios of 4 to 18. At these ratios, zinc absorption is estimated to be 26 per cent in adult males and 34 per cent in adult females. At ratios greater than 18, zinc absorption is reduced to 18 per cent in males and 25 per cent in females¹.

Dietary strategies for ensuring adequate zinc intake are similar to those for iron. Strategies integrate selection of foods high in zinc together with maximising enhancing factors and minimising inhibiting factors (See below).

Food-based strategies for maximising zinc intake and bioavailability

1. Increase consumption of foods high in zinc (see Table 1). The absorption rate of zinc, like iron, is inversely related to the total zinc content of the meal: as more zinc is consumed, percent absorption decreases, although the absolute amount of zinc absorbed increases.
2. Increase intake of foods that enhance zinc absorption such as animal protein sources, including red meat or liver.
3. Maximise zinc absorption by limiting the consumption of foods high in phytate such as wheat bran, oatmeal, nuts, unleavened bread when consuming zinc-containing foods.
4. Use phytate-reducing strategies such as soaking (eg dried legumes), fermentation (eg leavened bread), and germination (eg sprouted wholegrain cereals and legumes).

Table 1: Sources of zinc³

| Food - raw (100g portion) | Zinc content (mg) |
|---------------------------|-------------------|
| Oyster | 47.9 |
| Beef, chuck, trimmed | 6.2 |
| Beef, blade, trimmed | 4.5 |
| Lamb, shoulder, trimmed | 5.1 |
| Lamb, leg, trimmed | 3.9 |
| Pork, fillet, trimmed | 1.7 |
| Chicken, drumstick, lean | 1.7 |
| Egg | 1.2 |
| White fish | 0.7 |
| Chicken, breast, lean | 0.7 |
| Oily fish | 0.3 |

Indicators of risk of zinc deficiency in a population or subgroup⁴

Ideally, all three of these indicators should be used together to obtain the best estimate of the risk of zinc deficiency in a (where appropriate) population group, or to identify subgroups at risk:

- Biochemical indicator: prevalence of low serum zinc concentrations greater than 20 per cent
- Dietary indicator: prevalence of dietary zinc intakes below the Estimated Average Requirement (EAR) greater than at 25 per cent or more
- Functional indicator: prevalence of low height-for-age (ie less than - 2.0 standard deviations) for children under 5 years of age greater than 20 per cent

References:

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Eating for health

The popular resource, Eating for Health, which was first developed in 1996, has been revised to facilitate discussion on portion size.

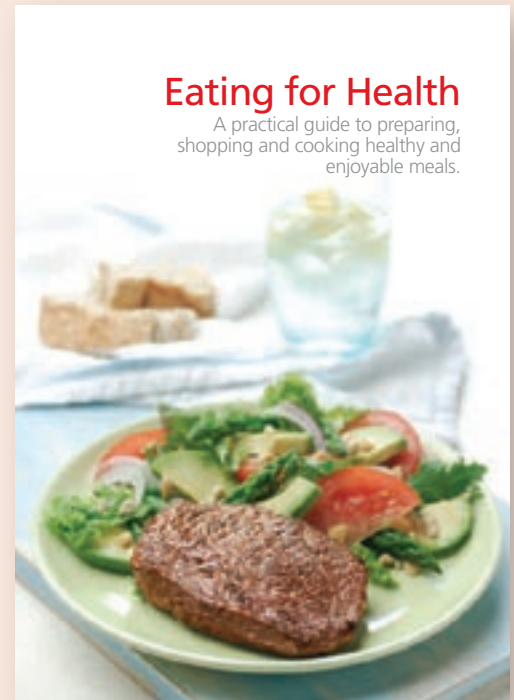
Eating for Health was first developed as a practical resource on shopping and preparing low fat meals. With increasing emphasis on portion control for weight management, it is timely to update the brochure accordingly.

The revised brochure aims to provide health professionals with a tool to discuss portion control with their patients and to encourage and support them with simple cooking advice and meal ideas.

Developed in collaboration with dietitians, MLA has revised and re-released its *Eating for Health* brochure. The updated version has an emphasis on portions and on cooking. It uses an image of a plate to show how to apportion a healthy meal incorporating different-coloured vegetables, carbohydrate-rich foods (ie grain foods or potato), and a lean piece of protein.

To help transfer knowledge into action the brochure also includes basic master recipes offering step-by-step, illustrated instructions for stir-frying, pan-frying, roasting and making casseroles. Additionally there are two recipes, including plenty of variations, for cooking the ever-popular mince.

The brochure, which has the approval of the Go for 2 and 5 program, Dietitians Association of Australia and the Heart Foundation Tick, is available on www.redmeatandnutrition.com.au



Portion perfection

A new book uses easily understood visual guides to give consumers practical advice on choosing what, and how much, to eat.

The last time high-waisted pants were in fashion, just one in ten Australian adults was overweight and a Mars Bars weighed 30 grams and contained 135 calories. Now high-waisted pants are back, one in two Australians are overweight and a Mars Bar weighs 80 grams and contains 365 calories.

Dietitian Amanda Clark believes it's no simple coincidence that rising portion sizes and rising body sizes are occurring at the same time. Her new book, *Portion Perfection* aims to give weight control back to consumers by visually demonstrating reasonable portion sizes for both losing, and maintaining, weight.

"For the most part we haven't noticed how our portion sizes have increased over the years, and there is good evidence we wouldn't notice if they decreased again," she says. The book, aimed at adults, adolescents and children over 5, deals with confusion over portion sizes by offering a practical, visual guide to the question 'how much should I eat?' It follows Amanda's development of the Perfect Portion plate and bowl, which have ideal portion size and nutritional balance guides printed on them. The book shows portion sizes of commonly eaten foods for meals and snacks and also uses photographs of branded products to help consumers identify appropriate portion sizes of the products they prefer.



The book, *'Portion Perfection: A visual weight control plan'* is available from selected bookstores, and at www.greatideas.net.au for \$34.95.