



Healthy eating & diabetes: A guide for aged care facilities

2012



**Government
of South Australia**

SA Health

Published by:

Diabetes Centre
The Queen Elizabeth Hospital
8 Woodville Road
Woodville SA 5011
Phone: (08) 8222 6771
Fax: (08) 8222 6044
www.diabetes.org.au

Diabetes Outreach
Country Health SA
8 Woodville Road
Woodville SA 5011
Phone: (08) 8222 6775
Fax: (08) 8222 6768
www.diabetesoutreach.org.au

© Diabetes Centre 2012

Disclaimer

This publication has been designed to assist care procedures in aged care facilities. All due care has been taken to ensure that the information is free from errors and omissions but is made available on the understanding that the information is of a general nature and that professional medical guidance should be sought for the treatment of individual cases.

Acknowledgments

Many people have contributed to the development of this nutrition manual for people with diabetes in aged care facilities. The dietetic staff at Diabetes Centre, The Queen Elizabeth Hospital would especially like to thank Nutrition Professionals Australia and, in particular, Taryn Richardson and Anne Schneyder for their effort and contributions.

The following are acknowledged and thanked for their input and feedback during the development of this manual:

Diabetes Outreach CHSA - Jane Giles & Kate Visentin

Rehabilitation and Aged Care Special Interest Group - DAA

Sharon Allsop

Narelle Arblaster

Rudi Bartl

Chris Borthwick

Carolyn Bunny

Denise Burbridge

Philippa Cahill

Marc Campbell

Alison Ginn

Christine Gugole

Health First Network

Sally Knowles

Rebecca Manger

Sarina Prizzi

Ange Ridden

Lindy Sank

Lisa Sossen

Connie Stanton

Foreword

The number of residents in aged care facilities who have diabetes is increasing steadily as the incidence of diabetes increases in our community. The management of diabetes in residential care poses some unique challenges, with the need to balance the optimisation of blood glucose levels with quality of life and the very real risk of malnutrition secondary to over zealous dietary restriction.

Adequate nutrition is a basic necessity for all individuals and more so in the elderly. It is well recognised that malnutrition is an under diagnosed and undertreated condition in many aged care facilities. The individuals who enter aged care are increasingly frail and are more at risk of malnutrition, nutrient deficiencies and other dietary related problems.

Whilst it is essential that day to day blood glucose levels are monitored and treated to avoid hyper- and hypo-glycaemia, the goals of diabetes management in aged care should consider the need to optimise dietary intake. The American Dietitians Association and the American Diabetes Association recommend that the imposition of dietary restriction on elderly residents is not warranted and that the risk of long term complications of diabetes is small compared to the risks of nutrition problems.

'Healthy eating and diabetes: A guide for aged care facilities' has become the gold standard document for recommendations on diabetes management in aged care and very clearly explains the differences between the approach needed for healthy individuals living in the community and the needs of the frail aged. Once again congratulations to The Queen Elizabeth Hospital for demonstrating leadership in this area.

Anne Schneyder
Advanced Accredited Practising Dietitian
Nutrition Professionals Australia

Contents

Acknowledgments	3
Foreword	4
Contents	5
Introduction.....	6
What is diabetes?.....	6
Types of diabetes	7
The goals of dietary management of diabetes in aged care	8
Additional considerations for low care residents	8
Guidelines for healthy eating & diabetes in aged care.....	9
Diabetes and insulin.....	11
Major nutrient groups	12
Protein	12
Fat	12
Carbohydrate.....	13
Glycaemic index	14
Another word about sugar.....	17
Artificial sweeteners	17
Vitamins and minerals	18
Calcium	18
Vitamin D.....	18
Iron	18
Other vitamins and minerals	19
Fluids	19
A word about alcohol.....	20
Dietary guidelines – minimum serves from each food group	21
Menu planning	22
Sample meal plans.....	24
Standard meal plan - also suitable for diabetes	24
Smooth puree meal plan (suitable for diabetes)	25
High energy, high protein meal plan (suitable for diabetes).....	26
Special dietary requirements in aged care.....	27
Underweight or malnourished residents.....	27
The management of overweight residents	30
Soft diets	31
Smooth puree and minced and moist diets.....	31
Constipation	32
Diabetes and physical activity.....	33
Unstable diabetes.....	33
Hypoglycaemia.....	33
Hyperglycaemia.....	35
Sick days.....	37
General diabetes care.....	38
Oral hygiene issues.....	39
Muffin and dessert recipes	40
Muffins	40
Desserts	42
Food hygiene.....	46
References	47
Other references/resources	49

Introduction

The role of nutrition in aged care facilities

Adequate nutrition in the elderly is fundamental in optimising their quality of life and maximising health outcomes. Adequate nutrition is increasingly recognised as an integral part of the overall care of residents in aged care facilities and the importance of planning and providing nutritious and safe foods can not be overstated.

The nutritional needs of aged care residents is by no means homogeneous, however many common requirements do exist and these can form the basis for guidelines when planning a menu. Many residents will have multiple health concerns and under nutrition is a more common concern than over nutrition in this population. Approximately 50% of residents in aged care facilities are malnourished¹. Nutritional goals and recommendations made in acute care settings and for the home environment must be re-evaluated and adjusted for residents in long term residential care facilities.

The prevalence of diabetes is increasing at an alarming rate throughout Australia. Research shows that the risk of developing diabetes increases with age; hence it is not surprising that many residents in aged care have diabetes². This manual provides comprehensive guidelines for healthy eating and diabetes management in aged care. It takes into account the specific needs of residents in aged care versus the needs of the aged population who are living at home and how the goals for diabetes care need to be modified to ensure all aspects of health are maintained.

What is diabetes?

Diabetes is a condition where the body is unable to control the level of glucose in the blood. Glucose is an essential fuel for the body and it provides the body with energy on a day to day basis. Glucose comes from foods containing carbohydrates. These foods are essential for health and include breads and cereals, milk, yoghurt, fruit, starchy vegetables and legumes. Glucose also comes from table sugar and sweetened foods and drinks. When these foods are eaten or drunk, they are broken down into glucose through normal digestion and used as fuel for the body.

If there is a problem with the production of insulin (insulin deficiency) or how well the insulin is able to do its job (insulin resistance), then blood glucose can rise above healthy levels. High blood glucose over time can cause short term problems (tiredness, frequency of urination, urinary tract infection, poor healing etc), and long term problems (heart attack, stroke, eye damage, kidney failure and lower limb and foot problems). Keeping blood glucose in a healthy range has short and long term benefits. Controlling blood glucose is done by balancing healthy eating, carbohydrate intake, activity and medication/insulin.

Types of diabetes

Type 1 diabetes

Type 1 diabetes usually develops in young people (children and adolescents) but can develop at any age.

- > it makes up about 10-15% of all people with diabetes
- > it is caused by an autoimmune response that destroys the insulin producing cells in the pancreas
- > no insulin is produced by the pancreas
- > intensive insulin therapy is required from diagnosis for survival
- > insulin must never be ceased
- > it is not a lifestyle disease but healthy eating and activity are important.

Type 2 diabetes

Type 2 diabetes usually develops in people over 40 years of age, but can develop in younger adults and some children.

- > it makes up about 85-90% of all diabetes
- > it occurs because of a combination of decreasing insulin production and increasing insulin resistance
- > age and family history of type 2 diabetes are the strongest risk factors
- > being overweight is a contributing factor in at-risk individuals
- > lifestyle (healthy eating and activity) plays an important role in life long management
- > people progress to tablets and then insulin as part of the natural progression of type 2 diabetes.

The goals of dietary management of diabetes in aged care

The dietary management of diabetes in aged care has changed in the last few years. In the past, recommendations were very prescriptive with a strong emphasis on avoiding even small amounts of sugar. It has now been found that the previous “diabetic diet” provided no long term benefits for blood glucose control³. Current research shows that sugar can be included in moderate amounts in the diets of people with diabetes. It is evident that carbohydrates from sugars are no more rapidly absorbed than carbohydrates from starch when included as part of a meal plan⁴. Restriction these food sources may even place elderly residents at risk of poor nutritional status and malnutrition³.

The goals of nutrition intervention should include the improvement of overall health through optimal nutrition. Advice is now more individual. It resembles healthy eating for all Australians and no longer do we focus on avoiding all sugar. It is more important to provide adequate protein, energy and micronutrients to residents in aged care. Residents eat better when they are given a less restrictive diet of regular foods, rather than an energy-controlled diet^{5,6}. In aged care, the primary focus must be on meeting the overall nutritional needs of a resident, rather than tight control of blood glucose levels. Some of the specific recommendations they have been given in the past to help control their diabetes may no longer apply. If unnecessary dietary restrictions are placed on elderly residents in a long term care setting there is a high risk of malnutrition and dehydration developing. It is preferable to make medication changes rather than impose dietary restrictions to control blood glucose levels⁴.

Aged care facilities do not need a separate menu for residents with diabetes. The standard menu, including snacks and desserts will be suitable for all residents, including those with diabetes. This manual provides some general guidelines to assist with the control of blood glucose levels, and to ensure optimal nutrition is provided. There is no recommendation in this manual to avoid all added sugar, to use low fat items or to use diet products, as there is little or no evidence to support this approach. A low fat, low sugar diet is not appropriate for individuals living in aged care facilities. If blood glucose levels are becoming increasingly difficult to control, it is best to discuss this with the resident’s doctor and to look at a change in medication as opposed to implementing a restrictive dietary plan.

Additional considerations for low care residents

There are a range of care levels in aged care facilities. Some residents in low care may wish to follow more ‘standard’ goals for their diabetes management and may request items such as low fat dairy products and artificial sweeteners used in all desserts. It is essential that the autonomy of residents is respected and these requests are catered for. It is important that all residents’ nutrition and hydration needs are formally reviewed on a regular basis using a validated malnutrition screening tool and that interventions are put in place where required to minimise the risk of undesired weight loss or malnutrition (see page 27). If a resident is following a strict low sugar and low fat diet and is losing weight then they must be encouraged to relax the ‘rules’ so that they can ensure adequate nutritional status. They may benefit from a review by a dietitian who is experienced in aged care. The dietitian will review the individual’s specific needs and tailor the advice accordingly.

Guidelines for healthy eating & diabetes

The following are useful guidelines for residents with diabetes.

1. Provide regular meals and snacks with consistent amounts of carbohydrate included with each meal; aim for three meals and two to three snacks each day

Snacks are an important source of nutrients and energy for residents in aged care, particularly for those who need to gain weight. Snacks may also be required for residents on some types of insulin or on certain oral medications for diabetes. The need for snacks should also be guided by the persons' blood glucose profile and risk of hyperglycaemia. Snacks should be based around dairy products, fruit and low glycaemic index breads and cereal foods.

Suitable snacks must be provided for residents who require a texture modified diet (eg puree fruit, custard, smooth yoghurt etc).

Residents may need a late supper time if they are prone to low blood glucose levels. There is often a long time between the evening meal and breakfast the next day which can result in hypoglycaemia.

2. Incorporate low Glycaemic Index (GI) carbohydrates into the menu on a daily basis, trying to include one low GI choice at every meal time

The GI is a ranking of carbohydrate foods, based on their effect on blood glucose levels. A low GI food is digested and absorbed more slowly and has the smallest effect on blood glucose response. This is desirable in diabetes management. Including a low GI carbohydrate at every meal helps to slow the digestion of other carbohydrates within that meal, even if they are themselves high GI. A high GI food eaten together with a low GI food equals a medium GI meal.

(Refer to the GI table and GI information pages 14 – 16)

3. Sugar does not need to be avoided

It is acceptable for residents with diabetes in long term care facilities to consume desserts without limiting foods which contain sugar⁷.

Sugar in moderation can be used in desserts, added to custards or in a cup of tea etc, in the same way that an aged care facility may cater for a resident without diabetes. Ordinary jams, honey, ice cream, jelly, juice etc can be offered.

Many individuals with diabetes can also drink ordinary cordial and soft drink. However if an individual drinks large amounts of sugary drinks, or uses a large amount of added sugar, the total carbohydrate load may become quite high, with negative consequent effects on BGLs. These residents should be assessed individually. A guideline may be to allow a glass of ordinary cordial at a meal but if a resident with diabetes prefers to drink cordial in between meals then diet or low joule cordial could be offered.

It should also be remembered that sugar does provide 'empty calories', and that excessive amounts of sugar can replace other, more nutrient dense foods. This applies to all residents and is not unique to those with diabetes.

Several recipes have been included in this manual which contain moderate amounts of sugar for all residents, refer to page 40. Check with your dietitian if you are not sure about any particular product.

4. Low fat diets are not recommended

Low fat products should NOT be the standard in long term aged care facilities. In general, deep fried and high fat foods should be kept to a minimum, although the emphasis must not be on providing everything low fat. Full cream dairy products should be provided as the standard to all residents, with or without diabetes. Fats used in cooking should be unsaturated varieties, rather than saturated where possible (see Table 1, page 12).

5. Fortify the food for individuals identified at risk of malnutrition

Underweight residents or those identified at risk of malnutrition must be provided with added fats and protein sources in their foods such as cream, extra margarine, grated cheese and milk powder to increase the protein and energy in the food that they consume (see page 27 for detailed guidelines on providing a high energy, high protein diet).

6. Include high fibre products

High fibre items should be offered on the menu daily.

For example:

- > wholemeal, wholegrain and high fibre white breads
- > high fibre cereals including bran, cakes and muffins made with some wholemeal flour (25% wholemeal flour generally works well)
- > fruits (fresh, tinned, stewed, dry)
- > vegetables and salads
- > legumes (often best included in soups or casseroles).

Whole grain foods help slow the release of glucose into the blood; they also help with bowel function, which is a common issue in aged care facilities. Many facilities offer a prune, apple and bran puree mix at breakfast for individuals with constipation (see page 32).

7. Include at least three dairy serves each day

Dairy products are low GI and provide essential vitamins and minerals, in particular calcium which is integral to maintaining optimal bone health. Dairy foods are also an important source of energy and protein.

Milk on cereal, milk to drink, cheese on crackers and in salads and sandwiches and in cooking are excellent ways to include dairy foods. Desserts also can be a valuable source of milk eg ice cream, custard, milk puddings. These should be included daily on the menu.

8. Provide a minimum of two fruit serves per day

Fruit is high in fibre and nutrients and should not be restricted for individuals with diabetes. Cut up fresh fruit should be provided for those residents who are unable to eat a whole piece of fruit and pureed fruit must be provided for residents on texture modified diets.

All types of fruit are suitable for inclusion for residents with diabetes, even those with a higher GI. Fruit juice is a valuable source of nutrients for those who refuse fresh or tinned fruit.

9. Provide and encourage appropriate fluids

Six to eight glasses of fluid each day are recommended. Suitable choices for residents with diabetes include water, tea, coffee, milk, Milo, cordial, soft drink and fruit juices.

(See comments page 9 about the use of sugary versus diet drinks)

Many older individuals are reluctant to drink large amounts and strategies should be in place to ensure adequate hydration.

Remember that items such as soup, custard and other milk puddings also provide valuable fluids.

Meal plans and menu planning guidelines have been provided in this manual to help plan your facility's diabetes friendly menu (page 22).

Some residents will have more specific dietary needs that may require extra attention. In these cases, consultation with a dietitian is advised to help plan a more individualised meal plan to suit their needs. Page 27 provides an introduction to some of the special dietary issues in aged care which may be a useful starting point.

Diabetes and insulin

All people with type 1 diabetes and some people with type 2 will require insulin injections. This does not mean that their diabetes is 'worse' or that the diet needs to be stricter. The same principles above apply for someone requiring insulin. Particular attention should be paid to guideline 1 - provide regular meals and snacks with consistent amounts of carbohydrate included with each meal. There is a more direct relationship between the amount of carbohydrate foods eaten and the amount of insulin injected.

Sugar does not need to be specifically restricted when a resident requires insulin, they should receive the same diet as all other residents with diabetes.

However, an individual requiring insulin will be more susceptible to hypoglycaemia (see page 33). If blood glucose levels are difficult to control they may require a regulated amount of carbohydrate in their diet at every meal and snack. A dietitian should be consulted to provide this advice.

Major nutrient groups

Different foods provide different textures, flavours, colours and nutritional values and eating a variety of foods from each of the major food groups will ensure the best combination for good health. The energy (calories or kilojoules) in the food that we eat comes from three main nutrient groups: protein, fat and carbohydrate (see Table 1 for examples). Alcohol also provides energy (but no nutritional value), see page 20 for more detail on the effects of alcohol on diabetes.

Table 1: Examples of foods high in protein, fat and carbohydrate:

Protein	Fat	Carbohydrate
Meat	Butter	Bread
Fish	Margarine	Cereals
Chicken	Oil	Biscuits
Seafood	Peanut paste	Rice
Eggs	Cream	Noodles
Legumes	Nuts	Pasta
Milk	Avocado	Cous cous, semolina,
Cheese	Ghee	tapioca, polenta
Yoghurt	Dripping	Fruit (fresh, tinned, dried)
Custard	Copha	Fruit juice
	Lard	Potato
		Sweet potato
		Corn
		Legumes
		Milk
		Yoghurt
		Custard
		Ice-cream

Protein

Protein in the diet is essential for the body's growth and repair. Foods that contain protein also supply us with essential vitamins and minerals such as iron, zinc and calcium. Protein is digested and broken down to its component amino acids and absorbed into the blood stream from the small bowel. Protein does not contain glucose therefore it cannot raise blood glucose levels directly. Examples of protein rich foods include meat, chicken, fish, eggs, dairy products such as milk, cheese, yoghurt and legumes (eg lentils, chickpeas, baked beans, 3 bean mix). Milk, yoghurt and legumes do contain carbohydrate and will affect blood glucose levels, but have a low glycaemic index.

Fat

Contrary to common belief, fat does not directly contribute to high blood glucose levels. Fats are high in energy (calories or kilojoules). Large amounts of fat in the diet can lead to excess weight gain in susceptible individuals this in turn increases insulin resistance which can potentially raise blood glucose levels. However, under nutrition is a far more prevalent issue in aged care than over nutrition. It is important to use fats and oils to increase the palatability of meals and to provide extra energy for residents who are not eating enough and who are at risk of malnutrition.

When eaten in excess, saturated fat can raise cholesterol levels which are a risk factor for heart disease. In most cases cholesterol lowering is no longer a goal in high care residents; however some low care residents may prefer to follow a diet that is low in saturated fats.

Poly and mono unsaturated fats can assist in lowering cholesterol and have the same energy (calories or kilojoules) as more saturated alternatives. If any deep fried foods are offered then a polyunsaturated or monounsaturated fat is preferable. It is also appropriate to provide unsaturated fats to residents to use at meal times eg margarine to spread onto bread and to use unsaturated fats in baking cakes, biscuits, pastry etc. See Table 2 for examples of unsaturated fats.

Residents who have been identified as at risk of malnutrition or have been assessed as malnourished should have proteins and fats added to their meals (eg cream, cheese, milk powder, margarine and oil) to help boost energy (kilojoule or calorie) intake and to assist in preventing further weight loss (see page 27 managing malnutrition).

Table 2: Examples of different types of fats

Saturated fats	Polyunsaturated fats (unsaturated)	Monounsaturated fats (unsaturated)
Butter	Sunflower oil	Canola oil
Lard	Safflower oil	Olive oil
Dripping	Corn oil	Macadamia oil
Cream	Soybean oil	Peanut oil
Coconut milk & cream	Sesame oil	Avocado
Palm oil	Rapeseed oil	Olives
Ghee	Walnuts	Peanuts, Almonds,
Cooking margarine	Pine nuts	Cashews, Hazelnuts,
Vegetable shortening	Brazil nuts	Macadamia, Pecans
Copha		Peanut Paste

Carbohydrate

Carbohydrate foods are those that contain starch or sugars. Examples include fruits, starchy vegetables such as potato, sweet potato and sweet corn, breads and cereals, legumes, milk and yoghurt and foods containing added sugars.

All carbohydrate foods are eventually digested and broken down into glucose that is then absorbed into the blood stream. There are two main factors which affect how high the blood glucose levels will rise after a meal. The first is the amount of the carbohydrate being eaten and the second is the Glycaemic Index (GI) of that carbohydrate food.

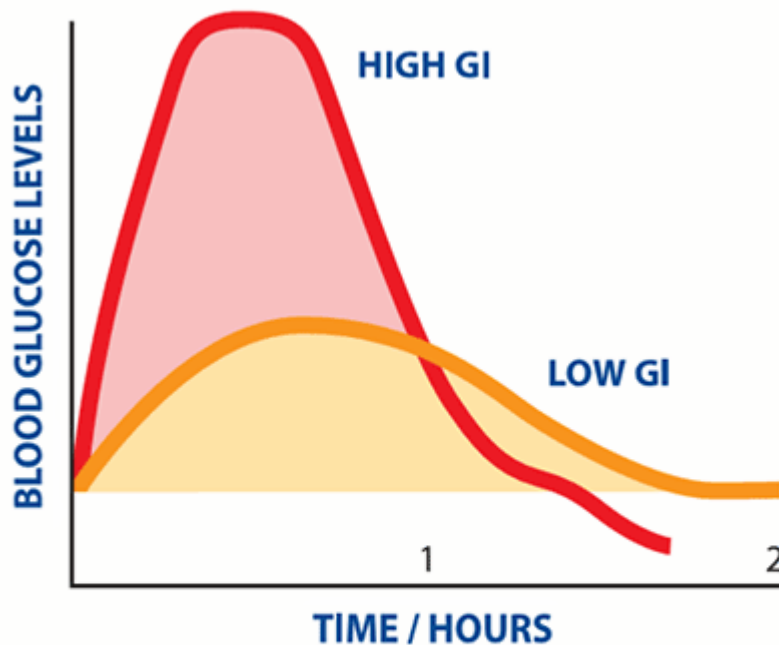
Carbohydrate foods are essential in the diet as they supply the body with energy, vitamins, minerals and fibre. People with diabetes require carbohydrate foods not only for energy but to regulate their blood glucose levels. As discussed above carbohydrate foods should be distributed evenly over the day, and preferably including one low GI carbohydrate food at each meal.

The Glycaemic Index (GI) is a ranking of how quickly carbohydrate foods are digested and absorbed into the blood stream. The rate of digestion varies between different types of carbohydrate foods and has differing effects on blood glucose levels. GI is discussed in detail on page 14.

Glycaemic index

The Glycaemic Index (GI) is a measure of the effect different carbohydrate foods have on blood glucose levels. It describes the way our body digests and absorbs these foods on a scale from 0-100.

- > Carbohydrates that are digested quickly and raise blood glucose levels faster have a high GI (≥ 70).
- > Carbohydrates that are digested and absorbed slowly have a lower GI (≤ 55). Low GI foods give better control of blood glucose levels in diabetes by causing a slower but longer lasting rise in blood sugar levels.



The amount of carbohydrate in the reference and test food must be the same.

Low GI diets have been shown to improve both glucose and cholesterol levels in people with diabetes (type 1 and type 2).

Including a low GI food at each meal will slow the digestion of other carbohydrate foods at that meal. A combination of a high GI food and a low GI food will result in a medium GI meal.

The amount of carbohydrate eaten at one time also has an impact on blood glucose levels. Carbohydrate food should be evenly distributed throughout the day so that each meal includes roughly the same amount of carbohydrate. Individuals with diabetes should be encouraged to eat moderate sized meals evenly distributed throughout the day. Mid meal snacks may be required depending on medication or insulin type. Variety in carbohydrate foods is also important in ensuring adequate nutrition.

It is important to remember that moderate and high GI carbohydrate foods are not 'bad' foods and can still be included in the diet. All fruits and vegetables are healthy foods; just because some have a high GI it does not warrant their exclusion from the menu. By combining a low GI carbohydrate with a high GI carbohydrate a moderate blood glucose response can be achieved. For example when white potato is included on the menu, serve it with a low GI vegetable such as corn to lower the overall GI of the meal. This helps to maximise the range of food types provided to residents.

The glycaemic index only applies to foods which contain carbohydrate. Therefore meat, fish, chicken, eggs, cheese and fats do not have a GI ranking.

In practice aged care facilities have little need to modify their menu specifically for Glycaemic Index as many low GI items are routinely included, eg Allbran, pasta, most fruit, milk, yoghurt, corn. If the menu is planned well and provides excellent nutrition then the GI of the menu is likely to be moderate.

Table 2: The Glycaemic Index

Low GI ≤55 (slow acting)	Moderate GI (56-69)	High GI ≥70 (fast acting)
Breads		
Wholegrain/multigrain breads Bürgen® Breads (except Oat Bran & Honey) Fruit loaf/raisin bread Soy and Linseed bread Pumpernickel Sourdough	Wholemeal bread Light Rye bread Pita bread Crumpets Hamburger bun Croissants Bürgen® Oat Bran & Honey bread	White bread (including high fibre white) Brown bread Dark rye bread English muffins (white) Bagels, baguettes Plain scones
Breakfast cereals		
Rice, oat & barley bran All-Bran Guardian Rolled Oats/porridge Sustain	Weetbix/Vita brits, Just Right Plain Mini Wheats Shredded Wheat AllBran Flakes Instant Oat Natural Muesli	Sultana Bran Coco Pops Corn Flakes Puffed Wheat Rice Bubbles Mini Wheats (fruit filled)
Cereal foods		
Doongara rice Long grain rice(Mahatma) Pearl barley Pearl couscous All Pasta (white or wholemeal eg spaghetti / macaroni) Fresh rice noodles Cracked wheat (bulgur) Buckwheat Semolina	Basmati / Arborio / wild / brown rice Dried rice noodles Popcorn (plain) Cous cous (regular) Instant noodles (low fat)	All other white rice eg Jasmine rice Tapioca

Low GI ≤55 (slow acting)	Moderate GI (56-69)	High GI ≥70 (fast acting)
Biscuits and crackers		
Ryvita (seeds & oat varieties) Vita-Weat Arnott's® Snack Right fruit (slice/pillow) Arnott's® Jatz Oatmeal biscuits	Ryvita (original & sesame) Digestive biscuits Arnott's® shredded wheatmeal biscuits Milk Arrowroot biscuits	Water crackers Rice crackers Sao Rice cakes/corn thins Milk Coffee biscuits Pretzels
Fruit		
Apples (fresh/dried) Pears Plums Peaches Apricots (fresh/dried) Mandarins Grapefruit Banana Mango Nectarines Oranges Grapes Kiwi fruit 100% Fruit juice Prunes Dates	Cherries Paw paw Sultanas/raisins Figs (dried) Pineapple Rockmelon Lychee (fresh)	Watermelon Lychee (tinned in syrup)
Vegetables & legumes		
Sweet corn, Carisma potato Lentils, kidney beans, split peas, chick peas, baked beans, 3 or 4 bean mix	Sweet potato Broad beans	White potatoes Instant potatoes
Dairy products		
Milk or soy milk Yoghurt/Fruche Custard Ice cream Milo in milk		
Other		
100% Fruit jam Fructose Logicane sugar	All other sugar (sucrose) Honey	Malt (maltose) Glucose Jelly beans Sports drinks (Gatorade) Lucozade

Most vegetables, except for the starchy vegetables listed on the table above, do not contain significant amounts of carbohydrate and can be eaten freely so GI does not apply.

There is no GI value for foods with no carbohydrate content eg meat, fish, chicken, egg, cheese, fats and oil. Other GI values can be found at www.glycemicindex.com⁸.

Another word about sugar

Sugar has a moderate glycaemic index. It is lower than Jasmine rice or white bread. A small to moderate amount of sugar does not significantly affect blood glucose levels any more than any other carbohydrate food.

Residents with diabetes should be served the regular desserts and snacks between meals. Moderate amounts of sugar can be used in recipes and served to all residents including those with diabetes. If the amount of sugar in a dish is very high then a small serve could be provided. Remember that sugar has no nutritional value and in a menu that is designed to provide adequate nutrition to all residents then modest amounts only should be used.

Residents with diabetes can be served:

- > ordinary desserts
- > ordinary cakes and biscuits
- > ordinary jam, marmalade, honey
- > ordinary ice cream and jelly
- > ordinary cordial and soft drink (limited amounts)
- > Milo.

Several recipes have been included in this manual which contain moderate amounts of sugar for all residents, refer to page 40. Check with your dietitian if you are not sure about any particular product.

Some commercial desserts self saucing puddings and dessert pre-mixes have very high amounts of sugar and little nutritional value. They should be used sparingly for all residents. Many residents enjoy dessert more than the main meal and so it should be a source of nutrition. Desserts based around fruits, dairy foods and cereals are ideal.

Artificial sweeteners

There is very little need for artificial sweeteners in aged care. However, a number of residents will have been using them for many years in their tea and coffee. Individual choice should be respected and artificial sweeteners provided for those who request them. If a resident with diabetes tips several teaspoons of sugar into every cup of tea or coffee then use of sweetener may be appropriate.

Artificial sweeteners should NOT be used in baking cakes or in desserts. They are expensive and unnecessary. A modest amount of ordinary sugar can be used. Diet ice-cream is NOT recommended and unless a resident is eating large amounts of ordinary jelly, diet jelly is not needed. Diet jam, diet toppings, diet sauce are also not necessary.

Vitamins and minerals

Vitamins and minerals are found in all foods, in particular wholegrain breads, cereals, fruit, vegetables, meat, fish and dairy products. A healthy, balanced diet normally provides all the vitamins and minerals required for good health. In general, vitamin and mineral supplements are not necessary, however menus must be carefully planned to ensure there is a wide range of foods from each of the food groups. Food needs to be provided in appropriate quantities to meet the nutritional needs of residents.

As we age our requirement for energy (calories or kilojoules) decreases, but at the same time the requirements for several vitamins and minerals increases. That is, we need a little less food but we need more nutrition from the food that we do eat. Due to decreased appetites, decreased ability to chew and swallow and multiple health issues it can be difficult for the elderly to meet all of their nutritional needs. For this reason, some residents may require a multivitamin and mineral supplement, it is best to discuss this with a dietitian. The vitamins and minerals discussed below are those that are most at risk of being low in the diets of aged care menus without careful planning.

Calcium

Calcium is essential to help maintain optimal bone health. Dairy products are rich in calcium which is readily absorbed. It is essential to provide adequate calcium containing foods on the menu to ensure the increased needs of elderly residents are achieved. A minimum of three dairy serves (or equivalent) must be provided every day (see page 21 for serving sizes). Snacks and desserts should be focused around dairy products and at least one dessert each day should be a dairy based option. Milk should be available and offered as a drink to all residents. Dishes such as creamy soups and mornays can also contribute to calcium intake. Cheese is a popular option to be served in sandwiches or salads or grated into dishes such as mornays or mashed potato.

Vitamin D

Vitamin D is important to maintain the integrity and strength of muscle, bones and teeth. Regular exposure to the sun (say 1 hour of direct sunlight to the face and forearms per week in summer), is required to achieve adequate vitamin D synthesis by the body. This can be very difficult to achieve in practice and some residents will never go out doors. In addition the elderly are less able to convert the UV rays into vitamin D and many will be deficient even with adequate exposure. The need to minimise risk of sunburn is also a factor.

Vitamin D can also be supplied by foods containing vitamin D (vitamin D enriched margarine or milk, herrings, mackerel, sardines and tuna) but it is almost impossible to achieve an adequate intake by this means and a large number of aged care residents are known to have low vitamin D levels. All residents should be referred to their GP for review, assessment of their vitamin D levels and consideration for a vitamin D supplement.

Iron

Iron is an important nutrient which assists in the transport of oxygen in the blood-transporting it around the body. Many older individuals are at risk of anaemia because of increased requirements with some medical conditions and because of decreased intake. If an individual is having some difficulty with their chewing or swallowing or if their appetite is poor, one of the first items that they tend to leave off the plate is the meat, which is the most important source of iron in the diet.

Menus should be planned to include soft sources of red meat such as mince dishes, stews and casseroles. Offal such as liver and kidney are excellent sources of iron as well as a variety of other vitamins and minerals and are popular with the elderly, although may be less popular with the younger cooks. Other sources of iron include chicken and to a lesser extent fish, wholegrain breads and cereals, green leafy vegetables and legumes. The non meat sources of iron are not as well absorbed in the body, however vitamin C assists with the absorption of iron. Fruit, juice, vegetables or salad should be served at the same time as iron rich foods to assist with absorption.

Other vitamins and minerals

There are a number of other vitamins or minerals which may be low in the diets of elderly individuals. By following the specific guidelines outlined in this manual, you should be able to ensure that your menu provides sufficient vitamins and minerals to meet most people's requirements. If a resident is eating less than recommended amounts or is not eating a variety of foods, they may need a supplement as mentioned above. You may wish to refer to a dietitian who is experienced in aged care for an assessment or advice.

Fluids

Fluids are essential if the body is to function properly. An adequate fluid intake prevents dehydration, quenches thirst, puts less stress on the kidneys and helps to prevent urinary tract infections, kidney stones and constipation. Older people often have a reduced sense of thirst. Having a drink at each meal and snack will help to meet fluid requirements. Facilities must have policies around ensuring adequate hydration for all residents.

What is considered a fluid?

water

coffee

tea

milk / Milo

fruit juice

cordial*

soft drinks*

soda water and mineral water

jelly*

soup

custard / milky desserts

Some residents do not drink very much water, but their fluid intake may be more than adequate when one considers all of the above sources of fluid.

*Small amounts of ordinary cordial or soft drink can be offered to residents with diabetes. However if an individual drinks large amounts of sugary drinks, or uses a large amount of added sugar, the total carbohydrate load may become quite high, with consequent effects on blood glucose levels. These residents should be assessed individually.

A guideline may be to allow a glass of ordinary cordial at a meal but if a resident with diabetes prefers to drink cordial in between meals then diet or low joule cordial could be offered.

Fruit juice has a similar effect on blood glucose levels to cordial. It does contain valuable nutrients but has a high overall carbohydrate load and in large amounts can also affect blood glucose levels. If levels are high then fruit juice should be limited to a small glass at a time.

A word about alcohol⁹

Most residents in an aged care facility do not drink to excess but some may enjoy an appetiser before a meal and some facilities have a happy hour where alcohol is served. A small amount of alcohol is generally suitable for individuals with diabetes*. Alcohol in excessive amounts may have the effect of lowering blood glucose levels so should always be served with something to eat. If a resident has unstable diabetes then blood glucose levels will need to be watched carefully. The alcohol recommendations for people with diabetes are no different to the general population. Aim for no more than 2 standard drinks on any day.

One standard drink is the amount of the drink that contains 10g of alcohol:

- > a large glass of light beer (425ml)
- > a medium glass of full strength beer (285ml)
- > a (small) wine glass of wine (100ml)
- > a sherry glass of sherry (60ml)
- > a port glass of port (60ml)
- > a nip of spirits (30ml).

The amount of sugar in the alcoholic drink eg in beer or wine, is not important, it is the overall amount of alcohol that should be limited to small amounts only.

*Always check with the individual's doctor whether alcohol is suitable.

Dietary guidelines – minimum serves from each food group

The table below demonstrates the **minimum** number of serves from each food group required to meet the nutritional needs of elderly residents in aged care facilities. Menus must be planned to ensure that there are many opportunities to choose foods from each of the food groups.

Breads and Cereals		1 serve =
3 – 5 serves daily Preferably choose wholegrain varieties	2 slices bread, 1 roll, breakfast cereals eg 1 cup cooked porridge, 40g (½ cup) ready to eat cereal, 1 cup cooked noodles, spaghetti or macaroni, ⅔ cup cooked long grain rice (eg Doongara)	
Vegetables		1 serve =
Starchy 1 – 2 serves daily	1 medium potato ½ cup sweet potato ⅓ cup sweet corn (or ½ cob) ½ cup cooked dried beans, lentils or baked beans* (legumes)	
Non-Starchy (aim for 5 serves a day) Fresh, frozen and canned varieties are suitable. Choose the low salt tinned varieties.	½ cup of cooked vegetables or 1 cup of salad Cabbage, beetroot, broccoli, carrot, cucumber, green beans, lettuce, mushrooms, onions, peas, pumpkin, spinach, tomato, cauliflower etc	
Fruit		1 serve =
2 – 3 serves daily Any fruits are suitable. Choose fresh, canned or dried.	1 apple, 1 small banana, 20 grapes, 1 orange, 1 pear, 2 slices pineapple, 1 tablespoon sultanas, 6 dried apricots, ¾ cup tinned fruit (drained), 120ml fruit juice	
Milk products		1 serve =
3 serves daily Choose full cream varieties as the standard but offer low fat options.	300ml milk – fresh, dried, UHT (long life) 300ml soy milk (with added calcium) ½ cup evaporated milk 1 cup custard 200g yoghurt – plain or fruit 40g cheese 2 scoops of ice cream	
Protein foods		1 serve =
1½ serves daily	65 - 100g lean meats such as beef, lamb, pork or poultry without skin 120g fresh or canned fish 2 small eggs ½ cup cooked lentils, legumes, dried beans etc	
Fat		
Choose unsaturated types for cooking and at the table. Add extra fats to boost energy (kilojoules or calories) when weight gain is required.	<p>Oils & Margarines Best choices are polyunsaturated or mono-unsaturated margarines and oils eg sunflower, canola, or olive. Animal fats eg butter, lard, dripping, Supafry, cream are higher in saturated fats but provide valuable energy (calories or kilojoules).</p> <p>Other Unsaturated Fats Nuts and seeds, peanut paste, avocado, olives.</p>	

Menu planning

Good menu planning is fundamental to a facility's food service. Developing a menu will take time and careful planning to ensure the needs of all residents are met and best practice guidelines are achieved. Remember the majority of residents are entirely reliant on the food provided by the facility to meet all of their nutritional needs.

As discussed throughout this manual a standard menu should be designed to meet the needs of the majority of residents, including those with diabetes.

Dietary Guidelines on page 21 provide information on the minimum serves from each of the food groups required to meet nutritional requirements, however actual serves will be determined by the appetite of residents. It is important that residents are encouraged to eat appropriate portions, as often the less we eat the less we want to eat. However we must respect autonomy and choice. If a resident consistently requests a meal under the recommended serving size guidelines they are at risk of malnutrition and additional steps need to be taken to maximise their nutritional intake – see page 27 on malnutrition.

Resident and family choice are also paramount and they should be involved in the menu planning process. Audits of satisfaction and plate waste will assist in future menu planning.

Use the following checklist to see whether your facility meets best practice guidelines for nutrition in aged care.

Nutrition checklist for menu planning¹⁰

Main Meals	
Beef/Lamb	Lean red meat is included on the menu at least 4 times a week.
Chicken/Fish/Pork/Veal	Lean white meat is included on the menu at least twice per week.
On each day that white meat is served at least 1 other iron rich food is included.	
Vegetarian Meals	A vegetarian meal is included on the menu at least once per week. (Every meal if residents are vegetarian).
Vegetarian meals are based on eggs, cheese, tofu, nuts or dried beans.	
Vegetables and fruit	The menu includes at least 5 serves of vegetables daily. A salad would be equivalent to 1 serve.
The menu includes at least 2 serves of fruit daily. This includes fresh, canned and stewed fruit.	
Fruit juice, if served, is counted only once as a fruit serve.	
Dairy foods	The menu offers each resident at least 3 serves of full cream dairy foods per day, such as milk, yoghurt and cheese.
Breads, Cereals, Rice and Pasta	The menu includes at least 4 serves of bread, cereal, rice or pasta foods per day.
High fibre bread varieties (eg. multigrain, wholemeal, white high fibre are offered)	
High fibre breakfast cereals are offered (eg Rolled Oats, All Bran™, Weetbix™)	
Snacks	Snacks are planned on the menu as part of the total day's intake.
At each snack time, a fruit, bread/cereal based food or dairy based food appears on the menu.	
Light Meals	
Beef/Lamb	Lean red meat is offered on the menu at least 4 times a week.
Chicken/Fish/Pork/Veal	Lean white meat is offered on the menu twice a week.
Vegetarian light meal	A vegetarian meal is offered once per week. (Every light meal if resident is vegetarian).
Soups offered are substantial eg. contain legumes, meat, chicken, barley, vegetables.	
Salads include a source of protein such as egg, beans, fish, cheese, meat etc.	
Bread is offered with soups and salad.	
Sandwiches include protein fillings such as egg, baked beans, fish, cheese, meat etc.	
Beverages	Milk offered at all meals and mid meals.

Sample meal plans

Note: Carbohydrate foods are denoted with *.

Low GI foods are in **bold**.

Standard meal plan - also suitable for residents with diabetes

<p>Breakfast</p>	<ul style="list-style-type: none"> > porridge*/Weetbix*/cornflakes*/Allbran* with milk* > wholemeal *or wholegrain* toast*/raisin toast* with margarine, vegemite, jam*, honey* > hot breakfast if available eg egg, lean bacon, tomatoes, mushrooms > stewed/tinned fruit* > yoghurt* > tea/coffee > glass of fruit juice*
<p>Lunch</p>	<ul style="list-style-type: none"> > main meal from menu as desired: <ul style="list-style-type: none"> - meat/fish/chicken/eggs/legumes* - potato*/sweet potato*/corn*/ Doongara rice*/pasta* - vegetables > fresh/stewed/tinned fruit* > dessert from menu as desired: <ul style="list-style-type: none"> - fruit* - ordinary custard* or ice cream* - pudding* - jelly* (ordinary is acceptable) > water/cordial*/fruit juice*
<p>Tea/Dinner</p>	<ul style="list-style-type: none"> > soup (contains carbohydrate if ingredients include potato*, legumes*, significant amounts of pasta* or barley*) + wholemeal bread* + margarine > sandwich* (wholemeal or wholegrain) / salad / hot meal as desired from menu > dessert from menu as desired: <ul style="list-style-type: none"> - fruit* - ordinary custard* or ice cream* - pudding* - jelly* (ordinary is acceptable) > water/ cordial*/fruit juice*
<p>Mid Meals</p>	<ul style="list-style-type: none"> > plain cake* or biscuit* > scone* with jam* > fresh fruit* > yoghurt* > tea/coffee/water/cordial*/milk*/Milo*

Smooth puree meal plan

<p>Breakfast</p>	<ul style="list-style-type: none"> > fruit juice* > porridge* (instant or smooth vitamised / Weetbix* and hot milk* / semolina* + cream > puree fruit* + cream > smooth yoghurt*/ Fruche* > tea/coffee/ milk drink*
<p>Lunch</p>	<ul style="list-style-type: none"> > puree meat/fish/chicken > extra jug gravy/white sauce > puree potato*/sweet potato* > puree vegetables – add extra margarine/butter/grated cheese > puree fruit* and custard*/ mousse*/ puree dessert* + cream > fruit juice*/ milk drink*
<p>Tea/Dinner</p>	<ul style="list-style-type: none"> > puree soup (*contains carbohydrate if ingredients include potato*, legumes*, significant amounts of pasta* or barley*) + cream > puree main course > extra jug gravy/ white sauce > puree potato*/ sweet potato* > puree vegetables – add extra margarine or butter or grated cheese > puree fruit* and custard*/ mousse*/ puree dessert* + cream > fruit juice*/milk drink*
<p>Mid Meals</p>	<ul style="list-style-type: none"> > milkshake*/ Milo* > puree fruit*/ custard*/ puree milky dessert*/ smooth yoghurt*/ Fruche* + cream > tea/coffee/water/cordial*

High energy, high protein meal plan

Breakfast	<ul style="list-style-type: none"> > fruit juice* > cereal* + full cream milk* + cream > fruit*/ yoghurt* + cream > toast*/ raisin bread* + thick butter / margarine + jam* or honey*/peanut paste > eggs/ baked beans* > milk drink*
Lunch	<ul style="list-style-type: none"> > meat/fish/chicken/eggs + extra gravy / white sauce / grated cheese > vegetables + extra butter / margarine / cream > bread* + thick butter / margarine > fresh*/ stewed*/ tinned fruit* or pudding* + ice-cream*/ custard*/ yoghurt* or milky dessert* (add cream) > fruit juice*/ milk drink*
Tea/Dinner	<ul style="list-style-type: none"> > soup (*contains carbohydrate if ingredients include potato*, legumes*, significant amounts of pasta* or barley*) + cream > sandwich* - thick butter / margarine <ul style="list-style-type: none"> – extra protein filling > salad – small serve of salad vegetables only <ul style="list-style-type: none"> – extra protein foods – cold meats/chicken/tuna/salmon/egg/cheese > fresh*/ stewed*/ tinned fruit* or pudding* + ice-cream*/ custard*/ yoghurt* or milky dessert* (add cream) > fruit juice*/ milk drink*
Mid Meals	<ul style="list-style-type: none"> > milkshake*/ iced coffee*/ fruit smoothie* (see nourishing fluid recipes page 29) > plus a snack eg cake*, plain sweet biscuit*, cracker* and cheese, scone* + jam* and cream, milky dessert*, fruit* and cream

Recommended meal times

Breakfast 7am - 9am

Lunch 11.45am - 1.45pm

Tea/dinner 5pm - 7pm

If there is more than 14 hours between tea/dinner and breakfast, supper must be served. Snacks for morning tea, afternoon tea and supper are recommended for all residents, and are especially important for residents on insulin, or who need to gain weight, or prevent weight loss.

Special dietary requirements in aged care

Underweight or malnourished residents

Undesired weight loss and malnutrition are two of the core nutritional issues that face aged care facilities. Multiple factors affect an elderly resident's ability to eat adequate quantities to meet their energy, protein, vitamin and mineral requirements. A decrease in appetite is common as we age. In addition to this the ability to chew and swallow is often compromised. Some disease processes can increase nutrition demands and emotional factors such as depression can further decrease appetite. The overall result is a group at high risk of malnutrition.

Being underweight carries an increased risk of infection or deterioration in health, and contributes to a slower recovery from illness or injury. It decreases the quality of life for the resident and often compounds, the more weight we lose, the lower our appetite is and the harder it is to regain weight.

The standard diet provided to all residents must cater for the majority of residents' needs, and given that undesired weight loss and malnutrition is so prevalent in our elderly population the menu must be designed with this in mind. Providing a low fat menu is NOT appropriate in aged care. The recommendation is for full cream dairy products and the use of unsaturated fats in cooking as a standard. Snacks must be provided between meals, they are an important source of energy and nutrients. It is ideal to base these snacks around full cream dairy products, fruit and low GI breads and cereals. It is acknowledged that some residents are overweight and weight loss or maintenance may be required, this group is the exception and need to be managed on an individual level: page 30 gives an overview of how to manage the menu for overweight residents.

Residents on texture modified diets are at an even greater risk of malnutrition. It is essential when meals are pureed that the energy and nutrient levels are not diluted by using water to 'thin' them. If extra fluid is required milk, gravies and cheese sauces are more appropriate choices. All pureed meals should be routinely fortified with high protein, high energy additions, see ideas page 28.

All residents must be weighed at least monthly. Results should be documented in a serial fashion on either a chart or graph to detect both individual trends and trends across the facility. In addition, residents should be reviewed using a formal validated malnutrition screening tool on admission to the facility and at every care plan review (ideally three monthly)¹¹. Screening residents ensures that any nutritional issues are picked up early: it is much easier to maintain weight than it is to facilitate weight gain.

For residents identified at risk of malnutrition, or who are malnourished, as a first line of management, "home made" supplementary milk drinks should be provided upon request (see page 28 for recipe ideas) and additions such as butter, margarine, cream and grated cheese should be added to food. Proprietary products can also be useful. Egg flips are not recommended because of the risk of bacterial contamination. Commercial egg nog is suitable as the product has been pasteurised.

Eating small frequent meals is often better when someone has a reduced appetite. Six small meals a day may be more appealing than three large meals.

If a resident is not hungry, nourishing drinks may be used with meals or snacks or as a replacement for a snack. It is best to offer nutritious drinks in place of low energy drinks such as water, tea, coffee and low joule drinks. These drinks are filling but provide little nutrition or energy.

If a resident refuses to eat a particular food group eg meat, then offer the foods that they will eat readily, even if this means that they are not eating a 'balanced' diet. For example a resident may refuse the hot meal but will eat two desserts. If this happens consistently then they may need supplementation with a multivitamin and mineral supplement.

A dietitian should be consulted for a more detailed review if the simple measures outlined here do not help and the resident continues to lose weight.

Ideas to increase energy intake

1. Fortify milk with skim milk powder (see recipe below) or use canned evaporated milk when making soups, white sauce, milk drinks, milk based desserts, egg based meals or cereals.
2. Add skim milk powder to mashed potato as well as milk and margarine.
3. Add extra diced or minced lean meat or chicken to soup or main meals.
4. Add an egg to milk based meals or desserts. Note: Raw eggs should not be added to cold milk drinks.
5. Make sauces to accompany meat and vegetable dishes, including margarine or oil, fortified or evaporated milk, eggs, mayonnaise or gravy.
6. Use higher fat cooking methods such as frying in a poly or monounsaturated oil, eg olive, canola, sunflower or safflower.
7. Add extra margarine or oil to vegetables.
8. Spread margarine or butter more liberally.
9. Offer cold food eg fruit and cheese as it sometimes can be more appealing if appetite is reduced.
10. Add full cream ice-cream or yoghurt to desserts.

Nourishing drinks

Fortified Milk

1 cup skim milk powder blended into 4 cups milk.

Refrigerate for 1 or 2 days only.

1 serve fortified milk

¼ cup skim milk powder blended into 1 cup of milk.

Banana Shake

1 cup fortified milk

1 banana

1 tablespoon Milo or similar flavouring

1 scoop ordinary ice-cream

Blend together and serve chilled.

Tropical Shake

1 cup fortified milk

½ cup fruit salad (or desired fruit)

½ cup apricot nectar

1 scoop ordinary ice-cream

Blend together and serve chilled.

Apple Cinnamon Drink

1 cup fortified milk

100g vanilla Fruche

1 cup canned apple or apple puree

Apple juice (1 tablespoon)

Cinnamon to taste

Blend together and serve chilled.

Iced Coffee

1 cup fortified milk

1 scoop ordinary ice-cream

Coffee to taste

1 teaspoon sugar

Blend together and serve chilled.

Commercial supplements

Most facilities will use a variety of commercial supplements to increase the protein and energy intake of residents when standard measures have not been able to prevent weight loss. The majority of these are low glycaemic index and can be used for residents with diabetes. Your facility may be using:

- > standard milk based supplement, powder or liquid
- > clear fluid supplement for individuals who dislike milk
- > concentrated supplement given 3 or 4 times a day on the medication round
- > puddings
- > energy additions or protein powders
- > wound care supplement.

Almost all of these are suitable for diabetes management. There is little need for specific diabetes supplements but may be needed if diabetes is unstable after using the standard products. Ask your dietitian for advice.

DO NOT use a glucose polymer without a dietitian recommendation as this is a pure carbohydrate and likely to affect blood glucose levels.

The management of overweight residents

Residents in aged care may be overweight but it is not always necessary or appropriate to facilitate weight loss in these residents. It is important to remember that if a resident is overweight, it does not always mean they are well nourished; they may be deficient in protein, or micronutrients and their excess 'weight' may be fluid from oedema or ascites (excess fluid in the space between the tissues lining the abdomen and abdominal organs).

When deciding if it is appropriate to modify the diet for an overweight resident, various factors should be considered:

- > Is it at the resident's request or it is a decision that has been made by care staff?
- > Is the resident's health and quality of life being affected by their weight?
- > Is the resident at risk of pressure ulcers and wound breakdown?
- > Is the resident's weight increasing meaning that clothes no longer fit and chairs and equipment are no longer big enough?
- > Is there an occupational health and safety issue for the staff?

Respecting the autonomy and choice of a resident is fundamental, if they are cognitively aware and decide they do not want to lose weight, it is not appropriate to implement weight reduction strategies.

Where it is decided that weight control is required, an appropriate goal is to stabilise and maintain a resident's weight instead of facilitating large amounts of weight loss as evidence indicates that both unintentional and intentional weight loss in the elderly is initially muscle, fluid and even bone mass prior to any fat loss¹².

If the decision is made to commence a weight reduction dietary plan, slow weight reduction is advised. The intake of excess fat, sugar and alcohol is discouraged and an increase in the intake of fruit, vegetables, breads and cereals (preferably wholegrain) is encouraged. The following practical tips are a good starting point, however it is best to seek expert advice from a dietitian to establish a suitable individualised 'weight management' plan.

Practical tips for weight control in aged care

- > encourage water, diet drinks, skim milk, tea and coffee with sweetener. Avoid ordinary soft drink, cordial, and limit fruit juice to one small glass per day only
- > use low fat dairy products, including milk and yoghurts
- > spread margarine thinly on bread
- > avoid fried foods, creamy sauces and added cheese to meals
- > limit gravy to 1Tbsp only
- > provide large serves of vegetables or salads with low fat dressings
- > avoid creamy soups - provide large serves of vegetable soups
- > avoid fatty sandwich meats such as Fritz/Devon
- > encourage fruit-based desserts with small quantity of ice cream or ½ cup milk dessert
- > avoid cream based desserts.

Soft diets¹⁰

If a resident has teeth that are in poor condition or no teeth at all, they may have trouble eating and chewing some foods. There will be a higher risk of choking if the resident is unable to chew food properly. In this situation, an initial strategy is to provide soft or minced foods. It is best to have two main dish choices on your menu to improve variety for all residents, make one of these choices a soft option to cater for residents requiring soft foods. Some residents may require a soft diet, or other modified consistency diets due to a swallowing deficit (dysphagia) and need to be assessed by a speech pathologist (see below).

Smooth puree and minced and moist diets

Smooth puree and minced and moist diets along with thickened fluids can often be required due to a decline in a resident's ability to safely chew and swallow (dysphagia). This can be a result of a variety of reasons eg stroke, Parkinson's disease, dementia, motor neuron disease or cancer.

Signs of an unsafe swallow include:

- > choking and coughing before, during or after swallowing
- > drooling
- > wet gurgly voice after swallowing
- > 'pocketing' of foods in the cheeks
- > taking a long time to chew and swallow
- > fear of swallowing
- > regurgitation
- > gradual weight loss
- > frequent chest infections.

If a resident displays any of these symptoms it is essential that a speech pathologist is consulted to establish the resident's swallowing function and determine appropriate care. A speech pathologist will also advise on the correct texture of foods and thickness of fluids required for a safe swallow. It is essential that advice is strictly adhered to as textures and thicknesses of foods and fluids outside of those recommended by the speech pathologist are

unsafe and may result in a resident choking.

All texture modified meals must be routinely fortified with high energy, high protein additions as discussed in the malnutrition section on page 27.

Residents on texture modified diets must be provided with appropriate snacks including smooth custards and yoghurts, milk shakes and pureed fruits.

It is wise to involve a dietitian in the nutritional care of residents requiring texture modified diets if unsure.

Constipation

Constipation can affect as many as two out of three residents in aged care facilities¹⁰. There may be many contributing factors to constipation, including poor food or fluid intake, medication or lack of mobility. If residents have a poor appetite and their overall dietary intake is low, it is very difficult to provide enough fibre to meet the goal of 25 to 30g per day. Residents on texture modified diets are at an increased risk of insufficient dietary fibre as their high fibre food choices are limited.

The standard diet should be high in fibre; it must provide wholemeal, wholegrain and high fibre white breads, high fibre cereals, fresh fruit and vegetables, legumes and high fibre baked goods such as wholemeal muffins and fruit cakes. Adding some wholemeal flour into baked goods is an excellent way to provide additional fibre, 25% wholemeal flour is generally well accepted. A prune and bran mix could be provided at breakfast for those residents who require additional fibre (see recipe below).

Prune, apple and bran mix

¼ cup unprocessed bran

½ cup stewed prunes

½ cup apple puree

Puree all ingredients together.

Makes 10 x 2 tbsp serves.

It is essential that fluid is encouraged – if fibre is increased and fluid intake is poor, constipation may become worse. Most elderly residents require 6 – 8 glasses of fluid each day. To encourage this intake:

- > offer small frequent drinks
- > make a variety of fluids available
- > use suitable cups
- > fill cups twice at mid meals
- > provide straws for residents who can't get to the bottom of their drink
- > add cordial to bed side water
- > provide extra monitoring for residents requiring thickened fluids.

When the above measures are not enough, fibre supplements, laxatives or other agents may be required. Seek medical advice if unsure.

Diabetes and physical activity

There are many benefits of physical activity, such as, improved sense of well being, improved blood glucose levels and cardiovascular health. Most individuals in aged care are unable to be as active as they were in the past but should be encouraged to be as active as they are able to within limitations they may have. Most facilities will have a gentle exercise class or other activities where residents can be active. There is usually no need to adjust diet or medication.

However, some residents have very high energy expenditure, walking all day. These residents may be at risk of hypoglycaemia and may need a higher carbohydrate intake. If a resident does some significant physical activity on a particular day or a particular time they may need some extra carbohydrate food prior to that activity. Discuss this with your dietitian.

Unstable diabetes

There are times that an individual's blood glucose levels may become unstable, either too low or too high. This section outlines some simple measures for coping with these situations. It is very important that your facility has a formal policy and procedure for managing unstable diabetes. Each person should have an individual action plan for hypoglycaemia, hyperglycaemia and sick days which includes their blood glucose targets and when to notify the doctor.

Hypoglycaemia

Hypoglycaemia occurs when blood glucose levels fall too low. The blood glucose value at which hypoglycaemia is clinically recognised is below 4mmol/L, but symptomatic hypoglycaemia can vary according to age and duration of diabetes. Hypoglycaemia needs to be treated at the clinically recognised level whether the person has symptoms or not. Some people who have had diabetes for many years may not experience any symptoms at all.

For older people, less than 4mmol/L may be too low and therefore modification may require an upward adjustment to avoid hypoglycaemia¹³.

Many individuals in an aged care facility will be on oral hypoglycaemic medication or insulin to keep blood glucose levels within a healthy range. These medications have the potential to cause hypoglycaemia.

Usual causes of hypoglycaemia include:

- > missing a meal or snack
- > not eating enough carbohydrate foods
- > delaying a meal (or an enteral feed)
- > over administration of insulin or oral hypoglycaemic medication
- > prolonged physical activity with no food or adjustment of insulin
- > excess alcohol intake
- > vomiting and diarrhoea.

Symptoms of hypoglycaemia include:

- > pale skin / sweating
- > shakiness / palpitations
- > hunger
- > headache or stomach ache
- > confusion / inappropriate behaviour
- > ultimately seizures and coma if untreated.

Hypoglycaemia can be graded as being:

- > mild if an alert resident is able to let staff know they feel low eg symptomatic or can self treat him/herself
- > severe if a staff member or family recognises the symptoms and then provide help in the form of food or drink containing glucose or the person is unconscious or so disorientated that emergency treatment is needed.

The following is a suggested protocol for the treatment of people with hypoglycaemia. Your facility should have its own standard procedures.

Blood glucose levels less than 4mmol/L (or the lower limit for that person) whether the person has symptoms or not, treatment must be commenced.

Step 1

15g of fast acting carbohydrate, for example:

- > 90mls Lucozade (or equivalent in Glucosan)

Observe over 5 - 10 minutes and retest the BGL.

If BGL is still less than 4mmol/L (or the lower limit for that person), repeat step 1.

If BGL is 4mmol/L or higher, move to step 2.

Step 2

> slow acting carbohydrate intake, for example:

- > ½ sandwich
- > or 2 Sao biscuits
- > or 1 piece fruit
- > or 1 cup milk
- > or 1 Weetbix plus milk
- > or ½ cup regular custard
- > or ¾ cup pureed fruit
- > or eat the next planned meal if immediately available (ensure adequate carbohydrate).

If the person is uncooperative and/or unconscious then this is a medical emergency and appropriate emergency measures must be put in place. Your facility should have a procedure for dealing with such emergencies.

Monitor

Check blood glucose levels after 15 - 30 minutes. If the blood glucose level is less than 4mmol/L (or the lower limit for that person) repeat step 1 and 2. It is necessary to ensure that the hypoglycaemia does not reoccur and that the blood glucose level remains within the target range.

Blood glucose levels should be monitored 2 - 4 hourly if needed for up to 12 - 24 hours depending on severity and duration of episode. Review blood glucose levels and medication by the treating doctor at the next available opportunity.

Hypo Kit

A 'hypo' kit should be assembled and placed in a prominent position in every unit. The following is an example.

Hypo kit (this is an example and may vary)

- > to be checked daily and restocked as needed
- > simple carbohydrate
 - 1 bottle Lucozade (90mls = 15g carbohydrate)
- > complex carbohydrate
 - 2 x 2 Sao biscuits = 15g carbohydrate each serve
 - 2 x snack pack of puree fruit or custard = 15g carbohydrate each serve.

If you have residents with diabetes who also require thickened fluids then some thickener and instructions for use should also be included.

Remember that hypoglycaemia can be avoided by ensuring that the person has medication appropriate to their needs, that medication is given at prescribed time, that meals and snacks (if necessary) have adequate carbohydrate, and by monitoring and reviewing blood glucose levels regularly.

Hyperglycaemia

Hyperglycaemia occurs when blood glucose levels rise too high (are usually greater than 15mmol/L). If not detected and the blood glucose levels continue to rise, the individual can develop:

- > in type 1 diabetes: diabetic ketoacidosis (DKA)
- > in type 2 diabetes: hyperglycaemic hyperosmolar state (HHS).

DKA occurs in people with type 1 diabetes and contributing factors include:

- > blood glucose greater than 15mmol/L
- > urine or blood ketones are present
- > illness and / or infection (eg urinary tract infection)
- > inadequate insulin doses
- > inappropriate sick day management.

Features may include:

- > excessive thirst
- > excessive urination
- > dehydration
- > urine or blood ketones
- > impaired conscious state.

Progressing to:

- > nausea, vomiting, abdominal pain
- > rapid breathing (Kussmaul's respiration)
- > coma / death.

Monitor blood glucose 2 hourly if unwell, febrile and or blood glucose greater than 15mmol/L. Notify the medical officer if blood glucose greater than 15mmol/L for more than 12 hours. Check ketones if blood glucose is over 15mmol/L and report both ketones and/or elevated blood glucose to the medical officer as a matter of urgency. Elevated ketones may indicate progressive DKA, the doctor must be notified.

HHS can occur in people with type 2 diabetes and contributing factors are:

- > blood glucose greater than 15mmol/L
- > dehydration
- > illness and / or infection (eg urinary tract infection)
- > inadequate insulin / medication doses
- > inappropriate sick day management.

Features may include:

- > excessive thirst
- > excessive urination
- > dehydration
- > impaired conscious state.

Ketones are unlikely to be present; however hyperglycaemia causes osmotic diuresis leading to extreme dehydration and electrolyte imbalance. Monitoring blood glucose levels 4 times/day (at usual meal time and bed time) is recommended. Notify the medical officer if hyperglycaemia is prolonged eg 24 – 48 hours¹⁴.

Sick days

If the person with diabetes is feeling unwell and is not eating normally they can be at risk of hypoglycaemia or hyperglycaemia. There are a number of strategies that must be put in place.

1. Monitor the person's blood glucose levels more frequently. Test urine or blood for ketones if type 1 diabetes.
2. If the person has type 1 diabetes, the insulin must NOT be stopped. The person may actually need more insulin than usual. The doctor must be consulted for any change to insulin.
3. If the person has type 2 diabetes (oral medication or insulin treated) the dose may need to be modified. The doctor must be consulted for any changes in dose.
4. Adequate fluid must be encouraged. Offer ½ to 1 cup of fluid every hour.
5. Encourage normal food intake if possible. It is important that carbohydrate foods are eaten regularly. The person should have carbohydrate containing foods at every meal.

Try the following suggestions:

- > bread or toast
 - > dry cracker biscuits
 - > plain sweet biscuits
 - > tinned or stewed fruit
 - > fruit juice
 - > pureed fruit
 - > custard
 - > ice-cream.
6. If the person is unable to eat then carbohydrate must be offered in other forms.
If blood glucose levels are less than 15mmol/L:
 - > ordinary jelly
 - > ordinary cordial
 - > ordinary soft drink
 - > Lucozade
 - > sports drinks.
 7. If blood glucose levels are more than 15mmol/L:
 - > diet jelly
 - > diet cordial
 - > diet soft drink.
 8. If the person has diarrhoea, sugary drinks may need to be diluted eg half strength cordial or ordinary lemonade or juice. Rehydration solution (eg Gastrolyte) can help to replenish fluid and electrolytes lost if the person is vomiting, has diarrhoea or is dehydrated. Rehydration solutions have a relatively low concentration of carbohydrates therefore additional carbohydrate may be required¹⁴.
 9. At all times blood glucose levels must be monitored more often and the person's general practitioner must be consulted regularly.

General diabetes care

Residents with diabetes have a right to an individualised diabetes management plan which considers their age, functional mobility and cognitive capacity. It is important that all residents have a cycle of care to ensure their diabetes is re-assessed regularly and that any problems are identified as soon as possible. Cycle of care includes routine monitoring of:

blood pressure

height/weight/waist (BMI)

foot checks

HbA1c

lipids

microalbuminuria

eye review

medication review

smoking

self care education review

healthy eating review

physical activity¹⁵.

Note: The frequency of monitoring will depend on the persons individual risk factors and whether there are any other co morbidities present.

In addition to the cycle of care residents have access to a number of MBS items such as;

- > MBS Health Assessment item – this Comprehensive Medical Assessment can be provided to a resident of a residential aged care facility by a GP or other medical practitioner.
- > MBS Chronic Disease Management item 731 allows for GPs to contribute to a multidisciplinary care plan for a resident of an aged care facility, or to a review of such a plan where the care plan was developed by that facility. Once a GP has contributed to a care plan the resident may be eligible for access to certain individual allied health services on referral from the GP eg diabetes educators, dietitians, exercise physiologists, podiatrists, as well as others.
- > MBS items 735-758 can be used by GPs to organise and coordinate a multidisciplinary case conference in a residential aged care facility and MBS item 903 can be used by GPs to participate in Residential Medication Management Reviews (RMMR) for residents of aged care facilities.

Oral hygiene issues

Care of teeth and prevention of tooth decay is important in residential care. There are multiple factors which may impact on rates of decay in older individuals. Some of those that relate to diet or nutrition include medical illnesses, medications, dry mouth, frequency of eating or drinking, sticky food eg lollies, acidic drinks eg fruit juice, food not cleared adequately from the mouth or gums, poor tooth brushing. A high sugar intake will also contribute but is not the main factor in aged care.

Practical strategies that can minimise risk of decay and improve oral health may include but not be restricted to the following. It must be remembered that maintaining adequate nutrition status is also of paramount importance. These strategies are designed for the 'at risk' resident and should not be used for all residents. Most residents should receive ordinary cordial and fruit juice and nourishing drinks as desired.

1. Keep mouth moist
 - > saliva substitutes
 - > sugarless gum (be aware that excess consumption may cause abdominal upset or diarrhoea)
 - > sip water.
2. Limit fruit juice to meal and snack times only.
3. Discourage frequent snacking between meals
 - > provide food at meal times and scheduled snack times, not in between.
4. Reduce sugar intake
 - > avoid lollies and sweet foods that stick to the teeth
 - > avoid sucking on sugary lollies
 - > avoid soft drink and cordial
 - > use sweetener in tea and coffee
 - > provide normal desserts and nourishing fluids, but ensure other strategies to limit the time that the teeth are exposed to sugar eg rinsing with water.
5. Encourage use of a straw for any drinks containing sugar eg juice, milk and supplements.
6. Rinse mouth with water at the completion of a meal or a sugary drink.
7. Include dairy foods regularly - they assist in neutralising acidity in the mouth.
8. Assist resident with frequent brushing of teeth - morning and night every day.
 - > an electric toothbrush (soft) may be of assistance
 - > implement other good oral care systems if brushing is not possible
 - > implement good denture care practices.
8. Topical fluoride application
 - > refer to dentist for advice
 - > apply fluoride paste daily
 - > fluoride containing mouth wash.

Muffin and dessert recipes¹⁶

As discussed throughout this manual all main meals and soups are suitable to provide to residents with diabetes. The following recipes are included to give an example of some of the sweet dishes that can be incorporated onto the standard menu that are also suitable for residents with diabetes.

The recipes are based around fruit and dairy products, providing a significant source of important nutrients.

Muffins

Apricot yoghurt muffins

Makes 24

Ingredients

120g margarine

½ cup caster sugar

4 eggs

1 cup full cream milk

2 cups apricot yoghurt

3 cups self raising flour

1 cup wholemeal flour

½ tsp baking soda

Method

Cream margarine and sugar together until pale.

Beat in the eggs, and then stir in the milk and yoghurt.

Sift in the flour and soda and stir gently to combine.

Divide into greased muffin tins and bake at 180°C for 20 minutes.

Nutrition Information	
Per Serve (1 muffin)	
Energy	723kJ
Protein	4.9g
Fat	6.3g
Carbohydrate	23.5g
- Sugars	7.7g
Fibre	1.3g

Banana bran muffins

Makes 24

Ingredients

3 cups wholemeal self raising flour

3 cups unprocessed bran

¼ cup raw sugar

4 ripe bananas

250g margarine (melted)

2 eggs

2 cups buttermilk

Method

Combine flour, bran and sugar in a bowl – make a well in the centre.

Add mashed bananas, melted margarine, beaten eggs and milk to the dry mix and gently combine.

Divide into greased muffin tins and bake at 200°C f or 15 – 20 minutes.

Nutrition Information	
Per Serve (1 muffin)	
Energy	616kJ
Protein	3.8g
Fat	8.6g
Carbohydrate	11.7g
- Sugars	6.4g
Fibre	4.5g

Pear and ginger streusel muffins

Makes 24

Ingredients

3 cups flour

1 cup wholemeal flour

2 tbsp baking powder

2 tsp ground ginger

1 cup brown sugar

1½ cups full cream milk

4 eggs

½ cup oil

2 pears (peeled and finely sliced)

Method

Sift flour, baking powder and ginger into a bowl.

Whisk together milk, eggs and oil in another bowl – add to dry ingredients and gently combine.

Fold in pear slices.

Divide into greased muffin tins and bake at 180°C f or 20 minutes.

Nutrition Information	
Per Serve (1 muffin)	
Energy	582kJ
Protein	3.0g
Fat	6.5g
Carbohydrate	17.2g
- Sugars	8.7g
Fibre	1.1g

Desserts

Baked fruit pudding slice

Serves 25

Ingredients

1 tsp cinnamon

Sprinkle ground cloves

3 cups self raising flour

1 cup wholemeal self raising flour

20g baking soda

250g margarine (melted)

1kg fruit mince

250ml water

3 eggs

Method

Combine spices, flour and baking soda together in a machine mixing bowl.

Add margarine and fruit mince and combine.

Add water as needed, mixing on low speed, add beaten eggs gradually.

Pour into baking trays and bake at 160°C for 25 minutes.

Serve with custard.

Nutrition Information	
Per Serve (1 slice)	
Energy	1019kJ
Protein	3.7g
Fat	9.2g
Carbohydrate	36.0g
- Sugars	20.3g
Fibre	2.5g

Bread and butter pudding

Serves 25

Ingredients

2 fruit loaves

100g margarine

¾ cup sultanas

Sprinkle cinnamon

1.25 litres full cream milk

8 eggs

¼ cup plum jam

Method

Remove crusts from fruit loaf and spread slices with margarine, place on the base of an oiled baking dish.

Sprinkle sultanas and cinnamon between layers of bread.

Beat eggs and milk together and pour over fruit loaf.

Bake at 160°C for 30 – 40 minutes or until custard is set and pudding is golden.

Prior to serving melt plum jam over a gentle heat and pour over pudding.

Nutrition Information	
Per Serve	
Energy	734kJ
Protein	5.8g
Fat	7.3g
Carbohydrate	21.6g
- Sugars	12.8g
Fibre	1.3g

Creamed rice and peaches

Serves 25

Ingredients

2½ cups custard powder

1¼ cups coconut milk powder

2½ litres full cream milk

1½kg canned diced peaches in natural juice

700g cooked rice

1 tsp nutmeg

1kg canned peach slices in natural juice

Method

Mix custard powder, coconut powder and a little milk together to form a paste.

Add remaining milk to a pot and bring to the boil, whisk in the paste, reduce heat and allow to simmer for 3 minutes stirring constantly.

Add drained diced peaches and cooked rice to custard and spoon into a baking dish.

Sprinkle with nutmeg, refrigerate and allow it to set.

Serve with peach slices.

Nutrition Information	
Per Serve	
Energy	833kJ
Protein	4.6g
Fat	6.5g
Carbohydrate	29.8g
- Sugars	1.0g
Fibre	1.5g

Cherry and apple cobbler

Serves 25

Ingredients

1¼ cups self raising flour
¼ cup wholemeal self raising flour
2 tsp baking soda
100g margarine
250ml full cream milk
2kg pitted cherries
2kg canned apples
1 tbsp sherry
½ cup cornflour
Cinnamon to taste
Custard to serve

Method

Drain cherries (reserving juice) and mix with apples in a baking tray.
Combine cherry juice, sherry and cornflour, cook over gentle heat until very thick.
Pour sauce over fruit in tray.
Mix flour, baking soda and margarine together, add milk until a scone like dough is formed.
Press out on a floured surface and cut into squares.
Cover fruit with dough squares.
Sprinkle with cinnamon and bake in a moderate oven at 160°C for 20 minutes, reduce oven heat to 130 - 140°C and bake for a further 30 minutes.
Serve with custard.

Nutrition Information	
Per Serve	
Energy	716kJ
Protein	2.1g
Fat	3.5g
Carbohydrate	32.0g
- Sugars	21.8g
Fibre	2.7g

Citrus pears

Serves 25

Ingredients

25 fresh pears
2½ litres orange juice
2 tbsp apricot jam
Orange rind
1 orange
1¼ litres water
1 tbsp cornflour
Custard to serve

Nutrition Information	
Per Serve	
Energy	559kJ
Protein	1.2g
Fat	0.3g
Carbohydrate	30.7g
- Sugars	25.1g
Fibre	3.3g

Method

Peel pears and stand upright in trays.

Pour orange juice over pears until the wide base of pears are covered, top up with water if required.

Dollop jam and rind on top of pears.

Bake pears in a moderate oven until tender (approximately 30 minutes).

Remove pears from liquid, add cornflour to the liquid and stir to thicken.

Serve pears with sauce and custard.

Creamed sago

Serves 25

Ingredients

350g sago
2¾ litres full cream milk
Vanilla essence to taste
100g castor sugar
350ml cream

Nutrition Information	
Per Serve	
Energy	800kJ
Protein	4.0g
Fat	10.1g
Carbohydrate	21.6g
- Sugars	9.7g
Fibre	0.1g

Method

Boil milk and vanilla together.

Add sago, stir frequently, add sugar.

Remove from heat and allow to cool.

When cool add cream and stir through, add extra milk to thin if required.

We are grateful to Meals on Wheels South Australia for allowing us to use their recipes. Meals on Wheels provide a diabetes friendly menu for their recipients.

Food hygiene

To minimise bacterial contamination and growth, local government regulations must be followed. Please contact your local government for these.

To reduce bacteria growing in food

- ✓ check the temperature of food. If a food is not kept at the correct temperature bacteria can grow very fast
- ✓ buy a fridge thermometer and measure the temperature of the food in your fridge and freezer
- ✓ thaw foods in the fridge
- ✓ cover leftovers and put in the fridge immediately after serving
- ✓ store food correctly
- ✓ throw away all plates, bowls and cups with chips or cracks in them
- ✓ keep cooked foods above raw foods in the refrigerator

DO NOT:

- ✗ thaw foods at room temperature
- ✗ leave leftovers on the bench to be served later
- ✗ use raw eggs in drinks

Personal hygiene

Food poisoning can occur through poor hygiene of people handling food.

Wash hands thoroughly:

- > after going to the toilet
- > before and after touching raw meat, fish and chicken
- > after touching hair, nose, mouth or clothes
- > after going on a break
- > when changing food preparation tasks or changing disposable gloves.

When handling food remember:

- ✓ use tongs or use disposable gloves
- ✓ cover any cuts, scratches and sores
- ✗ avoid sneezing or coughing on food or hands
- ✗ do not handle food when you are sick.

References

- ¹ Banks M, Ash S, Bauer J, Gaskill D (2007) Prevalence of malnutrition in adults in Queensland public hospitals and residential aged care facilities, *Nutrition and Dietetics*, 64: 172-178.
- ² American Dietetic Association (2005) Position of the American Dietetic Association: Liberalisation of the diet prescription improves quality of life for older adults in long term care, *Journal of the American Dietetic Association*, 105: 1955-1965.
- ³ Diabetes Australia (2004) *Healthy eating for older people with diabetes*, Diabetes Australia, NSW.
- ⁴ American Diabetes Association Task Force (2002) American Diabetes Association Position Statement: Evidence-based nutrition principles and recommendations for the treatment and preventing of diabetes and related complications, *Journal of the American Dietetic Association* 102: 109-118.
- ⁵ Schafer R, Bohannon B, Franz M, Freeman J, Holmes A, McLaughlin S, Haas L, Kruger D, Lorenz R, McMahan M (2004) American Diabetes Association: Diabetes nutrition recommendations for health care institutions, *Diabetes Care* 27(1): S55-S57.
- ⁶ Mehr SR (2005) Optimising diabetes outcomes in the elderly, *Long Term Care Interface* 1(1): S3-S11.
- ⁷ Tariq SH, Karcic E, Thomas DR, Thomson K, Philpot C, Chapel DL, Morley E (2001) The use of a no-concentrated-sweets diet in the management of type 2 diabetes in nursing homes, *Journal of the American Dietetic Association* 10(12): 1463-1466.
- ⁸ University of Sydney. *Glycemic Index*, Glycemic Index Foundation, accessed online October 2011, <http://www.glycemicindex.com>
- ⁹ National Health and Medical Research Council (2009) *Australian guidelines to reduce health risks from drinking alcohol*, NH&MRC.
- ¹⁰ Bartl R, Bunney C (2004) *Best practice food and nutrition manual for aged care facilities*, Nutrition Services, Central Coast Health, Northern Sydney Central Coast Area Health, NSW.
- ¹¹ Dietitians Association of Australia (2009) Evidence based practice guidelines for the nutritional management of malnutrition in adult patients across the continuum of care. *Nutrition and Dietetics*, 66 (3): S1-S34.
- ¹² Ensrud KE, Fullman RL, Barrett-Connor E, Cauley JA, Stefanick ML, Fink HA, Lewis CE, Orwoll E (2005) Voluntary weight reduction in older men increases hip bone loss: The osteoporotic fractures in men study (1998-2004), *Journal of Clinical Endocrinology and Metabolism* 90 (4).
- ¹³ Australian Diabetes Educators Association (2003) *Guidelines for the management and care of diabetes in the elderly*, May, ADEA, Canberra.

¹⁴ Australian Diabetes Educators Association (2006) *Guidelines for sick day management for people with diabetes*, ADEA, Canberra.

¹⁵ Royal Australian College of General Practitioners Guidelines 2010-2011 (2010) *Diabetes management in general practice*, RACGP, Canberra.

¹⁶ Meals on Wheels (2004) *Menus, recipes and nutrition manual*, South Australia Incorporated.

Other References / Resources

Australian Institute of Health and Welfare (2011) *Diabetes prevalence in Australia: Detailed estimates for 2007–08*, Diabetes series no. 17 July, AIHW, Canberra.

Diabetes Outreach (2009) *Diabetes manual: a guide for diabetes management*, Diabetes Outreach, Country Health South Australia, Adelaide.

Dietitians Association of Australia (2010) *Nutrition Manual*. Dietitians Association of Australia, Canberra.

Dick M (2000) *Food book for licensed residential centres, hostels and group homes*, Central Sydney Area Health Service.

Hanley M, Stansbie K (2005) *Presenting puree*, Community Nutrition Unit, Department of Health and Human Services, Hobart.

International Diabetes Institute (2001) *Australian Diabetes Obesity and Lifestyle Study (AusDiab)*, International Diabetes Institute, Melbourne.

National Health and Medical Research Council (2005) *Dietary Guidelines for Older Australians*, NH&MRC, Canberra.

National Health and Medical Research Council, Department of Health and Ageing (2005) *Nutrient reference values for Australia and New Zealand*, NH&MRC, Department of Health and Ageing, Canberra.

Nutrition and Dietetics Department (2008) *Puree to perfection: a guide to implementing the approach*. Nutrition and Dietetics Department, Osborne Park Hospital, Western Australia.

Nutrition Professionals Australia (2006) *Special diets meal plans for aged care facilities*, NPA, Adelaide.