

type
type

Best practice guidelines

type 2 diabetes

Dietetic

Best practice
guidelines for
management
of type 2
diabetes



Queensland Government
Queensland Health

BRISBANE
INNERSOUTH DIVISION OF GENERAL PRACTICE

Foreword

Diabetes is a national and state health priority. Diabetes is responsible for significant morbidity and mortality, which impacts on the Queensland Health system, and more importantly, on the lives of those with diabetes, their families and carers.

Divisions of General Practice have, in the past, highlighted difficulties in accessing public Allied Health Services. To address this issue, Queensland Health, through the Principal Allied Health Adviser, formed the Queensland Diabetes Allied Health Task Group to develop evidence-based guidelines for the Allied Health areas involved in diabetes care — Diabetes Education, Dietetics and Podiatry.

The resulting Best Practice Guidelines for the Management of Type 2 Diabetes identify:

- evidence-based practices in the area of diabetes
- criteria other professionals should use when referring
- pathways for efficient service delivery, and
- services that can be provided by a range of accredited service providers

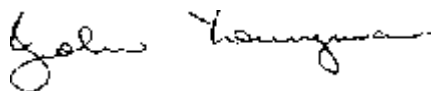
These guidelines support the Diabetes Health Outcomes Plan through implementation of strategies in the plan. Referral information in these guidelines have also been included in the General Practice Advisory Council's Management of Diabetes Mellitus in Adults — Standard Clinical Care Pathway 2000, providing an overview health professional involvement in type 2 diabetes across the continuum of care.

These guidelines should be used in conjunction with the Diabetes Health Outcomes Plan and the General Practice Advisory Council's Management of Diabetes Mellitus in Adults — Standard Clinical Care Pathway 2000.

Queensland Health is committed to providing efficient and effective services to people with diabetes. These Guidelines provide a blueprint for best practice in the area of type 2 diabetes and diabetes education, dietetics and podiatry.

I recognise the significant work done by professionals and professional associations involved in developing these guidelines and thank all those involved in the task group for their collaboration and support.

I am pleased to endorse these guidelines and ask that health professionals involved in the care of people with diabetes become familiar with this document and encourage its use.



Dr J Youngman
General Manager, Health Services
Queensland Health

Acknowledgments

The Brisbane Inner South Division of General Practice convened the Quality Management Working Party – Dietetics to develop Best Practice Guidelines for the management of type 2 diabetes. This was done in conjunction with The Queensland Health Allied Health Taskforce. Expressions of interest were sought from the Dietitians Association of Australia – Queensland Division and the DAA Diabetes Special Interest Group. The following people have contributed to the development of the Nutrition Practice Guidelines Type 2 Diabetes Mellitus.

Facilitator:

Rachael Bradford Dietitian, Brisbane Inner South
Division of General Practice

Members:

Anita Cochrane Dietitian
Helen Elliott Dietitian, Diabetes Centre Gold Coast Hospital
Aloysa Hourigan Dietitian, Mater Nutrition Centre
Christine Josephson Dietitian, Logan Hospital
Alison Kempe Dietitian, Diabetes Centre
Cairns Base Hospital
Maria Leone Dietitian, Diabetes Australia

Assisted by:

Dr Natasha Posner Lecturer – Medical Sociology
University of Queensland
Mayne Medical School
Christine Kardash Health Programs Manager (Dietitian)
Brisbane Inner South Division of General Practice
Katherine Warth President, Dietitian’s Association of Australia
Queensland Division and Private Practice
Sector Committee
Jacqueline Orazio Senior Project Officer
Health Advisory Unit, Queensland Health
Dr Sandra Capra Director, School of Public Health
Academic Program
Queensland University of Technology
Dr Susan Ash Deputy Director, Nutrition and Food Services,
Princess Alexandra Hospital

Contents

1. Nutrition management in diabetes by dietitians-nutritionists	4
2. Qualifications	4
2.1 Mandatory	4
2.2 Highly desirable	4
3. Standards of professional practice	4
3.1 Professional competence	4
4. Referral criteria	5
4.1 Criteria for referral to a dietitian-nutritionist	5
5. Nutrition practice guidelines for type 2 diabetes	6
5.1 Desired outcomes and objectives of lifestyle and nutrition interventions	6
5.2 Level of nutritional care	7
5.3 Priority	8
5.4 How to use these guidelines	8
5.5 Flexible competencies	9
5.6 Evidence for assessments and intervention/education	9
5.7 Tables of necessary elements of nutrition assessments	9
5.7.1 Assessment of clinical data	11
5.8 Tables of necessary elements of nutrition assessment and interventions/education	11
5.8.1 Nutrition and anthropometric assessment and nutrition intervention	12
5.8.2 Psychosocial assessment and intervention	13
5.8.3 Physical activity assessment and intervention	14
6. References	16
Appendix 1	18
Risk factors	18
Diabetes management	18
Specific nutrition prescription	19
Appendix 2	20
Methodology for determining evidence basis	20

1. Nutrition management in diabetes by dietitians-nutritionists

Dietitians-nutritionists play an integral role in the management of people with type 2 diabetes. The Dietitians Association Australian Dietetic Practice Guidelines¹ state that dietitians aim to:

- achieve and maintain optimal nutritional status for clients
- minimize the risk of short and long term complications and
- promote optimal patient wellbeing

Nutrition interventions include assessment, treatment, nutrition counselling and evaluation. The dietitian-nutritionist aims to provide interventions that:

- are outcome focused
- are consistent with evidence based approaches
- are based on the therapeutic aspects of diet for both the treatment and prevention of disease
- are in accordance with professional standards and best practice guidelines
- promote a self-management philosophy

Nutrition interventions should be integrated into the overall management of the client with type 2 diabetes. Nutrition counselling aims to achieve positive behavior changes, not just the transfer of knowledge.

2. Qualifications

2.1 Mandatory

- Eligible for membership with the Dietitians Association of Australia.

2.2 Highly desirable

- An accredited practicing dietitian

3. Standards of professional practice

3.1 Professional competence

Standards of professional practice are central to the role of the dietitian-nutritionist. They provide professionals with guidelines for the establishment and maintenance of effective services and promote consistent practice.

Standards of professional practice are also useful tools for the professional and the employer to determine professional responsibility, scope of practice, accountability, streamlining of services and planning the future directions of services.

The standards that dietitians-nutritionists use as a measure of their performance nationally are the Dietitians Association Australia Competency Based Standards for Entry-Level Dietitians².

Specific standards for dietitians-nutritionists in relation to diabetes services are currently under development by the Dietitians Association of Australia. The Code of Professional Conduct provides guidelines on legal responsibilities,

ethics, professional conduct and practice³. Both these documents are recommended for use by dietitians-nutritionists employed by Queensland Health.

4. Referral criteria

4.1 Criteria for referral to a dietitian-nutritionist

Instances when referral to a dietitian is appropriate for people with diabetes include:

- initial diagnosis of diabetes or impaired glucose tolerance
- recent change in management (eg medication change, introduction of insulin)
- HbA1c ³ persistently >8 per cent
- episodes of uncontrolled glycaemia
- dyslipidaemia
- obesity – BMI > 30kg/m²
- pregnancy / Intention to become pregnant
- gestational diabetes
- renal complications/nephropathy
- active comorbidities eg. recent MI, worsening CVD
- individuals requiring a therapeutic diet to manage any concurrent medical conditions
- sudden unexplained weight loss or weight gain
- people with recognised risk of developing diabetes⁴
- annual review of client if not seen within one year

As a member of a multidisciplinary team, the dietitian should also promote access to other specialised services and refer interprofessionally as appropriate.

Referral criteria enable patients with type 2 diabetes mellitus to be directed to individual

or group education sessions where group sessions are available. However, if a patient meets any of the criteria outlined below, it is recommended that they see the dietitian-nutritionist for an individual consultation. Patients referred for individual consultations can also access the group diabetes education program where the dietitian-nutritionist believes it is appropriate.

Individual consultation is recommended over group education if the patient:

- is non-English speaking – requiring an interpreter
- has impaired vision or hearing
- has episodes of uncontrolled glycaemia
- HbA1c ³ persistently > 8 per cent
- is obese – BMI >30Kg/m²
- has nephropathy
- has gestational diabetes
- exhibits behaviour not conducive to group learning eg. severe anxiety, active non compliance
- has type 2 diabetes, requires insulin and is experiencing difficulty in controlling BGL
- has active comorbidities eg. recent MI, worsening CVD
- requires a therapeutic diet to manage any concurrent medical conditions

NB: Additions to the criteria for individual consultations are at the professional discretion of the dietitian-nutritionist, subject to the clients' needs.

5. Nutrition practice guidelines for type 2 diabetes

Nutrition practice guidelines are used to guide diabetes management decisions according to

the physiological, nutritional and behavioural needs of the patient. They provide a framework to help the dietitian-nutritionist assess the needs of and intervene in the management of the person with type 2 diabetes. The guidelines allow nutrition intervention to be incorporated into the total management of diabetes for the client. Nutrition counselling aims to encourage positive behaviour changes, not simply to transfer knowledge.

The Nutrition Practice Guidelines emphasise the fact that the client is the focus of the system which provides care. The ultimate goal is to promote diabetes self-management through nutrition and healthy behaviour to achieve improved and sustained metabolic control. Recent evidence from the United Kingdom Prospective Diabetes Study⁵ highlights the importance of blood pressure control in the reduction of diabetes complications. This study includes a major dietary component that should be emphasised as much as glycaemic control.

This document aims to foster improved diabetes management outcomes by improving the consistency and effectiveness of nutrition counselling for people with type 2 diabetes.

5.1 Desired outcomes and objectives of lifestyle and nutrition interventions

(Adapted from the Dietitians Association Australia⁶)

To ensure the quality, consistency, and accountability of nutrition intervention and foster improved metabolic control for all clients with type 2 diabetes, it is recommended that nutrition intervention aims to achieve the following outcomes:

1. achieve and maintain optimal nutritional status
2. minimise the risk of short-term and long-term complications
3. promote optimal client well-being
4. contribute to optimal metabolic control:
 - blood glucose control
 - Fasting: 4 – 6.1mmol/L, Random 4 – 7.0mmol/L⁷
 - HbA1c: ≤ 7.0 per cent⁷
 - blood lipids
 - cholesterol ≤ 4.5 mmol/L⁸
 - HDL cholesterol³ ≥ 1.1 mmol/L⁸
 - LDL/HDL ratio: ≤ 4.5 ⁸
 - blood pressure: to contribute to the management of recommended blood pressure ($\leq 140/90$) with dietary management⁸
5. achieve and maintain body fat loss in people with a BMI³ ≥ 27 Kg/M² or waist > 102 cm (male) or > 88 cm (female)⁹
 - weight loss: 5-10 per cent⁹
 - waist circumference loss: 5-10 per cent⁹
6. achieve and maintain positive lifestyle behaviour changes
 - nutrition to maintain adequate dietary nutrition intake to meet the nutritional requirements of the individual
 - physical activity – daily physical activity should be an integral part of weight loss therapy, weight maintenance and glycaemic control. Initially, moderate levels of physical activity for 30-45 minutes 3-5 times a week should be encouraged. All adults should set a long term goal to accumulate at least 30 minutes or more of moderate-intensity physical activity on most, and preferable all, days of the week⁹.
 - psychosocial factors – the constant promotion of self-management of type 2 diabetes is necessary to foster the development of the client's behaviour change skills

As with any clinical measures, these outcomes will be reviewed as new information or recommendations become available.

5.2 Level of nutritional care

The level of nutritional care documented below is considered appropriate for all clients with type 2 diabetes or impaired glucose tolerance who are not suited to group education. (Refer to section 4 for referral criteria for individual consultation.) The length of the visit recommended includes time to document client notes.

5.3 Priority

The aim of any service is to provide timely dietetic management for all people with diabetes as they require it. It is important to note that priority of access to a dietitian-nutritionist will vary according to the individual's personal health and well being, psychosocial conditions and diabetes management changes.

Dietitians-nutritionists operate across the continuum of diabetes care. Whether the priority is health promotion, secondary prevention or treatment depends on the client's needs.

Dietary intervention is a priority for people with

type 2 diabetes who exhibit the symptoms listed below. The more of these conditions an individual has, the more urgently they need to be seen.

- HbA1c ³ persistently >8 per cent
- newly diagnosed diabetes or impaired glucose tolerance
- obesity – BMI > 30kg/m²
- episodes of 'unsafe' hypoglycaemia or hyperglycaemia
- active co-morbidities eg. recent MI or worsening CVD (unstable angina, dyslipidaemia (ongoing, not improving)
- nephropathy
- any patient with type 2 diabetes who requires insulin and is experiencing difficulty in controlling BGLs
- gestational diabetes

5.4 How to use these guidelines

The following tables detail all elements of a comprehensive nutrition assessment and intervention options. Using these tables, the dietitian-nutritionist:

- selects the assessment elements to be included at a consultation (eg. initial, review)
- evaluates assessment results and compares them to recommended outcomes in section 5.1

Table 1: Information on time, length and timing of individual nutrition consultations

Type of visit	Length of visit	Timing of visit	Evidence
initial visit	1hour	within 1-2 weeks of referral being made	IV
review visit	30 minutes	within 2 weeks of initial visit	IV
following reviews	15 – 30 minutes	within 2-4 weeks of previous review visit	IV
ongoing review visits	15 – 30 minutes	at least 1 review every 6 – 12 months	IV

NB: The review procedures are flexible according to the professional discretion of the dietitian-nutritionist and subject to the client's level of understanding, lifestyle modifications and the attainment of initial goals set.

- negotiates appropriate goals with the client
- implements appropriate intervention/education strategies (section 5.7) that are tailored to meet the individual needs of the client

These steps can be used for any type of consultation (eg. initial, review).

5.5 Flexible competencies

In some regions of Queensland and in some instances, access to a dietitian-nutritionist is not always possible, requiring other health professionals to provide elements of nutrition intervention. In this document, the assessments and interventions that other health professionals can provide are listed in the flexible competencies column.

It is the responsibility of those professionals to ensure that they have the ability to carry out assessments and interventions within their professional scope of practice and supply information that is accurate and consistent with current nutritional recommendations. It is the responsibility of the professional to refer to other health professionals if they do not have expertise in dealing with specific problems.

5.6 Evidence for assessments and intervention/education

These Nutrition Practice Guidelines take a systematic approach to nutrition interventions and are derived from evidence-based practices and expert professional consensus. Database searches were done to identify evidence based assessments and interventions. These searches provided only clinical measures used in nutrition assessment. However, it is widely recognised that a thorough assessment is considered essential for determining appropriate interventions. Information from expert groups and review

articles^{3,6,10} has been used to provide components of best practice where evidence-based information was not available for assessments and/or interventions and education.

Appendix 1 details evidence-based information supporting the nutrition assessments, interventions and education. Appendix 2 provides information on the quality of evidence rating scale used within this document.

5.7 Tables of necessary elements of nutrition assessments

(Adapted from ^{3,11,12})

Many of the assessments listed below will be repeated at review visits at the professional discretion of the dietitian-nutritionist. These guidelines do not intend to stipulate at which visit the assessments occur, although it is recommended that all assessments be carried out by the end of the intervention by a dietitian-nutritionist. The professional will take the needs of the individual client into account when deciding the order/priority of assessments.

5.7.1 Assessment of clinical data

All professionals listed below are competent to collect clinical data. It is then their professional responsibility to refer, if necessary, to the most appropriately trained health professional for more detailed assessments and appropriate interventions.

Dietitian-nutritionists are the professional group most skilled to effectively integrate information from all areas listed below to optimise the nutritional management of people with diabetes.

Table 2: Assessment of clinical data

Element	Flexible competences
a) Diabetes <ul style="list-style-type: none"> - history of diabetes - monitoring of diabetes control (blood, frequency and timing) - recent biochemistry – HbA1c, serum lipids, triglycerides - occurrence and frequency of short-term complications eg. hypoglycaemia and hyperglycaemia - presence of complications of diabetes eg. neuropathy, nephropathy, retinopathy and ongoing management or treatment - medications for diabetes – name, dosage, frequency and method of administration and any changes - compliance with medication 	Dietitian-nutritionist Diabetes educator, GP, RN
b) Other medical conditions <ul style="list-style-type: none"> - medical history - concurrent conditions eg. hypertension, hyperlipidemia - medications – name, dosage, frequency and method of administration - compliance with medications - vitamin or herbal supplements - alcohol consumption - smoking 	Diabetes educator, Dietitian-nutritionist GP, RN, Podiatrist
c) Family history <ul style="list-style-type: none"> - next of kin - illnesses and causes of death within the family - pregnancy/birthweights 	Dietitian-nutritionist GP, Diabetes educator, GP, RN

5.8 Tables of necessary elements of nutrition assessment and interventions/education

(Adapted from ^{3,11,12})

The tables on the following pages identify elements of a thorough nutrition assessment (anthropometric, psychosocial and physical activity) coupled with various stages of appropriate nutrition intervention.

5.8.1 Nutrition and anthropometric assessment and nutrition intervention

Table 3: Nutrition and anthropometric assessment and nutrition interventions

Nutrition and anthropometric assessment		Elements of nutrition intervention	
Element	Flexible competencies	Topics	Flexible competencies
<p>a) Nutritional information</p> <ul style="list-style-type: none"> - eating habits/meal patterns - dietary practices - food preferences and food skills - body weight history and other relevant nutritional indicators - appetite <p>From a diet history (use interview and/or food records), assess:</p> <ul style="list-style-type: none"> - dietary adequacy of energy and macronutrient intake - adequacy of micronutrient intake - other dietary considerations - supplementation 	<p>Dietitian-nutritionist, Diabetes educator, GP, Indigenous health worker, Pharmacist, RN</p> <p>Dietitian-nutritionist</p>	<p>Basic survival information</p> <ul style="list-style-type: none"> - healthy eating pyramid - signs, symptoms and treatment of hypoglycaemia if taking an hypoglycaemic agent or insulin <p>- plan for continuing care</p> <p>- basic food/meal planning information based on nutrition/ dietary assessment</p> <p>Establish dietary goals and objectives based on:</p> <ul style="list-style-type: none"> - kilojoule intake vs requirement - proportion macronutrient intake - adequacy of macronutrient intake - type and distribution of carbohydrate (including glycaemic index and quantity) - type of dietary fat - blood glucose and other biochemical targets - concurrent medical conditions requiring nutrition intervention, including diabetes complications (from the assessment of clinical data) <p>Discuss with client</p> <ul style="list-style-type: none"> - realistic dietary goals - dietary objectives - devise a management plan <p>Ongoing self-management information*</p> <ul style="list-style-type: none"> - sources of macro- and micronutrients - food labelling - glycaemic index - fat types <ul style="list-style-type: none"> - low fat food alternatives - low fat cooking methods - fibre - recipe modification 	<p>Dietitian-nutritionist, Diabetes educator, Indigenous health worker, GP, Pharmacist, RN</p> <p>Dietitian-nutritionist,</p> <p>Dietitian-nutritionist,</p> <p>Dietitian-nutritionist</p> <p>Dietitian-nutritionist</p>

b) Anthropometry - weight, height, body mass index - waist measurements (waist/hip ratio) - weight history - weight gain during pregnancy	Dietitian-nutritionist, Diabetes educator, GP	Discuss: - modification of energy intake to achieve appropriate body weight and maintain micronutrient adequacy	Dietitian-nutritionist
c) Assessment of client knowledge of diabetes and relationship to diabetes - reassess at each review visit	Dietitian-nutritionist		

*These topics should be selected based on the client’s lifestyle, level of nutrition knowledge and culinary experience.

5.8.2 Psychosocial assessment and intervention

Table 4: Psychosocial assessment and intervention

Psychosocial assessment		Elements of psychosocial intervention	
Element	Flexible competencies	Topics	Flexible competencies
a) Living situation - cooking facilities - shopping arrangements/food supply	Dietitian-nutritionist, Diabetes educator, GP, Health psychologist, Indigenous health worker, Pharmacist, RN, Social worker	Short term goal setting - identify short term goals with the client that are specific and achievable - identify barriers and enablers to achieving goals - determine willingness and ability to make further changes - reinforce long term diabetes management goals - reset short-term behavioural goals as appropriate - continue to assess achievement of short term behavioural goals - refer to a health psychologist if goals not achieved Long term goal setting - identify long term management goals of client and health care team - review and reinforce long term diabetes management goals - refer to a health psychologist if goals not achieved	Dietitian-nutritionist, Diabetes educator, GP, Health psychologist, RN, Social worker
b) Cultural and religious background and issues			
c) Financial considerations			
d) Personal considerations - social support networks - personal motivation - personal goals - attitudes towards nutrition and diabetes issues - readiness to change behaviours (if necessary) - assess achievement of short term goals - determine willingness and ability to make further changes			

8.5.3 Physical activity assessment and intervention

Table 5: Assessment and interventions for physical activity

Assessment of physical activity		Physical activity interventions	
Element	Flexible competencies	Topics	Flexible competencies
a) History - activity types - duration and frequency of activity	Dietitian-nutritionist, Diabetes educator, Exercise physiologist, GP, Indigenous health worker, Pharmacist, Physiotherapist, Podiatrist		
b) Evaluation of physical status and limitations	Exercise physiologist, GP, Physiotherapist, Podiatrist	<p>Diabetes complications detected</p> <ul style="list-style-type: none"> - refer for detailed assessment of systems if appropriate <p>Limitations to physical activity</p> <p>Refer for:</p> <ul style="list-style-type: none"> - cardiovascular disease or at risk of in relation to physical activity - peripheral arterial disease (claudication) - retinopathy (risk of haemorrhage) - nephropathy - neuropathy (autonomic, peripheral) <p>Recommend activity based on assessment of systems</p>	<p>Dietitian-nutritionist, Diabetes educator, Exercise physiologist, GP, Pharmacist, Physiotherapist, Podiatrist</p> <p>Medical specialist or other health professional as appropriate</p>
c) Evaluate need for exercise: - glycaemic control - prevention of cardiovascular disease - hypertension - fibrinolysis - obesity - prevention of type 2 diabetes	Dietitian-nutritionist, Diabetes educator, Exercise physiologist, GP, Indigenous health worker,	<p>Pre-activity information</p> <p>Discuss:</p> <ul style="list-style-type: none"> - blood glucose monitoring - metabolic control - food intake (prior to activity and during activity) - hydration - recognition of hypoglycaemic symptoms 	Dietitian-nutritionist, Diabetes educator, Exercise physiologist, GP, Podiatrist

	Pharmacist, Physiotherapist, Podiatrist		
d) Motivation level	Dietitian-nutritionist, Diabetes educator, Exercise physiologist, GP, Health psychologist,	Short term goal setting and long term goal setting as per Table 4 (Psychosocial Interventions) Include: - identify barriers and enablers to physical exercise	Dietitian-nutritionist, Diabetes educator, Health psychologist, GP, RN, Social worker
e) Knowledge - benefits - risks - optimum individual levels - management	Indigenous health worker, Pharmacist, Physiotherapist, Podiatrist, Social worker	Use appropriate interventions based on assessment results.	

6. References

- Dietitian's Association of Australia and Diabetes Australia. (1993). *Diabetes Management – A Dietitian's Guide*, Dietitian's Association of Australia, Canberra.
- Dietitian's Association Australia. (1999). Competency Based Standards for Entry-level Dietitians. Dietitian's Association Australia.
- Dietitians Association Australia. (1999). Code of Professional Conduct. Dietitian's Association Australia.
- Diabetes Australia. (1999). Community Awareness Diabetes Strategy.
- UK Prospective Diabetes Study (UKPDS) Group. (1998). Tight blood pressure control and the risk of macrovascular and microvascular complications in type 2 diabetes. UKPDS 38. *British Medical Journal* 317:713-20.
- Dietitian's Association of Australia. (1995). Nutrition Practice Guidelines for Diabetes Mellitus. Dietitians Association Australia.
- Diabetes Australia and The Royal Australian College of General Practitioners. (1998). *Diabetes Management in General Practice – 5th edition*.
- National Heart Foundation. (1999). Guide to risk reduction for patients with/or 'At Risk' of cardiovascular disease.
- Expert Panel on the Identification, Evaluation and Treatment of Overweight in Adults. (1998). Clinical Guidelines on the Identification, Evaluation and Treatment of Overweight and Obesity in Adults: Executive Summary. *American Journal of Clinical Nutrition* 68:899-917.
- American Diabetes Association. (1998). *Nutrition Recommendations and Principles for People with Diabetes Mellitus*, Diabetes Care, Vol 21, Supplement 1, S 32 – S 35.
- Illawarra Area Health Service. (1999). Dietetic Practice Guidelines. Diabetes Mellitus – Type 1, Type 2 and Gestational Diabetes. Draft 2.

12. Monk A et. al. (1995). *Practice Guidelines for Medical Nutrition Therapy provided by Dietitians for Persons with Non-Insulin Dependent Diabetes*, Journal of the American Dietetic Association 1995; 95: 999 – 1006.
13. NHS Centre for Reviews and Dissemination. (1997). A Review of: Glenny AM, O'Meara S. (1997). Systematic review of interventions in the treatment and prevention of obesity. *CRD Report*, 10:1-149 In: University of York, Dare Search.
14. Brand MB, Mulrow CD, Chiquette E, Angel L, Cornell J, Summerbell C, Anagnostelis B, Grimm R Jr. (1998). Weight-reduction through dieting for control of hypertension in adults (Cochrane Review). In: The Cochrane Library, 4. Oxford: Update Software.
15. Simon JA. (1998). A Mediterranean-type diet reduced mortality in patients with a first MI. Abstract and commentary for: de Lorgeril M, Salen P, Martin JL, et. Al. In: ACP Journal Club 129:61.
16. Yarnell SR. (1994). A Mediterranean-style Diet Reduced Mortality after Myocardial Infarction. Abstract and Commetry for: de Lorgeril M, Renaud S, Mamelle N, et. al. In: ACP Journal Club 121:59.
17. Summerbell CD, Glasziou P. (1998). The long-term effect of the advice on low-fat diets (Cochrane Protocol – at present). In: The Cochrane Library, 4. Oxford: Update Software.
18. Taylor, WC. (1996). Review: Cholesterol lowering reduces mortality in high-risk, middle-aged men. Abstract and Commentary for: American College of Physicians. ACP Journal Club 125:13.
19. Glasziou P. (1993). Cholesterol Lowering and Mortality – A Meta-analysis. Abstract and commentary for: Davey Smith G, Song F, Sheldon TA. In: ACP Journal Club, 119:65.
20. Pugh JA. (1995). Drugs plus diet was better than diet alone for newly diagnosed diabetes. Abstract and Commentary for: United Kingdom Prospective Diabetes Study Group. In: ACP Journal Club. 123:5.
21. Richter B. (1997). Meta-analysis: Dietary strategies alone reduce weight best in NIDDM. Abstract and Commentary for: Brown SA, Upchurch S, Anding R, et. al. In: Evidence-Based Medicine. 2:23.
22. National Health and Medical Research Council of Australia Quality of Care and Health Outcomes Committee: Guidelines for the development of clinical practice guidelines. Canberra: Australian Government Publishing Service, 1995.

Appendix 1

Risk factors

Obesity

It has been shown (level 1 evidence) that the use of diet, behaviour management and exercise are all effective in the treatment of adults with obesity, especially if two or more interventions are used in combination¹³.

Weight reducing diets for overweight hypertensive adults have been reviewed and results indicate they can affect a weight loss in the range of 3 – 9 per cent (level 1 evidence)¹⁴. As many people with type 2 diabetes are overweight and may also concomitantly have hypertension, the management of people with diabetes in this group needs to involve the use of diet modification ideally coupled with an activity program and/or behaviour change interventions.

Low fat diets

Reducing the saturated fat intake for a person with type 2 diabetes has been used in nutrition intervention/education for many years¹⁰. Several randomised control trials^{14,15} have shown that reducing saturated fat and increasing omega – 6 polyunsaturated fat and the use of monounsaturated fat and omega-3 fatty acids have had beneficial effects in patients who have suffered a myocardial infarction (level 2 evidence). A Mediterranean style diet not only involves a change in fat type used but a shift to increased consumption of fruit, vegetables, antioxidants and fibre, which may have also contributed to the favourable results seen in the two studies.

Many other trials¹⁷ have also noted that by attempting to reduce the risk factors of coronary heart disease using dietary interventions, low fat

diets resulted in sustainable weight loss. The Cochrane Database of Systematic Reviews¹⁷ is currently investigating the long-term effects of low fat diets.

As diabetes is a known risk factor for cardiovascular disease, the use of this type of diet is recommended for people with type 2 diabetes.

Cholesterol

Randomised control trials¹⁸ and meta-analyses¹⁹ have determined that cholesterol lowering treatment is effective for patients with increased risk of cardiovascular disease but not in patients with medium or low risk (level 1 evidence).

However, results from one publication¹⁹ found that diet intervention alone did not show any reduction in mortality. As diabetes is a known risk factor for cardiovascular disease, the lowering of cholesterol levels in people who are at risk is recommended for people with type 2 diabetes and should be managed individually, with the use of medication where appropriate.

Diabetes management

General diet strategies

Strategies to improve the diet of people with type 2 diabetes to improve weight loss and metabolic control have been used for many years¹⁰. Recently, randomised control trials and meta-analyses^{20,21} (level 1 evidence) have investigated this issue with varying results.

Richter (1997)²¹ suggests that diet strategies alone are the most effective technique for reducing weight and improving metabolic control, while the combination of diet, exercise and behaviour therapies improved HbA1c levels.

A randomised control trial²⁰ found that diet and medication together lowered HbA1c levels

more than the use of dietary strategies alone. This suggests that the interventions used should be individualised to the client and adapted as necessary, depending on results of follow-up clinical investigations.

Specific nutrition prescription

Nutrition intervention/education should be tailored to the specific needs of the patient, following a thorough assessment and comparing clinical data to recommended target levels. Interventions should be modified as necessary to ensure that realistic goals and behaviour changes are achieved. Therapy changes should involve consultation with other health professionals and the introduction or modification of medications and other therapies as necessary.

Appendix 2

Methodology for determining evidence basis

Any clinical practice guidelines developed in the present environment are expected to document assessment and management strategies supported by evidence showing that the listed practices produce positive outcomes.

The searches were focused but not confined to the period of 1990-1999. Systematic reviews and meta-analyses were the primary sources of the searches including Cochrane Database, The University of York – NHS centre for reviews and dissemination and the Evidence Based Medicine reviews Database.

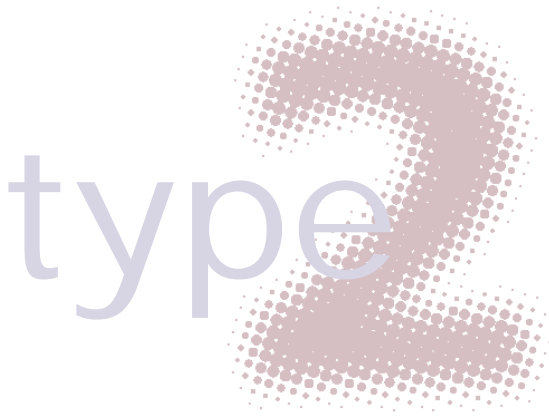
Medline searches were also used to obtain primary research papers, guidelines, consensus statements and reviews when the systematic

reviews or meta-analyses discussed above did not exist for specific topics.

The NHMRC Quality of Evidence rating scale (1995)²² has been used in judging the quality of evidence where no evidence rating was available.

Level of evidence

- I Evidence obtained from a systematic review of randomised controlled trials, providing that it includes at least two properly designed trials of moderate size or a systematic review that does not include trials which it could be reasonably argued could not effect the findings of the review.
- II Evidence obtained from a least one properly designed randomised controlled trial
- III Evidence obtained from a well designed controlled trial without randomisation, from well designed cohort or case-controlled analytic studies, preferably from more than one centre or research group or from multiple time series with or without intervention
- IV Opinions of respected authorities, based on clinical experience, descriptive studies or reports of expert committees.



Best practice guidelines for management of type 2 diabetes

Dietetic

These guidelines are intended as a general guide only and are not intended to be prescriptive. The guidelines should not be considered all-inclusive nor should they be considered exclusive of other methods of service delivery. Health professionals must exercise independent judgement as to what is appropriate for individual patients or groups of patients under particular circumstances.

Queensland Health accepts no responsibility for any personal injury, loss or claim however sustained or caused as a result of any person using or relying on the information in these guidelines. Any duty owing remains the responsibility of those health professionals who provide relevant services."

Queensland Health does not endorse any health professional, or the services they provide, merely because they use the guidelines.

© Queensland Health and the Brisbane Inner South Division of General Practice.

Copyright protects this publication. It may be reproduced in whole or part for study or training purposes subject to the inclusion of an acknowledgement of the source, except if it is for commercial purposes or where the material is being modified. Permission to reproduce for commercial purposes or to modify the material should be sought from the Chairperson of the Queensland Health Diabetes Allied Health Task Group.