

Dietary Treatment in the Management of Diabetes

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Overview

- Introduction
- Dietary Treatment & Type 1 Diabetes
- Dietary Treatment & Type 2 Diabetes
- Role of the Dietitian

Introduction

- The prevalence rate for diabetes in the UK is 6%, that is 3.2 million people (Diabetes UK 2014)
- In 2013 the prevalence of diabetes for adults (17+) in the Barnsley CCG area is 6.8%, that is 13,692 people (Public Health England, 2014)
- In 2013 the prevalence of obesity for adults (16+) in the Barnsley CCG area is 15.0%, that is 30,764 people (Public Health England, 2014)

- 60-90% of adults newly diagnosed with diabetes are overweight or obese (Anderson et. al. 2003)
- “People with diabetes receive **personalised** advice on nutrition and physical activity” (NICE, 2011)

Dietary management & lifestyle change is the cornerstone of treatment.

Case Example

- 42 year old man, recent MI, hypertension.
- Lives alone and works as a lorry driver.
- Newly diagnosed with Type 2 diabetes via RBG 12.2mmol/l & HbA_{1c} 50mmol/mol.
- Ht 1.78m, Wt 112kg, BMI = 35.3 Kg/m² Obese (Class 3).

Case Example

- Medications: Simvastatin 20mg OD.
- Total cholesterol 5.5mmol/l, HDL 0.98mmol/l, LDL 2.80mmol/l, Triglycerides 2.10mmol/l.
- Blood pressure 141/84 mm/Hg.
- Additional information – Smokes 10-20/day, Physical activity minimal.

DAILY

2/3 pint of whole milk & 1oz butter

Breakfast

4 slices white bread, toasted with butter and marmalade
Tea, milk + 1tsp sugar

Mid-morning

Tea milk + 1 tsp sugar & 4 chocolate coated biscuits

Lunch

4 slices white bread with butter and either cheddar cheese,
tuna (sunflower oil), or “meat” filling
Cake and a banana

Mid-afternoon

Coffee, milk + 2tsp sugar & 4 plain biscuits

Tea

8oz roast meat (chicken or red meat) or fish (usually fried) or
meat pie
8 egg size potatoes (mashed or roasted)
Vegetables – peas or carrots
Tinned fruit in syrup and custard or tinned milk pudding
or fruit pie and cream

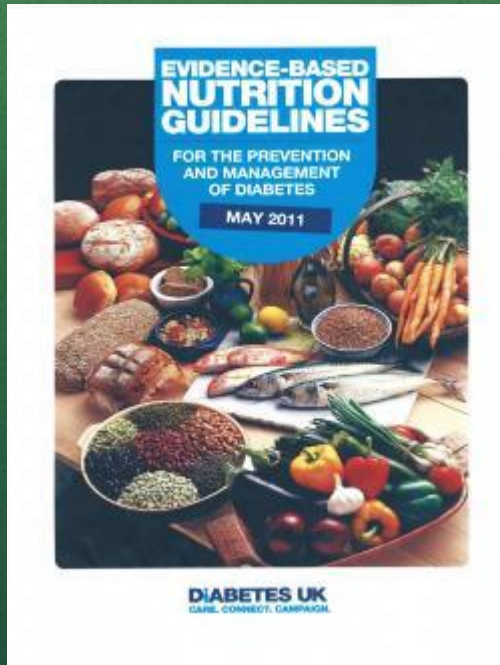
Supper

4 pints beer and a packet of crisps (2/7)
or 1 cup Ovaltine and diabetic chocolate

Moving forward.....

- Lifestyle change – what are your thoughts?
- What are your top 2 dietary priorities?
- Is a sugar free diet recommended?

Evidence Based Practice



- Nutrition management & models of education
- Prevention of Type 2 diabetes in high risk groups
- Glycaemic control – Type 1
- Glycaemic control & Weight Management – Type 2
- Cardiovascular disease
- Nutrition recommendations for managing DM related complications

<https://www.diabetes.org.uk/Documents/Reports/nutritional-guidelines-2013-amendment-0413.pdf>

Dietary review

- **Glycaemic control:** Carbohydrate intake
Alcohol
Weight management
Physical activity
- **Cardiovascular health:** Fat intake
Salt intake / DASH
Alcohol
Physical activity
Smoking cessation
- Nutritional balance

Glycaemic control

DAILY

2/3 pint of whole **milk** & 1oz butter

Breakfast

4 slices white bread, toasted with butter and **marmalade**
Tea, **milk + 1tsp sugar**

Mid-morning

Tea **milk + 1 tsp sugar** & **4 chocolate coated biscuits**

Lunch

4 slices white bread with butter and either cheddar cheese,
tuna (sunflower oil), or “meat” filling
Cake and a **banana**

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Coffee, **milk + 2tsp sugar** & **4 plain biscuits**

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Tinned **fruit in syrup** and **custard** or **tinned milk pudding**
or **fruit pie** and cream

Supper

4 pints **beer** and a packet of **crisps** (2/7)
or 1 cup **milky Ovaltine** and **diabetic chocolate**

Carbohydrate

Intake

- 475 – 540g carbohydrate per day (from diet history)
- Foods choices from medium to high Glycaemic Index (GI) sources

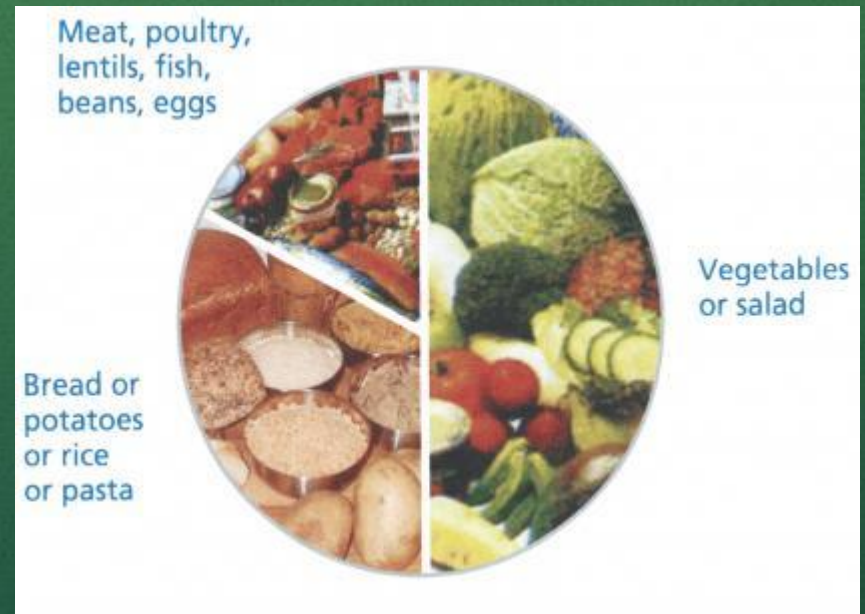
Reference

- 130 - 260g per day aim to reduce daily intake through negotiation
- Use low – medium GI food sources in planning meals to help stabilise blood glucose levels and promote satiety
- Promote physical activity to help reduce blood glucose levels and improve insulin sensitivity

Weight Loss

- Ht 1.78m, Wt 112kg, BMI = 35.3 Kg/m² Obese (Class 3)
- SIGN (2010) recommends an initial weight loss of 5 -10% (5.6 to 11.2kg)
- Weight loss leads to improved insulin sensitivity
- Reducing weight improves fasting glucose, improves blood pressure, improves serum lipid profile and a reduction in mortality (SIGN, 2010)

- Reduce calorie intake by 600kcal per day (NICE 2014)
- Consider fat and alcohol intake levels
- Review portion sizes
- Review plate size (26cm)
- Review eating behaviour (speed)
- 150 minutes each week of moderate to vigorous-intensity physical activity. Muscle-strengthening activity should also be included twice a week (Diabetes UK)



The background features a stylized landscape with green, triangular mountain peaks at the top and bottom. The central area is a gradient of yellow and orange, with a rough, torn-paper-like edge separating the top and bottom green sections.

Cardiovascular health

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Fat sources

- Total fat intake to remain below 30% of total intake (NICE, 2014)
- Saturated fats are still linked to CVD, recommendation is less than 7% of energy intake (NICE, 2014)
- Triglycerides – review carbohydrate intake and alcohol consumption
- Oily fish consumption is recommended two portions a week (Diabetes UK 2011). Whilst omega-3 fatty acid supplements are not recommended (NICE, 2015)

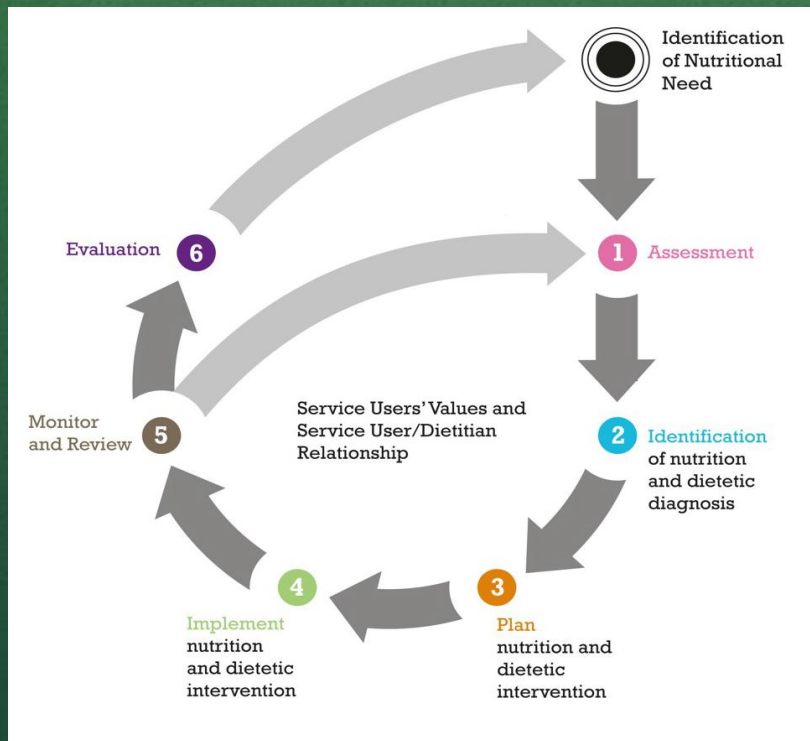
Blood Pressure

- DASH recommends wholegrain carbohydrates, fruit and vegetables and low fat dairy sources (Diabetes UK, 2011)
- Salt intake reduced to no more than 5-6g salt per day (Diabetes UK, 2011)
- Weight reduction and physical activity improves blood pressure as well as lipid profile (SIGN 2010)

The background features a stylized landscape. The top and bottom sections consist of dark green, overlapping mountain peaks. The middle section is a bright yellow field with a fine, textured pattern. The title 'Role of the Dietitian' is centered in the yellow field.

Role of the Dietitian

Process of Nutrition & Dietetic Practice



- Dietary Assessment
- Sharing dietary information
- Negotiating dietary goals using behaviour change
- Agreed care plan
- Education
- Review
- Time

British Dietetic Association (2012)

Dietetic Services for Diabetes

- Community Nutrition & Dietetic Service (SWYT) – Community Diabetes Team, Cudworth Centre, Carlton Street, Cudworth. 01226 438817, Fax 01226 438888.
- Nutrition & Dietetic Services, Specialist Dietitian for Diabetes, (BHNFT). 01226 431576.
- These are separate services (Primary & Secondary) but underpinned by shared literature and patient centered approach.

Contact details

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References

- Model and Process for Nutrition (British Dietetic Association, 2012)
- National Service Framework for Diabetes (DoH,2001)
- Care Planning in Diabetes (DoH and Diabetes UK, 2006)
- Diabetes Statistics (Diabetes UK, 2014)
- Evidence based nutritional guidelines for the prevention and management of diabetes (Diabetes UK, 2011)
- QOF Data, Barnsley CCG (NHS England, 2014)

References

- Omega-3 fatty acid supplements (NICE, 2015)
- Lipid modification: cardiovascular risk assessment and the modification of blood lipids for the primary and secondary prevention of cardiovascular disease (NICE, 2014)
- Obesity: identification, assessment and management of overweight and obesity in children, young people and adults (NICE, 2014)
- Diabetes in adults quality standard (NICE, 2011)
- Type 2 Diabetes (NICE, 2009)
- Type 1 Diabetes (NICE, 2004)
- Management of Obesity (SIGN, 2010)
- Changing Eating & Exercise Behaviour (Hunt & Hillsdon, 1996)