

Module A

Principles of Diabetes

3 Diet and Exercise

Learning aims

Understand the importance of all people with diabetes having a good nutritional status

Have an understanding of what nutritional requirements are necessary for those with diabetes and what are the appropriate foods to serve

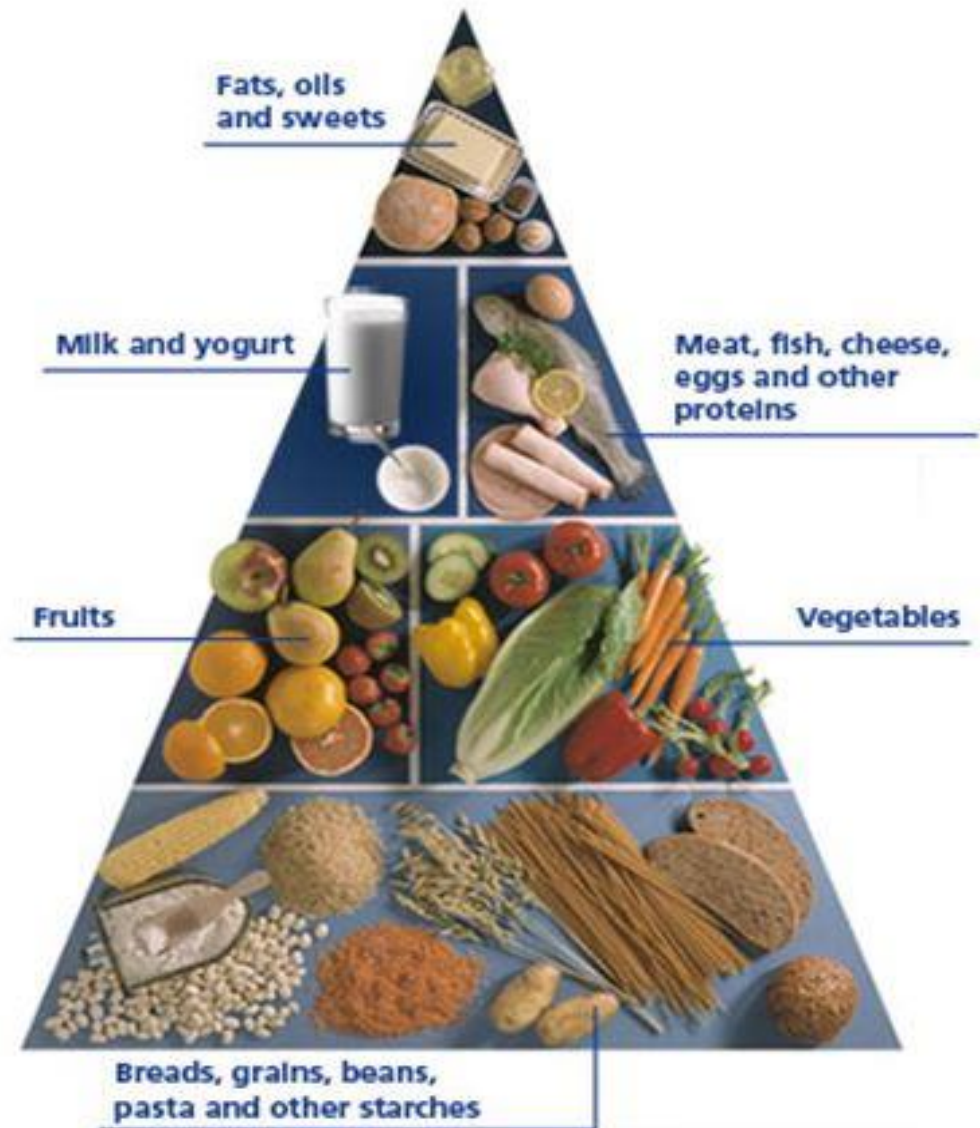
Determining body composition and measuring waist circumference and understanding the readings in relation to risk of disease

Nutrition and diabetes

- ① In a care home, food intake of residents is one of the key issues surrounding diabetes management and should be monitored by staff.
- ① Where possible, residents with diabetes should learn at least the basics of nutrition and health.
- ① Poor nutrition can lead to difficulty maintaining stable blood sugar (glucose) levels (BGLs)
- ① An increased risk of low or high BGL can carry a risk of further complications.

Nutrition and diabetes

- ① A food pyramid arranges foods with a similar range of nutrients on the same shelf.
- ① Foods near to the bottom should be eaten often and in reasonable quantities.
- ① Foods near to the top should be eaten less frequently and in smaller amounts.



Recent Nutrition Guidelines (2018)

These emphasise:

- ① An individualised plan for all residents with diabetes
- ① A greater intake of certain foods such as vegetables, fruits, wholegrains, fish, nuts and pulses
- ① Eating less red and processed meat, less refined sugars and less sugar-sweetened beverages

Specific types of diets available

- ① No specific diet is superior to others for managing diabetes. Types include:
- ① A **Mediterranean diet** in which involves a high proportion of vegetables, fruits, legumes, nuts, beans, cereals, grains fish, and unsaturated fats such as olive oil
- ① A **low carbohydrate diet** means that you restrict carbohydrate intake to less than 130g/day depending on several factors such as current body weight.
- ① Remember that: a slice of bread or apple is about 15-20g carbs, a large jacket potato or litre of orange juice is up to 90g.

Nutrition and diabetes - 1

Key points to remember when preparing or serving meals include:

- ① Discuss an individual's needs with your care home manager, or chef or community dietician
- ① Aim to serve meals which are low in fat, sugar and salt.
- ① Limit saturated fat by choosing lean meat, low-fat products and avoiding pastries, cakes, biscuits and pre-packaged foods.
- ① Foods containing high amounts of sugar, such as lollies, soft drinks, fruit juice, cordials, chocolates and biscuits should be consumed sparingly.

Nutrition and diabetes - 2

- ① Aim for foods which are high in fibre (whole grains, beans and lentils) with plenty of vegetables and fruit.
- ① Alcohol has no nutritional value and is high in calories – consumption should be kept to a minimum.
- ① Ensure small, regular meals throughout the day and include small amounts of carbohydrates with each meal.
- ① Remember that every resident has to have the opportunity to have a 'treat' every so often with their meals but this should be discussed with the resident and care staff.

Nutrition and diabetes - 3

- © Always consider the nutritional value of foods consumed.
- © Remember that in some residents who are frail or have problems with eating, further weight loss may not be desirable.



- © Also remember that if a resident experiences a loss of appetite or their blood glucose (sugar) control is inadequate after meals, please inform your manager and seek a GP referral

Risk factors and keeping blood glucose controlled -

1

- ① Maintaining a well-balanced diet is not only important in the management of blood glucose level (BGL) but also assists in the maintenance of body weight and waist circumference (WC).



Risk factors and keeping blood glucose controlled -2

- ① Although there are reports of under-nourished residents, many residents with diabetes may be overweight
- ① Increased abdominal fat is strongly linked with an increased risk of diabetes and needs to be monitored closely.
- ① Food consumption, nutritional intake and physical activity are all key factors in managing or preventing diabetes.

Risk factors and keeping blood glucose controlled -3

- ① BMI (body mass index) is a calculation used to assess body weight and the risk of disease. BMI is calculated by dividing body weight (kg) by height in metres squared (M^2).
- ① Although BMI is important to determine overall body mass, waist circumference (WC) is more specific and is the preferred test to determine the risk of diabetes.

Risk factors and keeping blood glucose controlled - 4

- ① The greater the WC, the more deep fat surrounds organs within the abdomen. This leads to insulin resistance and makes diabetic management more difficult.
- ① WC should be measured in centimetres around the abdomen, just below the belly button. The subject should be standing.
- ① People with diabetes should have this measurement taken every 3-6 months.

BMI and waist circumference values

- © The table below can be used as a guide to determine BMI & WC measurements in relation to risk of disease.

WEIGHT CLASSIFICATION	BMI (KG.M-2)	WAIST CIRCUMFERENCE & BODY WEIGHT RELATIVE TO RISK OF DISEASE	
		Men <102cm Women <88cm	Men >102cm Women >88cm
UNDER WEIGHT	<18.5	-	-
NORMAL RANGE	18.5 - 24.9	-	-
OVERWEIGHT	25 – 29.9	Increased	High
OBESITY, CLASS			
I	30 – 34.9	High	Very high
II	35 – 39.9	Very high	Very high
III	>40	Extremely high	Extremely high

Risk factors and keeping blood glucose controlled -5

- ① A resident is likely to be at risk of cardiovascular and metabolic diseases, and a change in lifestyle might be beneficial.
- ① With the help of the GP, or a community nurse and community physiotherapist, evaluate any risk factors for adverse health, and devise a plan to identify suitable lifestyle changes.
- ① With suitable changes in lifestyle, it may be possible to reduce or even avoid some medications.

Exercise in the Care Home - A

- ◎ Many residents will not be able to participate effectively in an exercise session because of frailty, a previous stroke, or acute illness.
- ◎ For those unable to participate, every effort should be made to concentrate on mobilisation exercises (improve mobility) and stretching the limbs (reduce stiffness).
- ◎ Seek advice on the range of possible exercises for residents from your GP or community nurse or physiotherapist.
- ◎ For those who can participate, exercise interventions should include both a resistance and endurance component for maximum benefit.

Exercise in the Care Home - B

- ① Regular exercise may improve blood sugar (glucose) control, may lessen some cardiovascular risk factors, improve well-being, and prevent loss of muscle mass
- ① It is important to motivate residents to participate by making them aware of the benefits and range of exercise options
- ① Older adults with type 2 diabetes living in a care home should ask for advice to undertake exercise on a daily basis if possible. As a minimum, they should attempt to:
 - Have 2-3 short breaks (of up to 5-10 mins), two to three times a day to break up sedentary time
 - Engage in as many group activities within the home as possible including dancing classes
 - Walk to the dining room for meals

Learning points

LP

To have understood the benefits are of employing guidance on nutrition to manage their residents with diabetes.

LP

Awareness of the consequences of poor nutrition.

LP

To accurately measure BMI and WC and understand the results in relation to the risk of disease.

LP

To understand that other types of treatments that are offered to people with diabetes such as bariatric surgery or very low carbohydrate diets are not in general applicable to residents with diabetes

Further reading

- © Diabetes UK. Evidence-based nutrition guidelines for the prevention and management of diabetes. 2018

Available at:

https://diabetes-resources-production.s3.eu-west-1.amazonaws.com/resources-s3/2018-03/1373_Nutrition%20guidelines_0.pdf

- © Physical Activity Guidelines for Older Adults. NHS, October 2019. Available at:

<https://www.nhs.uk/live-well/exercise/physical-activity-guidelines-older-adults>

- © [Why is my waist size important?](#) September 2019
(control/click to follow link)

Questions

Q1. Which of the following are recommended for people with type 2 diabetes:

- A. Eat more beans and pulses
- B. Reduce salt in your diet to less than 6g/day
- C. Drink 2 glasses of orange juice every day
- D. Eat products labelled as 'diabetic' foods

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Questions

Q2. In determining the risk of developing type 2 diabetes, which of the following are true:

- A. BMI is more specific than waist circumference
- B. Measuring waist circumference should be carried out with the subject seated
- C. The greater the waist circumference the higher the risk of insulin resistance
- D. An increase in physical activity is beneficial

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Questions

Q3. It is important to ensure nutrition is monitored. Sugar consumption should be monitored because:

- A. People with diabetes should avoid consuming any sugar, they should aim to cut it out of their diet completely
- B. To have better management of BGL, reducing daily spikes and lows
- C. To avoid body weight increases
- D. B and C
- E. All of the above

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Questions

Q4. What should be the primary management strategies for people with type 2 diabetes:
(Select two)

- A. Carbohydrate intake management
- B. Fat intake management
- C. Increase physical activity
- D. Weight management

Questions

Q4. What should be the primary management strategies for type 2 diabetes: (Select two)

- A. Carbohydrate intake management
- B. Fat intake management
- C. **Increase physical activity**
- D. **Weight management**

Learning completed