

## DIET AND ALZHEIMER'S DISEASE

**At no time has there been such a great focus on dementia. Registered Dietitians can contribute to this important area with not just advice on nutrition or practical involvement in the management of the condition, but also in being aware of research and providing appropriate and reasoned advice to deflect the worry and concern that newspaper headlines can cause.**



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Dementia hit the headlines in December last year with 'G8 will develop dementia cure or treatment by 2025'. There are 44 million people throughout the world with dementia and that number is expected to increase to 135 million by 2050. The UK has pledged to increase the research funding on the condition to £132 million by 2025 (1).

Previously in 2012, the Prime Minister promised to "push to tackle the national crisis of dementia". This was quoted to affect 800,000 people and to cost the country £32 billion. The Prime Minister also said he wanted to see the UK become a world leader in the field of dementia research (2). In the USA President Obama honed in on Alzheimer's disease and set an ambitious goal for effective treatments in the next decade. While his plans were considered unrealistic by some, they did draw great attention to what is a neglected disease (3).

Alzheimer's disease is the most common cause of dementia and affects 62 percent of those with dementia (4).

The condition is named after Dr Alois Alzheimer, in 1906, who noticed changes in the brain tissue of a woman who had died of what was considered at the time an unusual mental illness. The woman had what are today known as symptoms of dementia and which included memory loss, language problems and unpredictable behaviour. After her death, Dr Alois examined her brain

and found in the brain tissue many unusual and abnormal clumps (now called cortical amyloid plaques) and tangled bundles of fibres (now called neurofibrillary tangles). These plaques and tangles in the brain are two of the main features of Alzheimer's disease. He also found a loss of connections between nerve cells (neurons) in the brain (5).

Today Alzheimer's disease is recognised as an irreversible, progressive brain disease that slowly destroys memory and the ability to think as brain cells are lost. As the condition progresses even the ability to carry out the simplest activities departs.

In most people with Alzheimer's disease the symptoms first appear after the age of 60, but it can occur in younger people. After the age of 95, a third of people have dementia (6).

### CARE QUALITY COMMISSION

Not surprisingly, as in the later stages of the condition, many people are unable to care for themselves and, therefore, it is found that 80 percent of people living in care homes have some form of dementia or severe memory problems.

The Care Quality Commission (CQC) is the independent regulator of all health and social care services in England. As such, the Care Quality Commission inspects care homes to ensure they meet certain national standards (7).

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These standards include 'Outcome 5: Meeting nutritional needs' which states:

- (1) Where food and hydration are provided to service users as a component of the carrying on of the regulated activity, the registered person must ensure that service users are protected from the risks of inadequate nutrition and dehydration, by means of the provision of:
  - (a) a choice of suitable and nutritious food and hydration, in sufficient quantities to meet service users' needs;
  - (b) food and hydration that meet any reasonable requirements arising from a service user's religious or cultural background; and
  - (c) support, where necessary, for the purposes of enabling service users to eat and drink sufficient amounts for their needs.
- (2) For the purposes of this regulation, 'food and hydration' includes, where applicable, parental nutrition and the administration of dietary supplements where prescribed. Proper care plans should also be in place, plus some form of assessment of the nutritional status such as the assessment of malnutrition.

The National Institute for Clinical Excellence (NICE) recommends that people are screened for malnutrition. One of the recommended tools to use is the MUST Malnutrition Universal Screening Tool (8).

Also, on the same day that the additional investment in research and dementia was launched, the CQC launched a national review of dementia care. They are to carry out focused and unannounced inspections of around 150 care homes and hospitals to assess how people with dementia are cared for. They also want to hear of people's experience of how people with dementia are cared for and are requesting this on their website (9). At the end of the inspections the CQC will produce a comprehensive report.

#### DIAGNOSIS OF DEMENTIA AND ALZHEIMER'S DISEASE

The diagnosis of dementia and Alzheimer's disease is not straightforward and only 44 percent of people with dementia in England, Wales and Northern Ireland are given a diagnosis (10). The diagnosis may be based on symptoms of loss of memory, thinking

tests and brain scans (11). It is promised by the British government that a dementia brain scan will be introduced in London and then rolled out to other specialist centres (12).

Interestingly, some nutritionists suggest that high homocysteine levels can cause dementia and offer mental agility tests on their website to enable preliminary assessment of the development of dementia (13).

#### NUTRITIONAL ISSUES

Adequate nutrition and hydration is important in maintaining health and this is equally important for those with Alzheimer's disease. As the disease progresses problems may be experienced with eating and drinking which can lead to malnutrition. Therefore, it is not surprising that a third of those suffering from Alzheimer's disease suffer from malnutrition (14).

Dysphagia is frequently associated with later stages of Alzheimer's disease and the condition requires diagnosis and advice on suitable textures from usually a Speech and Language Therapist. However, some Registered Dietitians are now seeking training so that they can perform such assessments which could be invaluable due to a shortage at times of speech and language therapists (15).

The National Patient Safety Authority has produced assessment forms to review clients with dysphagia. While these forms are predominately aimed at people with learning difficulties, they can be useful in other situations (16).

Various 'Dysphagia Diet Food Texture Descriptors' were produced in 2012 and detail the types and textures of foods needed by individuals who have swallowing difficulties (17).

#### DIETARY FACTORS

Looking at the literature, a number of factors have been suggested as being associated with Alzheimer's disease. Many studies are not conclusive, based on animal studies or are anecdotal (18). For Registered Dietitians, consideration of the research is important to provide appropriate advice for clients.

In the past aluminium was associated with the development of Alzheimer's disease and many people discarded their aluminium cooking pans (21). More recently, information about cooked red meat and links with dementia has been covered in the media. Looking at the research, this dietary link ►

was found with mice fed advanced glycation end products which are produced in cooking red meat. Obviously, animal studies are not easily interpreted into human health issues and, if in the light of this people were to avoid red meat, which can be a valuable source of iron and protein in the diet, it would hardly be beneficial to overall health (19).

Also, of recent prominence, was the information on coconut oil and its benefits to those suffering with Alzheimer's disease. While the research is shown as not conclusive, the recommended dosage of two teaspoons per day may be a useful consideration (20).

The key factors associated with Alzheimer's disease are cardiovascular risks such as raised blood cholesterol levels, hypertension, along with obesity and Type 2 diabetes (22). Currently, there is increasing interest in the Mediterranean diet (23). This diet is based on fruit, vegetables, grains, olive oil, pulses and nuts, herbs and spices. It also includes some fish and seafood. Poultry, eggs cheese and yoghurt are included in smaller amounts, as is wine. Sweets and meats are advocated less often. Such diets are low in saturated fat, rich in antioxidants (known to be beneficial in preventing oxidative damage), olive oil (which provides monounsaturated fat, omega-3 fatty acids and essential fatty acids advocated for their effect on reducing cardiovascular risk), plus includes foods with a low glycaemic index (24, 25).

There have been studies which show that such diets are beneficial to maintaining brain tissue and

preventing Alzheimer's disease. Other components of the Mediterranean diet, such as small amounts of alcohol and caffeine, can also be beneficial in preventing Alzheimer's disease (26).

Some studies have suggested that multivitamins may be recommended due to the potential benefits from their content of folate and B vitamins due to the effects on homocysteine concentrations.

#### ROLE OF REGISTERED DIETITIANS

On 28th February this year, the Health Secretary confirmed a 'revolution in dementia care' with more rapid diagnosis, plus much more support in the community (27). At the same time, the Cabinet Office and Department of Health have provided support for 'Dementia Friends' whereby people are being encouraged to get involved and to support those with dementia (28).

As shown, attention is focusing on dementia and there are implications for diet. At no time like the present can Registered Dietitians have a major role in both the prevention of Alzheimer's disease with appropriate advice, plus advice to individuals and carers about the subject and providing a balanced view to media reports. There is opportunity to be involved in research on the subject, involvement with care homes, plus providing training and input into strategies for support.

Dietitians with appropriate training can also become involved in the diagnosis of swallowing issues and appropriate prescribing of texture modifications.

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**Questions relating to: *Diet and Alzheimer's disease***

Type your answers below and then **print for your records** or print and complete answers by hand.

Q.1	Summarise the government's standpoint on tackling dementia in the UK.
A	
Q.2	Describe how Dr Alois Alzheimer first 'discovered' the disease.
A	
Q.3	What is the aetiology of 'modern-day' Alzheimer's disease?
A	
Q.4	Summarise in your own words the Care Quality Commission's standard: 'Outcome 5: Meeting nutritional needs'
A	
Q.5	How is dementia currently diagnosed in the UK?
A	
Q.6	Why are sufferers of Alzheimer's disease at greater risk of suffering from malnutrition?
A	
Q.7	What foods have been associated with Alzheimer's disease and why?
A	
Q.8	Describe why focus has been on the Mediterranean diet for sufferers of Alzheimer's disease.
A	
Q.9	What are the opportunities for dietitians in their role of preventing Alzheimer's disease and treating those with the condition?
A	

Please type additional notes here . . .