

THE BRAIN

from the fantastic to the forgetful



A dementia awareness
programme for Junior Cycle
and Transition Year



DEMENTIA SERVICES
INFORMATION AND
DEVELOPMENT CENTRE

*promoting excellence
in dementia care*

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Junior Cycle and Transition Year



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Dementia Services Information and Development Centre
6th Floor, Mercer's Institute for Successful Ageing
St James's Hospital, James's Street
Dublin 8, D08 E9P6

www.dementia.ie

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Contents

Programme Overview	2
--------------------	---

MODULE 1 Growing Older	5
------------------------	---

MODULE 2 The Brain	15
--------------------	----

MODULE 3 Brain Health	21
-----------------------	----

MODULE 4 What is Dementia?	37
----------------------------	----

MODULE 5 Perceptions of Dementia	47
----------------------------------	----

References and Additional Teaching Resources	52
--	----

Workbook	57
-----------------	----

Programme Overview

The Brain – from the fantastic to the forgetful, previously called *Will Grandad Remember Me*, is a dementia awareness programme developed by the Dementia Services Information and Development Centre, St James's Hospital, Dublin.

- The programme raises awareness about dementia and lifestyle risk factors, which may increase the risk of developing dementia later in life, and provides students with a unique opportunity to learn about exciting new developments taking place in this area.
- Building on what the students have learned about the brain through Junior Cycle Science, the programme explores how memory works and the importance of exercise and a healthy balanced diet in maintaining good brain health.
- It explores the factors that support positive ageing and those that don't and it encourages students to engage in debate and discussions about these topics.

This programme takes place against a background where:

- 1 Life expectancy is increasing and age is the biggest risk factor for dementia.
- 2 The number of people who will have dementia in the future is expected to rise.
- 3 The evidence on risk reduction is gathering momentum and there are a number of ongoing European dementia prevention trials.
- 4 Since 2014, Ireland has a National Dementia Strategy, which includes raising awareness among the public as one of its core pillars.
- 5 In 2013, Ireland signed the Dublin Declaration on Age-Friendly Cities and Communities in Europe. Measures to support Ireland in becoming an age-friendly society are outlined in the National Positive Ageing Strategy (2013) within the Healthy Ireland Framework (2013) (Age Friendly Ireland, 2015).

Pilot and evaluation

During 2014, the programme was piloted and evaluated with a group of students from a secondary school in Dublin.

Findings from this evaluation indicated that the programme did increase positive attitudes about ageing and dementia, with 75% of the students increasing their knowledge of Alzheimer's disease.

Structure and timetabling

The programme is built around five areas of learning and has been prepared in light of the demands of the existing curriculum. Modules 4 and 5 can be used separately or together.

- 1 Growing Older
- 2 The Brain
- 3 Brain Health
- 4 What is Dementia?
- 5 Perceptions of Dementia

Links to the curriculum

This resource can be integrated into Junior Cycle subjects Social, Political and Health Education (SPHE), Civic, Social and Political Education (CSPE), Science and Wellbeing in Junior Cycle. It is also possible to integrate this resource into Transition Year Science or other relevant subjects and Transition Year Units (TU).

Resources

All of the teaching resources that are required for each module are included in this book.

Aim

The programme aims to promote healthy ageing and good brain health and to recognise the important contribution that older people and people living with dementia make to society.

Objectives

- 1 To complement elements of Wellbeing in Junior Cycle, Science, SPHE and CSPE and to meet the needs of students at both Junior Cycle and Transition Year level.
- 2 To enable students to make informed decisions about their own physical health and well-being.
- 3 To enhance students' knowledge and understanding of how the brain works.
- 4 To enable students to relate to people who are living with dementia, both in their families and their communities.
- 5 To strengthen students' capacity to understand the perspective of a person living with dementia.
- 6 To provide opportunities for debate and discussion.

Acknowledgements

I would like to express my thanks to my colleagues from Dementia Services Information and Development Centre, Mercers Institute of Successful Ageing, St James's Hospital, Matthew Gibb, Cecilia Craig and Lorraine Lovely for their encouragement, time and patience.

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I would like to thank Associate Professor Suzanne Cahill, Dementia Services Information and Development Centre, St James's Hospital and Trinity College Dublin; Professor Brian Lawlor, St James's Hospital and Trinity College Dublin; Dr Louise Daly, Trinity College Dublin; Paul Mac Entee, Principal CBS James's Street; Joanne Burke, Vice Principal CBS James's Street; Ms Marie Lonergan, Loreto Abbey, Dalkey, who all very kindly proofread the book and provided such valuable advice; Annette Honan from the National Council of Curriculum Assessment for her expertise on the school curriculum; the students of CBS James's Street and Loreto Abbey, Dalkey who participated in the dementia awareness project for schools during 2014, 2015 and 2016, and, finally, Seamus Cunningham who gave an inspirational talk to the students as part of the project.

I would also like to thank the following for their permission to reproduce material and resources: Professor Sabina Brennan, Trinity College Dublin, for *Hello Brain* and Margaret Crean and Avril Easton from the Alzheimer Society of Ireland for *A Charter of Rights for People with Dementia*.

While every effort has been made to locate all the owners of the material and resources used in this book, some could not be contacted. If they wish to contact me, please do so on docaheny@stjames.ie.

M O D U L E

1

Growing Older

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Learning outcomes

Students will learn about

Students will be able to

Global populations

- Outline the world's population and the expected growth in the number of older people in the future.
- Explain the concept of retirement.

Ageism

- Discuss what ageism means and how it affects both young and old people.

Ageing

- Recognise the different biological, sensory and psychological changes that occur as we age.

Information, opportunities and resources

- Identify opportunities in their community where they can volunteer or work with older people.

Wellbeing in Junior Cycle

This module can be integrated into Wellbeing in Junior Cycle.

The six indicators for well-being as set out in the National Council for Curriculum Assessment (NCCA) Guidelines for Wellbeing in Junior Cycle are:

1 Active

3 Connected

5 Respected

2 Responsible

4 Resilient

6 Aware

This module could help support students to become more:

Responsible

- Do I take action to protect and promote my well-being and that of others?

Connected

- Do I feel connected to my school, my community and the wider world?
- Do I appreciate that my actions and interactions impact on my own well-being and that of others, in local and global contexts?

Respected

- Do I show care and respect for others?

Aware

- Am I aware of my thoughts, feelings and behaviours and can I make sense of them?

Other possible links to Junior Cycle and Transition Year curricula

This module can also be integrated into Junior Cycle Civic, Social and Political Education (CSPE), Science, and other relevant Transition Year subjects and Transition units (TU).

Growing Older

Ageing

Classroom discussion

Consider what age you think is 'old' and explain your answer.



What is ageing?

Ageing reflects all of the changes that happen throughout life and, despite what many people may think, ageing should be celebrated and is not necessarily a negative concept. Young people talk about the things they will do 'when they grow up', while other people look forward to the day when they can finally retire.

Age is often reflected in chronological terms, or the number of years that we have lived. When describing older people, the chronological age definition of 65 years and over is often applied (Age Action, 2014); however, the United Nations, which celebrates International Day of the Older Person each year on 1 October, refers to older people as being 60 years and over (WHO).

Ageing is multi-dimensional; it is a biological process, but also a psychological and cultural process; and each person will experience these processes in a unique way.



Biological and sensory change as we age

Immune system

Your immune system is your body's defence system and helps to protect your body from viruses and infections.

Your immune system gets a little weaker as you age, so older people are more likely to catch colds and the flu. The flu vaccine is available for all older people in Ireland from September/October each year.

It's also important that older people eat a healthy diet that's full of vitamins and minerals and get some exercise, which will strengthen their immune system.

Cardiovascular system

Your cardiovascular system consists of your heart, blood vessels and your blood.

Your heart is your body's hardest-working organ and is roughly the size of a closed fist. Your heart has two sides: the right side pumps blood to the lungs to receive oxygen and get rid of carbon dioxide and the left side pumps oxygen-rich blood all around your body.

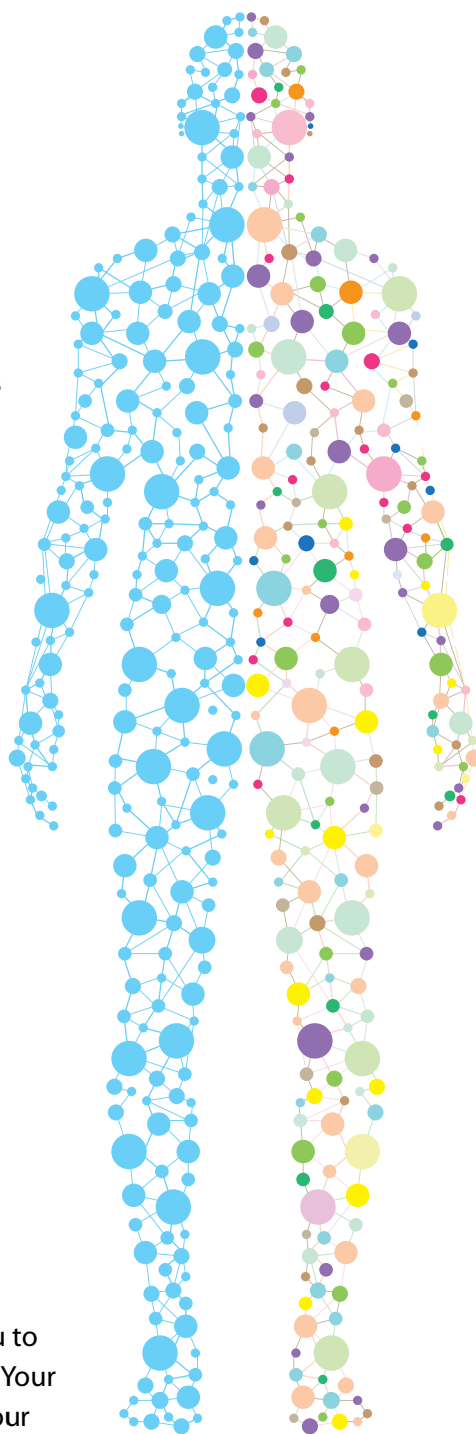
An older person's heart still works to pump blood around their body; however, an older heart might have to work a little harder. Changes also occur in the structure and weight of the heart as a person ages.

Older people can help their cardiovascular health by eating a healthy diet that's low in saturated fat and by keeping their cholesterol at a healthy level. Exercise is also very important for good heart health.

Respiratory system

Your respiratory system is made up of all the parts that help you to breathe; these are your lungs, trachea, bronchi and diaphragm. Your lungs are the main part of this system. They take oxygen into your body and they expel carbon dioxide. The trachea filters all of the air that we breathe and the bronchi carry air into our lungs. The diaphragm is a big muscle that contracts when you breathe in and expands when you breathe out. It's located just below your lungs. You get the hiccups when your diaphragm moves super-fast, mostly when you eat your food too quickly.

As we age, the shape of our ribcage may change as our bones become thinner. Your diaphragm also becomes a little weaker, so breathing in and out may be more difficult. It's very important that older people don't smoke, as it damages their lungs.



Sensory system

Your sensory system gives you information about the world around you, through your eyes, ears, smell, taste, and touch. As you get older, all of these senses can be affected, but sight and hearing are the most commonly affected, and some older people wear glasses and hearing aids.

Hearing

As we get older, the internal structures of the ear will change, so this will make it a little harder for older people to hear sounds. You might need to speak a little louder or sit closer to older people when you're speaking. The inner ear also controls balance, so this might affect older people's balance when they're walking, standing or sitting.

Sight

The structures of our eyes change as we get older too; your pupil size decreases and it takes longer for your eyes to adjust and react to light and darkness. This is one reason why older people might find it harder to drive at night time. Older people may need reading glasses for reading and watching TV or going to the cinema, as they find it a little harder to focus on objects.

Psychological change as we age

Now that you have an overview of some of the physical changes associated with growing older, let's have a quick look at psychological and emotional changes.

We all experience psychological changes that can be both positive and negative. Things that you felt stressed about last year, like your Christmas exams, may not be so stressful now as new exams take their place.

Older people can experience stress and psychological changes too. They may feel lonely, especially if they live alone or lots of their friends and family have died or grandchildren have emigrated. They have big changes to deal with, such as retirement and age-related changes that we talked about earlier. Some older people may also become a little forgetful.

It's very important to look after our emotional and psychological well-being, so, if you have older relatives or there are older people in your community who live alone, check and make sure they are okay.



GROWING OLDER

How culture can influence how we perceive ageing

Ageing isn't just a biological and psychological process; how people view ageing varies from culture to culture.

In China and Japan, adult children are expected to look after their older parents, while in India, older people are the head of the family and younger members of the family look to their older relatives for advice and support. The image of the older person as a sennin (wise sage) is common in popular Japanese culture (Karasawa et al., 2011), where over 58% of people 60 years and older lived with one or more of their grandchildren, compared to just 17% in America (Takagi, Silverstein and Crimmins, 2007).

Classroom discussion

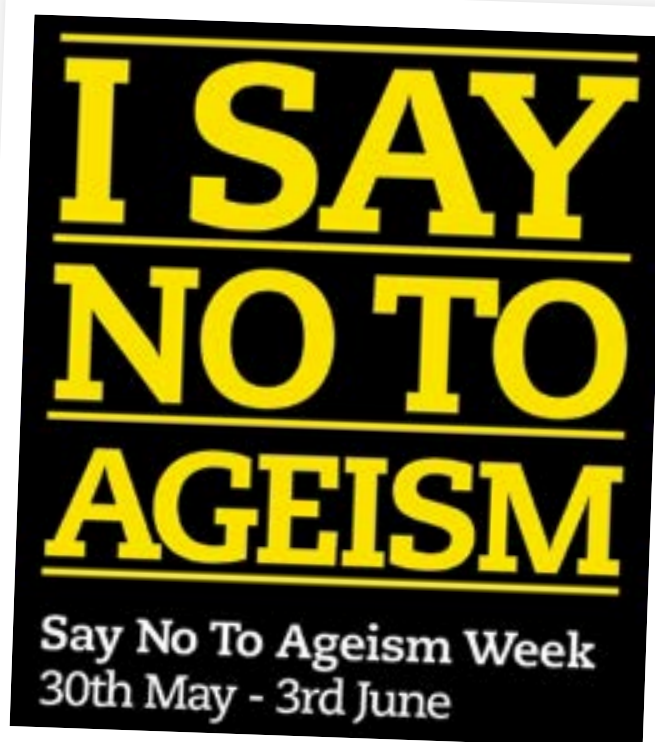
- 1 Can you think of older people around the world who make, or have made a positive contribution to society?
- 2 If you could pick an older role model, who would it be?

Ageism

In 1968, Dr Robert Butler coined the term 'ageism'. Ageism means that people make negative judgements about other people based on their age. Ageism can apply to both young and older people.

Older people are often seen as 'past their sell by date', not as fun as younger people; or they might be expected to stop working once they have retired. This is ageism and it is not respecting the human rights of older people.

Older people are still involved in many aspects of society; they often work, they can be involved in politics and other aspects of public life, and are engaged and interested in learning.



Produced by the former Equality Authority under EU progress 2010

Classroom discussion

Can you think of examples of ageism in Ireland?

Workbook

Please see page 60 of the workbook for related activities.

The world's ageing population

The world's population is ageing. Today, there are over 900 million people aged over 60, and by 2050 that number is expected to reach over 2 billion. The proportion of people aged over 60 is the fastest-growing population in the world today. According to the World Health Organization (WHO), global life expectancy in 2015 was 71 years, ranging from 60 years in low-income countries to 77 years in high-income countries. Women live on average 4.5 years longer than men all around the world.

Thanks to developments in modern medicine and public health such as immunisations and safe drinking water, we are living longer and healthier lives. However, inequalities in health, education and income still exist between low- and high-income countries.

The Global Age Watch Index ranks countries around the world on how well their older populations live. Ireland has been ranked in fifteenth place out of 96 countries, with Switzerland being ranked first (Global Age Watch Index, 2015).



Classroom discussion

What age will you be in 2050?



Workbook

Please see page 60 of the workbook for related activities.



Ireland's population and life expectancy

The population of the Republic of Ireland is just over 4.5 million.

In the early 20th century, life expectancy in Ireland was, on average, 48 years of age; by 1950 it was 66; and now, life expectancy is, on average, 81 years old.

Workbook

Please see page 60 of the workbook for related activities.



Retirement

There is no single retirement age in Ireland. For those who work in the public sector, there are certain statutory ages that apply, but, in the vast majority of cases, retirement age has traditionally been 65 years of age, although some people work beyond this age too.

GROWING OLDER

Pensions

As people are living longer and are more active in retirement, it's important that people think about how they will fund their retirement. A pension is a long-term saving plan where regular amounts of money are saved up for retirement. There are different types of pension plans, including a company pension plan, a personal pension plan and the State pension, which is provided by the State if a person meets certain criteria.

Since January 2014, the age at which a person qualifies for a State pension increased from 65 to 66 years of age and is scheduled to increase to 67 years from 2021 and to 68 years in 2028. However, despite pension provision in Ireland, 10.3% of people 65 years and over in 2014 were at risk of poverty (Age Action, 2016). Across the world, just one in five older people have a pension; to put it another way, 80% of older people in developing countries have no regular income (Age Action).

Classroom discussion

Considering the scheduled increases in the age at which people will qualify for a State pension, do you think that organisations will need to update their retirement age to match that of the State retirement age? What opportunities and obstacles might this present?

*Who decided that we should retire at 65?***Bismarck ... or was it?**

In 1889, Otto von Bismarck, the first Chancellor of Germany, introduced the first pension for workers in Germany. Bismarck's proposal, which was passed into law, determined that the age of retirement was 70 years old. At the time, hardly anybody in Germany lived to 70 years old, so Bismarck knew that the pension scheme wouldn't cost very much. In 1916, the German parliament decreased the age of retirement to 65.

In 1935, by the time America introduced its social security system, the retirement age of 65 was well established.

So it wasn't Bismarck after all!



Otto von Bismarck

Weblink

Otto von Bismark

*Classroom discussion*

If you had an opportunity to speak to your local TD about Ireland's ageing population, what would you say to him/her?



Information, opportunities and resources



Active Retirement Ireland

Active Retirement Ireland supports, empowers and advocates for people who are retired.

If you would like more information about Active Retirement Ireland, please see:

- Website: <http://www.activeirl.ie/>
- Phone: 01 873 3836 ➤ Email: info@activeirl.ie

Age Action

Age Action advocates for older people and also encourages them to speak and act for themselves in order to bring about change. They also provide services, including computer training and Care and Repair.

If you'd like more information about Age Action and ways you can get involved, please see:

- Website: <https://www.ageaction.ie/>
- Phone: 01 475 6989 ➤ Email: info@ageaction.ie

Age and Opportunity

Age and Opportunity is a national organisation that provides opportunities for older people to participate in physical activity, education and the arts.

If you'd like more information about Age and Opportunity and ways you can get involved, please see:

- Website: <http://www.ageandopportunity.ie/>
- Phone: 01 805 7709 ➤ Email: info@ageandopportunity.ie

Age Friendly Ireland

Age Friendly Ireland coordinates the Age Friendly Cities and Counties Programme. The initiatives, one of which is in every local authority in Ireland, aim to make Ireland the best place in which to grow older.

If you would like more information about Age Friendly Ireland, please see:

- Website: <http://agefriendlyireland.ie/>
- Phone: 01 222 6266 ➤ Email: info@agefriendlyireland.ie

Alone

Alone is an organisation that helps older people who are affected by poverty, living in social isolation, homeless, or lonely. Like Friends of the Elderly, they also provide a befriending and volunteer service.

If you would like to get involved, please see:

- Website: <http://alone.ie/what-we-do/befriending/>
- Phone: 01 679 1032 ➤ Email: enquires@alone.ie

Crosscare

Crosscare is the Social Support Agency of the Catholic Archdiocese of Dublin and provides a range of social care, community and youth work services across the Dublin region. They help both young and old people who are affected by poverty in the Dublin area through advocacy, residential services and food services like meals-on-wheels.

If you would like to volunteer with Crosscare, please see:

- Website: <http://http://www.crosscare.ie/index.php/volunteer-with-us>
- Phone: 01 836 0011 Ext 151 ➤ Email: volunteer@crosscare

Friends of the Elderly

Friends of the Elderly is a charity that tries to reduce the loneliness and isolation that is experienced by many older people in Ireland.

If you'd like more information or would like to volunteer with Friends of the Elderly, please see:

- Website: <http://www.friendsoftheelderly.ie>
- Phone: 01 873 1855 ➤ Email: info@friendsoftheelderly.ie

Irish Senior Citizens Parliament

The Irish Senior Citizens Parliament promotes the interests and views of older people and informs the government of issues that are important to older people.

If you would like to know more about what the Irish Senior Citizens Parliament does and ways that you could become involved, please see:

- Website: <https://iscp.wordpress.com/> ➤ Phone: 01 856 1243 ➤ Email: seniors@iol.ie

Older and Bolder

Older and Bolder incorporates eight non-governmental organisations: Active Retirement Ireland, Age & Opportunity, The Alzheimer Society of Ireland, Family Carers Ireland, The Irish Hospice Foundation, Irish Senior Citizens Parliament, Older Women's Network and the Senior Help Line. Their collective aim is to combat ageism and campaign for the rights of older people.

If you would like to know more about Older and Bolder and their work, please see:

- Website: <http://www.olderandbolder.ie/>

Third Age

Third Age celebrates the third age in life. It recognises that people may be retired, but would still like to contribute and be involved in society.

If you'd like more information about Third Age and ways you can get involved, please see:

- Website: <http://www.thirdageireland.ie/> ➤ Phone: 046 955 7766

University of the Third Age

University of the Third Age or U3A began in France in 1974 and provides 'third agers' with the opportunity to come together and learn from each other.

If you'd like to find out more about University of the Third Age in Ireland, please see:

- Website: <https://www.ageaction.ie/how-we-can-help/lifelong-learning-u3a/what-university-third-age-u3a>

Workbook

Please see page 61 of the workbook for related activities.

MODULE

2

The Brain



Learning outcomes

Students will learn about

Students will be able to

The brain

- Identify the three main parts of the brain and their functions.
- Give an example of three facts about the brain.

Brain lobes and their functions

- Recognise the main brain lobes and their functions.

The nervous system

- Identify two parts of the nervous system and their functions.
- Give an example of how nerve cells work.

How memory works

- Compare short- and long-term memory.

Wellbeing in Junior Cycle

This module can be integrated into Wellbeing in Junior Cycle.

The six indicators for well-being as set out in the National Council for Curriculum Assessment (NCCA) Guidelines for Wellbeing in Junior Cycle are:

1 Active

3 Connected

5 Respected

2 Responsible

4 Resilient

6 Aware

This module could help support students to become more:

Aware

- Do I understand what helps me to learn and how I can improve?

Other possible links to Junior Cycle and Transition Year curricula

This module can also be integrated into Junior Cycle Science, Transition Year Science, other relevant Transition Year subjects and Transition units (TU).

The Brain

Dr Gerald Edelman, who won the Nobel Prize in Physiology and Medicine in 1972, once stated, 'every human brain is unique'. It is involved in everything you do, how you think, how you act, how you get along with other people; it is your organ of personality and judgement and it works seamlessly every day.

Your brain is more powerful, more complex and much smarter than any computer ever built, and it has more connections than there are stars in the universe. It deals with hundreds of messages every day from the world around you and also from your body, and it tells each part of your body what to do. Information travels around your brain at 268 miles per hour, that's two miles per hour faster than the Bugatti Veyron, one of the fastest supercars on the planet. Your brain collects all of the information, sorts it out, thinks, remembers, solves problems and coordinates all actions at the same time, even when you're asleep.

You might be a legal adult at 18, but your brain is not fully developed until your mid-twenties and, as young people who are under 25, it is important that you use this to your advantage and engage in healthy brain behaviours.

Throughout your adult life, no matter what age you are, your brain can continue to change and make new connections; an ageing brain can be a healthy brain.

Your brain sits in your skull at the top of your spinal cord. The brain has three main parts:

- 1 The cerebrum** has two parts – the left and the right cerebral hemispheres. The cerebrum is the biggest part of your brain and controls voluntary movements. Without it, you would not be able to run or play football.
- 2 The cerebellum** is much smaller than the cerebrum and controls balance, movement and coordination. So, when you're balancing on one foot, it's your cerebellum that's helping you to do that.
- 3 The brain stem** connects your brain to your spinal cord and controls the automatic actions of your body such as breathing and all the other functions that you need to stay alive and kicking.



THE BRAIN

Your brain is wrapped in three layers of tissue and floats in a special shock-proof fluid to prevent it from getting bumped on the inside of your skull as your body moves around.

The adult brain weighs about 1.5kg and is about 2% of the total body weight. The average human brain is 140mm wide, 167mm long and 93mm high.

The **left side** of your brain is usually better at **analytical thought**, such as problem-solving and maths.

The **right side** of the brain is better at **abstract thought**, such as playing a musical instrument or writing an essay.

Brain lobes

The cerebral cortex covers both of your brain hemispheres and is divided into four lobes called the **parietal lobe**, **frontal lobe**, **temporal lobe** and **occipital lobe**. Each cerebral hemisphere is divided into these four lobes by sulci and gyri. The sulci or fissures are grooves and the gyri are the bumps that can be seen on the surface of your brain.

Classroom activity

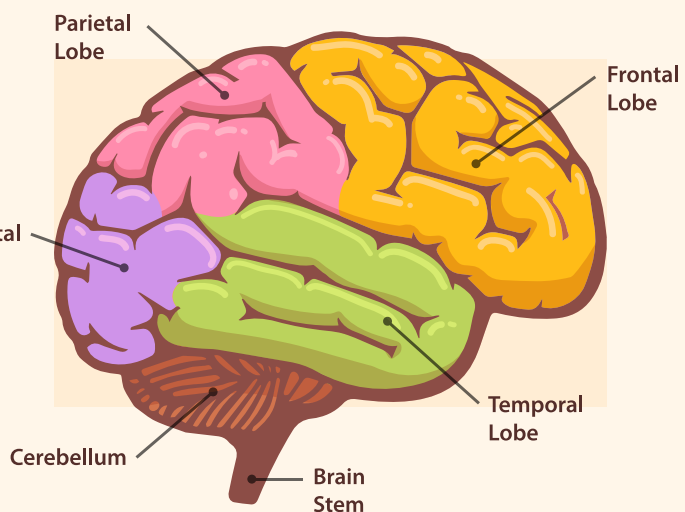
Where are my brain lobes?

Frontal lobes: Place your hands on the front part of your head. This is your frontal lobe and it occupies one-third of your entire brain. It's involved in complex tasks, such as planning, reasoning and managing attention.

Temporal lobes: Place your hands over your ears and towards your eyebrows. This is your temporal lobe. The temporal lobes are involved in several functions, including memory, speech, visual and auditory perception and emotional responses.

Parietal lobes: Place your hands on the middle of your head. This is your parietal lobe. The parietal lobes process sensory and spatial information and are also involved in cognition and speech.

Occipital lobes: Place your hands at the back of your head. This is your occipital lobe. The occipital lobes receive and make sense of visual information; they are also involved in colour perception and recognising moving objects.



Workbook

Please see page 62 of the workbook for related activities.

The nervous system

The nervous system is the motorway along which your brain sends and receives messages about what is happening around your body. Your nervous system contains billions of nerve cells or neurons that join together to make nerves.

The nervous system is divided into two parts, your central nervous system (CNS) and your peripheral nervous system (PNS).

The central nervous system includes your brain, your spinal cord and all the nerves that come from it. The skull protects the brain and the spine protects the spinal cord.

The peripheral nervous system is the second in command and it carries messages to and from the central nervous system. It sends information to the brain and also carries out orders from the brain. Messages travel through the cranial nerves, which are nerves that branch out from the brain. Messages also travel through the spinal nerves which branch out from the spinal cord.



How do nerve cells work?

When a message comes to the brain from anywhere in the body, the brain tells the body how to react. For example: it's a lovely summer's day and you are at the beach with your friends. It's quite warm and you decide you'd like a swim to cool down. You're floating around in the sea, when suddenly, ouch! What is that hot burning pain? A jelly fish! You've been stung by a jelly fish!

What do you do?

- A** Stay in the water; it's so cool after all.
- B** Swim as quickly as you possibly can to the safety of the beach.

You'll choose B.

Why?

The nerves in your skin shoot a message of pain to your brain. Your brain then sends a message back telling your body that it is hurt.

While all of this is happening, you're busy remembering this event so that the next time you get into the sea, you'll remember to check for jellyfish first.

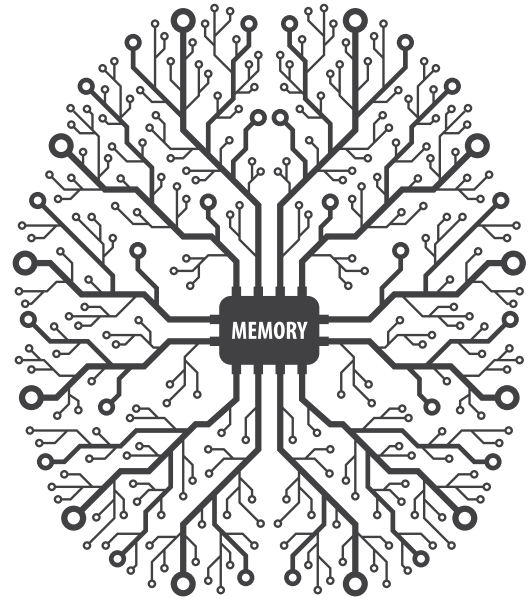
THE BRAIN

What is memory?

Your memory is like a computer database. Much like a database, your memory processes, saves and finds what you enter into it.

Your memory stores facts, sounds, tastes, smells, what you see, your emotions and personal memories, for example, your first day at school.

Using your memory is like storing files in different folders on a computer so that you can find them easily.



Your memory systems

Short-term memory

Short-term memory is your brain's ability to process and remember information at the same time. It only holds a very small amount of information and for a short period of time.

When you learn something new in school, you hear it first from your teacher and you concentrate really hard on remembering that information. If you don't concentrate and don't make a conscious effort to remember, that information will be lost forever.

So how does it work? To keep this new piece of information that you've learned, you need to use repetition or rehearsal, for example, reading the information aloud. The next step is storing the information and transferring it to your long-term memory so that you can use it at a later stage, for example, in an exam.

Short-term memory often becomes impaired or doesn't function as it should for people who are living with dementia. Finding their way home or remembering names can be difficult as these tasks are controlled by our short-term memory.

Long-term memory

Long-term memory is like the archives of your computer where you file memories or information away to be retrieved later. You may not use your long-term memory all the time but you know where to find it when you need it for an exam or if you're talking to your friends about an event that happened when you were younger.

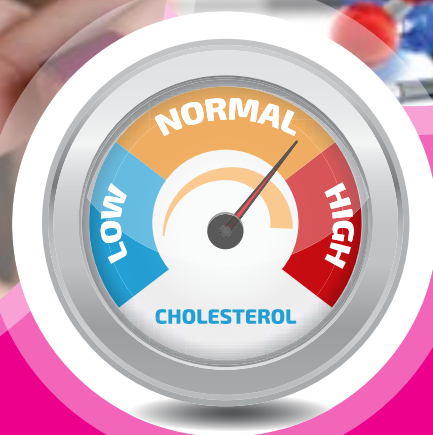
Events that happened a long time ago are often easier to retrieve because your memory has been rehearsing these memories and playing them back for many years. Long-term memory is the memory store people living with dementia have the most access to and that is why they can remember events from the past very well. So it's important to talk to them about these events.

Dementia is an umbrella term that describes lots of conditions that damage a person's brain. There are close to 100 different types of dementia and Alzheimer's disease is one type. Dementia is discussed further in Module 4 – What is Dementia?

M O D U L E

3

Brain Health



Learning outcomes

Students will learn about

Students will be able to

Brain health

- › Discuss what brain health means.

Risk factors for dementia

- › Identify five risk factors associated with an increased risk of developing dementia.
- › Analyse the impact an unhealthy lifestyle can have on brain health.

How we can reduce our risk of developing dementia later in life

- › Select examples of protective factors that help to reduce the risk of developing dementia.

Risky behaviours

- › Examine the different ways that risky behaviours affect brain health.
- › Discuss attitudes and feelings about risky behaviours.

Information, opportunities and resources

- › Demonstrate how to respond in an emergency caused by substance abuse.
- › Identify support services for young people in dealing with substance abuse.

Wellbeing in Junior Cycle

This module can be integrated into Wellbeing in Junior Cycle.

The six indicators for well-being as set out in the National Council for Curriculum Assessment (NCCA) Guidelines for Wellbeing in Junior Cycle are:

- | | | |
|----------------------|--------------------|--------------------|
| 1 Active | 3 Connected | 5 Respected |
| 2 Responsible | 4 Resilient | 6 Aware |

This module could help support students to become more:

Active

- › Am I physically active every day?

Responsible

- › Do I take action to protect and promote my well-being and that of others?
- › Do I make healthy eating choices?

Connected

- › Do I appreciate that my actions and interactions impact on my own well-being and that of others, in local and global contexts?

Resilient

- › Do I know where I can go for help?
- › Do I believe that, with effort, I can achieve?

Respected

- › Do I show care and respect for others?

Aware

- › Am I aware of my thoughts, feelings and behaviours and can I make sense of them?
- › Am I aware of what my personal values are and do I think through my decisions?

Other possible links to Junior Cycle and Transition Year curricula

This module can also be integrated into Junior Cycle Social, Political and Health Education (SPHE) and other relevant Transition Year subjects and Transition units (TU).

Brain Health

Weblink

Juvenal



'Mens sana in corpore sano'

JUVENAL, SATIRE X

'Mens sana in corpore sano' roughly means, 'a healthy mind in a healthy body'.

Even back in first century Rome they were talking about brain and physical health.

Classroom discussion



What do you think brain health means?

Brain health is a difficult term to define; is it about mental health, or having a good memory? It includes both of these and much more. We can, no matter what age we are, have a healthier brain if we engage in behaviours that are brain-friendly, such as exercise, learning, social interaction and a healthier diet.

Brain health is also important in the new science of dementia prevention. According to recent research, there are changes we can make to our lifestyles at any age, which might have the potential to prevent dementia from developing. A study from King's College London and University of Cambridge, suggests that up to 30% of Alzheimer's disease cases might be preventable if we reduce a number of modifiable risk factors (Norton et al., 2014).

Throughout Europe, there are on-going dementia prevention trials including FINGER in Finland and the PREVENT study in the UK. In 2015, the Global Brain Health Institute was established in Trinity College Dublin and the University of California, San Francisco; its aim is to help prevent dementia worldwide.

What is a risk factor?

A risk factor is any attribute, characteristic or exposure of an individual that increases the likelihood of developing a disease or injury (WHO). Risk factors for various diseases around the world include high blood pressure, obesity and unsafe drinking water (WHO). However, there are no guarantees; people can have risk factors and not develop an illness, and people who are health conscious can develop a condition despite their protective lifestyle.

Risk factors for dementia

Risk factors have been identified that increase our chances of developing dementia. Some of these risk factors have a strong associated risk, such as age, while others, like aluminium pots and pans, are weaker. Now let's take a look at those non-modifiable and modifiable risk factors.

Non-modifiable risk factors for dementia (the things we can't change)

Age

Dementia is not a normal process of ageing – we won't all develop dementia.

However, age is the most significant risk factor for developing dementia. After the age of 65, the risk of dementia increases slightly and if one is lucky enough to live to 90 and beyond, the risk of developing dementia is considerably higher.

Gender

In most countries around the world, on average, women live longer than men and, as age is the biggest risk factor, women are marginally more likely to develop dementia in later life.

Genetics

Each cell in your body contains tens of thousands of genes, which are found on structures called chromosomes. Chromosomes and genes are made of deoxyribonucleic acid, or DNA. Each cell contains a nucleus, which contains 46 individual chromosomes – 23 pairs of chromosomes, one from each parent.

Genes play a very important role; they contain information about many of your physical traits, such as the colour of your eyes and your height.

Sometimes genes don't work as they should, they change, and this is called mutation.

Scientists have discovered genes that may increase a person's risk of dementia; however, in most cases, dementia is not thought to be genetic. Gene mutations, or changes, that cause Alzheimer's disease are very rare.

A lot more research is needed to find out why people develop dementia.



Modifiable risk factors for dementia (the things we can change)

Diabetes

Diabetes affects how the body uses glucose. Glucose is the main sugar in the body and we get glucose from the food we eat. After we eat, our glucose levels rise and our pancreas produces insulin and releases it into our bloodstream. Insulin is pretty clever as it helps our cells to take in glucose. But, for people with diabetes, their pancreas doesn't produce insulin, so the glucose can't get into the cells and it results in too much sugar in the bloodstream.

The difference between Type 1 and Type 2 diabetes is simple. People who have Type 1 diabetes don't produce any insulin, while people with Type 2 diabetes do produce insulin but their body ignores it. People who are overweight, who have a very unhealthy diet, who don't exercise or who have a family history of Type 2 diabetes are at a higher risk of developing the condition.



How it increases the risk of developing dementia

Scientists tell us that Type 2 diabetes in midlife increases a person's risk of developing dementia. So, once you reach middle age you should go to your GP for a blood test to have your glucose levels checked.

High blood pressure

Blood pressure is a measure of the rate at which blood is pumped around your body. High blood pressure or hypertension puts extra strain on your heart and your arteries, putting you at an increased risk of a heart attack. High blood pressure is silent and symptomless and often isn't detected until you have it measured.

How it increases the risk of developing dementia

Scientists tell us that a history of undiagnosed high blood pressure in midlife increases a person's risk of developing dementia. High blood pressure is mostly preventable through healthy lifestyle choices such as eating a healthy diet and exercising. If you know somebody who has high blood pressure, try to encourage them to reduce it and to visit their GP.



Obesity

Obesity is being dangerously overweight. An unhealthy diet and lack of exercise are two of the main causes of obesity. Visceral fat, or fat around your middle, is the most dangerous type of fat as it is stored around the organs in your tummy region.

According to the World Health Organization, Ireland is set to become the most obese nation in Europe; so we really need to start exercising and eating healthier foods.



How it increases the risk of developing dementia

Scientists tell us that obesity during midlife increases a person's risk of developing dementia in later life. But if you have a healthy diet and maintain a healthy weight, your risk is very low. So, take your weight seriously.

Smoking

Smoking is inhaling and exhaling poisonous fumes from either cigarettes or cigars. Of the 7,000 chemicals in cigarette smoke, a lot are poisonous and can cause cancer. Some of the harmful chemicals include nicotine, which is highly addictive, an odourless gas called carbon monoxide, arsenic which is used in rat poison, ammonia which you might use to clean your toilet, acetone which is used to take off nail polish and tar.



How it increases the risk of developing dementia

Smoking restricts blood flow to the brain and, along with ageing your skin, it also ages our brain. Research tells us that people who smoke have a 45% risk of developing dementia in later life (ADI, 2014). There are lots of links between smoking and increasing the risk of developing dementia, so, if you smoke, please give up, and if you don't, please don't take it up.

BRAIN HEALTH

High cholesterol

Your liver makes 80% of the cholesterol in your body and the remaining 20% comes from your diet. There are two types of cholesterol: HDL and LDL. HDL is good cholesterol and is found in foods such as nuts and salmon, while LDL is bad cholesterol and is found in foods like cheese, red meat, biscuits, crisps and highly processed foods. The liver breaks down HDL cholesterol, while LDL cholesterol doesn't reach the liver and just stays in your blood.

Your GP can check your cholesterol with a simple blood test.

As always, there are no guarantees; some people do all the right things and are very healthy but they still have high cholesterol. In this case they might have a family history of high cholesterol and their doctor may recommend tablets called statins to help control their cholesterol.



How it increases the risk of developing dementia

Scientists tell us that if you have high cholesterol for a long time, you have an increased risk of developing dementia. They also say that even if your cholesterol is slightly higher than it should be, this might also increase your risk. People who have a family history of high cholesterol should have their cholesterol checked regularly by their doctor.

Protective lifestyle factors

Brain plasticity

Brain plasticity, also called neuroplasticity, refers to the brain's ability to change throughout life. The human brain has an extraordinary ability to reshape itself by forming and strengthening new connections between neurons. Every time we learn a new skill, for example, learning a new sport or learning a new fact, our brain changes.

How it reduces the risk of developing dementia

Scientists tell us that the brain never stops learning, so no matter what age you are, it's important to engage in new learning.

Don't get stuck in a brain rut, challenge your brain. The more connections you have, the stronger your brain will be. Your brain will be fitter, happier and healthier and will be able to look after you when you are older and may even protect you against developing dementia.



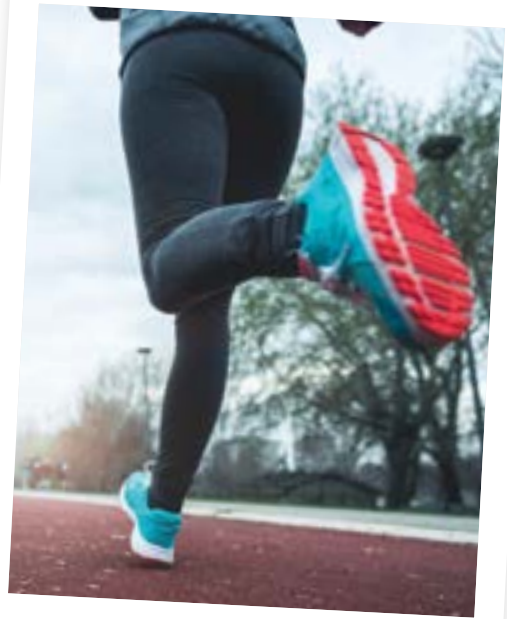
Exercise

People who exercise are fitter, healthier and have much happier brain cells than their fellow couch potatoes. Some forms of exercise are free, like going for a walk or a run, and you can exercise at any age, it's never too late. What's not to like? Well, maybe getting off the couch in the first place; that's pretty hard!

How it reduces the risk of developing dementia

Exercise stimulates the production of BDNF (Brain-Derived Neurotrophic Factor), which helps form connections between your brain cells.

Experts recommend that we all do at least 120 minutes of cardiovascular exercise, such as walking or running, each week, and because exercise releases endorphins, you'll also feel better.



Risky behaviours that can damage your brain

We all take risks throughout life and, as Mark Zuckerberg, Facebook founder, once said: 'the biggest risk is not taking any risk'. Some people take a risk to entirely change their career; some people, like journalists, take risks to work in very dangerous parts of the world, and some people might even think that eating frog legs is a pretty risky business too! Young people also take risks that take them out of their comfort zone; however, some of these behaviours can harm both their physical health and the health of their brain.

Your brain is still growing. You might be an adult when you reach 18 but your brain won't reach adulthood until your mid-twenties. So, at this moment in time, your brain is a work in progress and it's important that you take care of it.

Young people might engage in risky behaviours like smoking, drinking too much alcohol and taking drugs because they are curious or bored, feel pressurised by media advertising or their peers or just want to fit in. It can be a very difficult time and often it takes a very brave person to stand up to peer pressure and say 'No'.



Classroom activity

Do you think that young people take more risks than older adults?

What risks do you think young people are more likely to take?

BRAIN HEALTH

Let's look at three risky behaviours in a little more detail.

Smoking

According to the report *A Tobacco-Free Future*, published in 2013, there are now fewer children aged 10–17 years old smoking in Ireland. The percentage decreased from 36% to 27% between 2006 and 2010. The average age at which young people have their first cigarette is 13 years old. But the good news is that most Irish young people who smoke want to quit smoking; over 70% of 15–16-year-olds have tried to quit.

E-cigarettes have become quite popular since their emergence on the Irish market a number of years ago. Currently, they are not regulated but the Department of Health does plan to introduce legislation that will ban their sale to under 18s.

A recent Irish study looked at the use of e-cigarettes among young people and found that over 25% of 16–17-year-olds had tried them. This is higher than most other European countries (Babineau, Taylor and Clancy, 2015).

The World Health Organization states that aside from the dangers to young people's health, 'academically, young people who smoke are more likely to report lower academic achievement'.

Young people who smoke often suffer from a shortness of breath and might find that their non-smoking friends are out-performing them on the sports field or in PE class. Smoking discolours your teeth and your fingernails; your breath will not smell very nice and your skin will wrinkle more quickly than your friends who don't smoke.

Smoking at a young age also increases your risk of lung cancer.

The dangers of smoking also go beyond first-hand smoke; second-hand smoke can be just as harmful. Let's introduce Dr Jesse Steinfield who was one of the first people to recognise the dangers of second-hand smoke.



Dr Jesse Steinfield

In 1969, President Richard Nixon appointed Dr Jesse Steinfield as Surgeon General. The Surgeon General is America's No. 1 doctor who advises the nation on how to stay healthy and reduce the risk of serious illness.

Dr Steinfield wrote a famous report in 1972 on the dangers of second-hand smoke and he was the first Surgeon General to explore this particular area. At that time the tobacco companies in America were very powerful and they were not very pleased with Dr Steinfield's report. He suggested that smoking should be banned in public places and that more research was urgently needed. In 1973, Dr Steinfield's position was not renewed and it is speculated that the tobacco industry put a lot of pressure on the Nixon administration to remove Dr Steinfield.

But we have a lot to thank Dr Steinfield for; we now know how dangerous second-hand smoke is. There is no safe level of exposure to second-hand smoke; it causes lung cancer and has been linked to other cancers such as brain cancer. It is particularly dangerous for children and can increase their risk of developing respiratory problems such as asthma and pneumonia.



Dr Jesse Steinfield

Weblink

Dr Jesse Steinfield

Ireland and the smoking ban

On 29 March 2004, Ireland made history by becoming the first country in the world to introduce legislation that banned smoking in an enclosed workplace. Micheál Martin, who was at the time Minister for Health, spearheaded the legislation, but it wasn't very popular at first, especially among publicans and smokers. However, in time it was a huge success and a lot of people gave up smoking as a result of the ban.

Weblink

Ireland and the smoking ban



Former Minister for Health Micheál Martin T.D.

BRAIN HEALTH

Binge drinking

According to the HSE, 'Binge drinking is a term used to describe an occasion when we drink too much. It is when we have six or more standard drinks. Binge drinking is a form of harmful drinking that is likely to increase our risk of accidents, injuries, violence and alcohol poisoning. Having more than six or more standard drinks at a time can seriously increase the harmful effects of drinking.'



How does alcohol affect you?

Alcohol affects your central nervous system by altering speech, causing hazy thinking, slowed reaction time, dulled hearing, impaired vision, weakened muscles and foggy memory. Too much alcohol is poisonous and highly addictive due to ethyl alcohol.

A study found that adolescents in Junior Cycle who were classified in the problem-drinking category were more likely to report severe/very severe depression. This was also the case for those in Senior Cycle; however, the association was stronger with Junior Cycle students. Problem drinking behaviour was also linked to lower self-esteem in both Junior and Senior Cycle students (My World Survey, 2012).

What is self-esteem?

Self-esteem is the value or worth we place on ourselves. Some people have low self-esteem and this is often due to negative comments or bad experiences. Sometimes we worry too much about what other people think of us, or we try to please everybody. This can have a negative effect on our self-esteem. People who have good or positive self-esteem feel good about themselves.

Not everybody has good esteem all the time; we all have good and bad days but it's important that you believe in your own self-worth.

Long-term effects

Brain: Alcohol penetrates the blood-brain barrier and affects brain chemistry and increases the effect of a receptor called dopamine which gives you a 'happy' feeling. Dangerous levels of drinking can cause blackouts when you forget things that happened in the very recent past.

Heart: Excessive drinking can weaken your heart muscles. As a result, the heart finds it increasingly difficult to pump blood around your body. This is known as cardiomyopathy.

Liver: Your liver is your own detox system and it works hard to get rid of toxins from your body. When you drink, your liver works even harder to process the alcohol. However, drinking too much can damage your liver and can lead to cirrhosis of the liver.

What do I do if someone collapses after drinking too much?

Call 999 or 112 and ask for an ambulance. Turn the person on their side and put into the recovery position so that they can breathe freely and will not swallow vomit if they've been sick. Do not leave them alone until help arrives.

Drugs

Cannabis (marijuana, hash, weed, dope, skunk)

Under the Misuse of Drugs Act (Ireland), it is illegal to grow, produce, possess and supply cannabis in Ireland. Although medical cannabis is used in countries such as the Netherlands for medical reasons, both medical and non-medical use is illegal in Ireland.

Cannabis use can cause paranoia and anxiety, and users can experience short-term memory loss and poor judgement. In the long-term, cannabis is thought to contribute to schizophrenia and depression.



Cocaine

Cocaine is a very powerful and addictive drug, which is also illegal in Ireland. Cocaine is made from the leaves of the coca plant in South America.

Cocaine activates the reward centre of your brain and increases the levels of a neurotransmitter called dopamine. This is what gives cocaine users the intense high and feelings of extreme confidence and what leads to cocaine becoming highly addictive.

Cocaine use also has other dangerous effects, such as increasing your heart rate and blood pressure.

MDMA (ecstasy, E)

Ecstasy is a stimulant drug that causes hallucinations. It is illegal in Ireland. Users experience extreme feelings of happiness and euphoria and the effects may last from three to six hours.

Like cocaine, ecstasy increases dopamine activity but also increases levels of two other transmitters called serotonin and norepinephrine. As a result, users will feel intense emotional closeness, but also confusion, anxiety and depression.

Long-term use can cause sleeplessness, paranoia, a lack of energy and increased loss of serotonin.



Sports-related concussion

Dr Colin Doherty MD FRCPI

Consultant Neurologist, St James's Hospital, Dublin

Severe head injuries (also known as Severe Traumatic Brain Injuries, STBIs) are one of the most common causes of death in people under 50 and are seen mainly as a result of road traffic accidents, assaults and military combat. Of course, many more people are affected by TBI who do not die but suffer a range of physical, psychological, cognitive and emotional consequences; sometimes life-altering. Most of these patients have suffered moderate TBIs, with bruising and bleeding into the brain. A much larger number, somewhere in the region of 30,000 people in Ireland every year, suffer injuries that are called mild TBI, also known as concussion; by far the commonest cause of concussion is contact sport.

Most experts describe concussion as a complex of symptoms like dizziness, headache, confusion, drowsiness, vomiting and unsteadiness, which result from banging the head off another player's body or the ground. However, we now understand that the term can be used to describe a collision in which the head is clearly involved whether or not the player complains of symptoms. In the vast majority of cases if there are symptoms, they pass off within 24 hours or sooner, but in about 30% of cases, players may have ongoing problems such as headaches or dizziness that extend beyond a few months.

It is generally agreed that players who have experienced concussion symptoms no matter how short-lived should not return to play for at least a number of weeks (23 days for amateurs and 21 days for professionals). During this time complete rest from all activities is recommended for an initial phase, then a graduated return to play programme is instituted.

At this time, the long-term consequences of repeated concussion are unknown but there are concerns that it may lead to long-term brain health problems. It has been known since the late 1960s that about 17% of boxers are subject to the onset of dementia earlier than expected; this condition has been called 'Dementia Pugilistica' after the old Latin name for fist-fighting.

Recently, similar concerns have been expressed about head injuries arising from American Football, and there are ongoing studies into those who have played sports like rugby. There is still a lot to understand about how head injuries cause symptoms in the first place and then how they may contribute to the development of dementia. For the moment, caution is advised at all levels of contact sports, and increased resources and rule changes may be required to make sure that such games are as safe as possible.



Workbook

Please see page 63 of the workbook for related activities.

Information, opportunities and resources



Brain health resources

Hello Brain

Hello Brain is funded by the European Commission to promote brain health research and healthy ageing. Hello Brain provides user-friendly information about how to keep your brain healthy.

For more information about Hello Brain, please see:

- › Website: <http://www.hellobrain.eu/en>

Workbook

Please see page 63 of the workbook for related activities.



Resources to help somebody you know who is affected by alcohol

Alcoholics Anonymous Ireland (AA)

If you are struggling with problem drinking or alcoholism, AA is an organisation that helps both men and women, young and old, to overcome their alcoholism. The only criterion for joining the AA is that you want to give up your problem drinking. Members meet in groups where they support and motivate each other. The AA provides access to counsellors, psychologists and doctors to help you on the road to recovery.

- › Website: <http://www.alcoholicsanonymous.ie/>

Help for family and friends

Al Anon

Al Anon provides support for family and friends and those affected by problem drinkers.

- › Website: <http://www.al-anon-ireland.org>

Anon Alateen

Anon Alateen helps young people aged 12–17 years old who have been affected by problem drinking. Young people share their experiences and talk to other young people who are going through similar situations.

- › Website: <http://www.al-anon-ireland.org>

Resources to help somebody you know who is affected by drug use

Helpline

The HSE offers a free and confidential drug and alcohol helpline if you would like to talk to somebody about drug and alcohol problems. Your phone call will be treated in the strictest confidence and you don't have to disclose your name. Alternatively, you can call Childline on 1800 66 66 66.

- HSE Helpline: 1800 459 459

Support groups in the community

There are lots of different support groups in communities all around Ireland who help and support people who want to give up their drug habit or who are concerned about friends or family members who are using drugs.

For more information on groups in your community, please see:

- Website: <http://www.services.drugs.ie/>

M O D U L E

4

What is Dementia?

.....



Learning outcomes

Students will learn about

Students will be able to

What dementia is

- Identify what dementia is.
- Demonstrate how memory is affected by dementia.

How dementia affects a person

- Give examples of how dementia can affect a person.
- Discuss the impact of dementia on a person living with dementia and their family.

How they can help a person living with dementia

- Demonstrate how to respond to a person living with dementia.

Information, opportunities and resources

- Highlight services and supports in the community for a person living with dementia and their family.

Wellbeing in Junior Cycle

This module can be integrated into Wellbeing in Junior Cycle.

The six indicators for well-being as set out in the National Council for Curriculum Assessment (NCCA) Guidelines for Wellbeing in Junior Cycle are:

- | | | |
|----------------------|--------------------|--------------------|
| 1 Active | 3 Connected | 5 Respected |
| 2 Responsible | 4 Resilient | 6 Aware |

This module could help support students to become more:

Responsible

- › Do I take action to protect and promote my well-being and that of others?

Connected

- › Do I feel connected to my school, my community and the wider world?
- › Do I appreciate that my actions and interactions impact on my own well-being and that of others, in local and global contexts?

Resilient

- › Do I know where I can go for help?
- › Do I believe that, with effort, I can achieve?

Respected

- › Do I feel that I am listened to and valued?
- › Do I show care and respect for others?

Aware

- › Am I aware of my thoughts, feelings and behaviours and can I make sense of them?
- › Am I aware of what my personal values are and do I think through my decisions?

Other possible links to Junior Cycle and Transition Year curricula

This module can also be integrated into Junior Cycle Civic, Social and Political Education (CSPE), Social, Political and Health Education (SPHE) and other relevant Transition Year subjects and Transition units (TU).

What is Dementia?

Dementia is a Latin word and it means 'without mind'. It has been in use for hundreds of years. Dementia is not a mental illness nor is it contagious; it is an umbrella term that describes lots of conditions that damage a person's brain. There are close to 100 different types of dementia and Alzheimer's disease is one type. On 18 December 2014, Taoiseach Enda Kenny launched the National Dementia Strategy. The strategy aims to improve the lives of people living with dementia in Ireland, both now and in the future.

Do all old people get dementia?

No, dementia is not a normal part of growing old, so not everybody will get dementia. The older you are, the higher chance you have of developing dementia, but it is not inevitable.

Is there a cure for dementia?

At the moment there is no cure and no vaccination against dementia although there are scientists and researchers around the world working very hard to try to find a cure. The Dementia Discovery Fund was established in 2015 and some of the most influential pharmaceutical companies like GlaxoSmithKline, Johnson & Johnson and Pfizer are cooperating to try to find a cure by 2025.

How many people in Ireland live with dementia?

Older age is generally the biggest risk factor for developing dementia. In Ireland, there are an estimated 55,000 people living with dementia, and this is expected to rise to 94,000 by 2031 and 152,000 by 2046 (Pierce et al., 2014).

I've heard young people can have dementia too, is this true?

Yes, this is true, but it is quite rare. In Ireland, there are an estimated 4,000 people living with dementia who are aged under 65. For young people who have dementia it can be very difficult; they may still wish to continue working but may have to retire early; they may have young children, or they may be looking after their older parents.

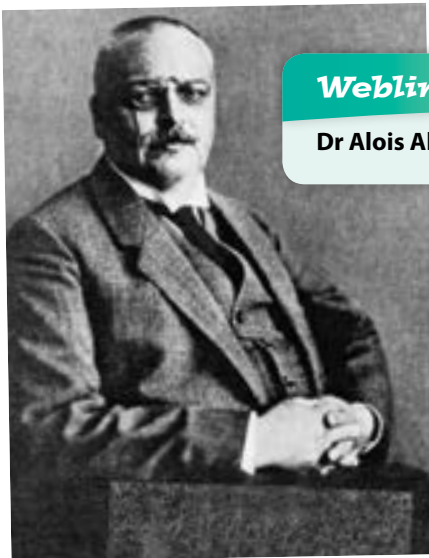


I've heard a lot about Alzheimer's disease; is it dementia too?

The most common type of dementia is Alzheimer's disease, and over 50% of people living with dementia have Alzheimer's disease.

Why is Alzheimer's disease called Alzheimer's disease?

On 14 June 1864, Alois Alzheimer was born in the Bavarian town of Marktbreit. He studied medicine and obtained his medical degree in 1887. Dr Alzheimer went to work in Frankfurt where he studied psychiatry. In 1901, Dr Alzheimer visited a patient called Auguste Deter who had memory lapses and language problems. Dr Alzheimer diagnosed Ms Deter with what we now know as early-onset dementia, which is dementia in people who are under 65 years of age. A colleague of Dr Alzheimer's called Emil Kraepelin, with whom he worked in Munich, named the condition we now know as Alzheimer's disease after him.

**Weblink****Dr Alois Alzheimer**

Dr Alois Alzheimer

**Weblink****Auguste Deter**

Auguste Deter

What causes Alzheimer's disease is still a puzzle waiting to be solved. We know that it mostly affects people aged over 65 years old, but genetics, lifestyle and environment also have a role to play.

Are all dementias Alzheimer's disease?

While Alzheimer's disease is the most well-known and common type of dementia, it is not the only one. There are over 100 different types of dementia, including vascular dementia where the brain is damaged because of a stroke or a number of smaller strokes; Lewy body dementia where abnormal structures develop in brain cells; and frontotemporal dementia where the frontal and temporal parts of the brain are damaged.

All of these different types of dementia will affect people in a different way, so it's important to remember that every person is unique.

WHAT IS DEMENTIA?

Classroom discussion

In 2014, the Alzheimer's Society, UK, made a short film called *Small changes can help make a dementia friendly community*. The film has two parts, the first (0.00–2.25 minutes) shows how Mary, who is living with dementia, encounters people in her community. Students should watch this prior to studying the section 'What is it like for people who live with dementia?'

The second part (2.25–3.35) illustrates how a little time, consideration and patience can make a difference to people living with dementia. Students should watch this prior to studying the section 'What you can do to help'.

The link to this film is in the video clips section in Additional Teaching Resources.

**Videos**

See page 56.

**What is it like for people who live with dementia?**

The most important thing to remember is that people with dementia are the same as you and I. Yes, they might be a little older and their brain doesn't work as well as it once did, but they are normal people who also have good and bad days just like you do.

People living with dementia can still do lots of things; they work, drive, cook, clean and look after themselves, especially in the very early stages of the condition. Dementia can affect people's memory, language and behaviour. Let's take a look at how dementia might affect some of these.

Memory

The reason why some people with dementia find it difficult to remember your name, or what day it is, is because dementia affects short-term memory.

Think of a hole in your coat pocket; each time you put something in there, like your keys or mobile phone, it just falls out again. That's how dementia affects your short-term memory. No matter how much information a person takes in during the day, the information just goes right through the holes in their brain and they just can't remember it when they need to.

Their memory for everyday events may be a little foggy but their memory for events that happened a long time ago is often very good and it's really interesting to listen to their stories from the past. You never know, you might learn something that your history book hasn't told you yet.

What you can do to help

Take photographs of you and your relative and make a photograph album for them of all the good times that you shared together. You could also include photographs of the past in order to prompt conversation. This is an activity the entire family can get involved in.

Sometimes people living with dementia can find it difficult to find their way around their home or, for example, they might forget where to find the teabags if they'd like a cup of tea. If this is something you have noticed, then it might be a good idea to remove the cupboard door where the teabags are stored so that the person can easily see where the teabags are, or move them to a place where they are more visible. If you'd like to label the teabags that would also be a very good idea.



You could use memory aids such as post-it notes, phone reminders, checklists and calendars. All of these will help the person to remember messages or appointments they have throughout the day.

Classroom discussion

In 2015, Dementia Training Study Centres, Australia, produced a video, *Kids4Dementia*, as part of a classroom-based dementia education programme for children in primary school. The film shows children and grandchildren of people living with dementia talking about what it is like to have a relative who is living with dementia.

Watch *Kids4Dementia: What is the one memory you wouldn't want to forget* after the section 'Memory'.

The link to this film is in the video clips section in Additional Teaching Resources.



Videos

See page 56.



Language

People living with a dementia can sometimes have problems following conversations. They might forget certain words they would like to use or they may mix up the meaning of words. They might also repeat themselves quite a lot and this often happens because the person has a memory impairment and they just can't remember what they said previously.

All of these situations are quite common, but it doesn't mean you should stop having these conversations – they might just be a little different from now on. Here are some tips to help you.

WHAT IS DEMENTIA?

What you can do to help

- › Speak slowly and carefully
- › Use plain language
- › Limit distractions – so, turn off the TV/radio when having a conversation
- › Discuss one topic at a time
- › Be patient and allow the person time to speak
- › Don't give complicated instructions
- › Repeat what you've said if necessary



Classroom discussion

Watch *Kids4Dementia: What is it like having a parent or grandparent with dementia* after the section 'What you can do to help'.

The link to this film is in the video clips section in Additional Teaching Resources.



Videos

See page 56.



Behaviour

If you have a close relative who has dementia and he/she forgets your name or shouts at you or behaves in a strange way, it doesn't mean they love you any less or that you are responsible, it's just the way their dementia is affecting their brain.

Sometimes the person might find it difficult to control their emotions and their mood might change, so they might cry or become upset when there may not be any particular reason for this. Sometimes people with dementia can feel very scared, overwhelmed or tired and this can manifest in lots of unusual behaviours.

What you can do to help

We all have good and bad days, but for a person living with dementia, sometimes their bad days are really bad days and their behaviours might reflect that. If the person feels sad and wants to wear their favourite hat inside because it reminds them of happier times then it's okay to do that. It might seem strange to you but it makes perfect sense to the person with dementia.

If a person living with dementia is having a bad day you might ask them if they would like to go for a walk or to watch their favourite movie, listen to their favourite music or play their favourite game.

If you feel sad or upset about anything we've talked about so far, talk to your parents, a relative or a close friend who you know will understand about how you are feeling. It is completely normal to feel like this, so don't worry. What's happening to the person with dementia is not your fault and, while you will not be able to cure the person with dementia, there are lots of little things that you can do to help.

Human rights and the voice of the person living with dementia

People with dementia have the same human rights as every other citizen. Around the world, people who are living with dementia are involved in promoting awareness of dementia, advocating for their human rights and influencing policy.

In Ireland, the Irish Dementia Working Group is a national advocacy group that ensures that the voice of people with dementia is heard. The group participates in policy debates, research, peer support and also uses the media to raise awareness and voice their opinions.

In 2016, the Alzheimer Society of Ireland and the Irish Dementia Working Group published the first Charter of Rights for People with Dementia. This document highlights the equal rights of people living with dementia.

The charter can be found in the student workbook on page 7.

Information, opportunities and resources



The Alzheimer Society of Ireland

The Alzheimer Society of Ireland is a registered charity that supports people living with dementia and their families by providing support services such as respite care, day care centres, advocacy and family carer training. It also operates the Alzheimer National Helpline, which is an information service for people who would like to know more about dementia and what services and supports are available in their community.

- Helpline: 1800 341 341
- Website: <http://www.alzheimer.ie>
- Address: National Office, Temple Road, Blackrock, Co. Dublin

Workbook

Please see page 64 of the workbook for related activities.



The Alzheimer Café

The Alzheimer Café provides opportunities for people with dementia and their families to come together in a relaxed and informal atmosphere for tea, coffee, cake and a chat. The service is provided free of charge and there are now lots of Alzheimer Cafés right around the country.

- Website: <http://www.alzheimercafe.ie>

Dementia Friendly Ireland

Dementia Friendly Ireland is one of the six campaigns that will implement the National Dementia Strategy. The aim of the campaign is to increase awareness, knowledge, and understanding about dementia and to help make society more inclusive for people living with dementia.

If you would like more information about the work being undertaken by Dementia Friendly Ireland, please see:

- Website: <http://www.hse.ie/eng/services/list/4/olderpeople/dementiafriendly/>

WHAT IS DEMENTIA?

Dementia Services Information and Development Centre

Dementia Services Information and Development Centre (DSIDC) is based in Mercers Institute for Successful Ageing, St James's Hospital, Dublin. It is a national centre that provides education and training for both healthcare professionals and family carers, undertakes psychosocial research and also offers an information and consultancy service.

If you would like more information about Dementia Services Information and Development Centre, please see:

- › Website: <http://www.dementia.ie>
- › Phone: 01 416 2035
- › Email: dsidc@stjames.ie

Family Carers Ireland

Family Carers Ireland is an organisation that supports and advocates on behalf of Ireland's 200,000 family carers, many of whom look after relatives who are living with dementia.

If you would like more information about Family Carers Ireland, please see:

- › Website: <http://familycarers.ie/>
- › Phone: 1800 240724

The Irish Dementia Working Group

The Irish Dementia Working Group is a group of people living with dementia who work to raise awareness about dementia. Since the group was founded in 2013, they have spoken both in Ireland and in Europe and they are also represented on the EU Working Group of People with Dementia.

If you would like more information about the Irish Dementia Working Group, please see:

- › Website: <https://www.alzheimer.ie/Get-Involved/Campaigning/Advocacy.aspx>
- › Phone: 01 207 3813

M O D U L E

5

Perceptions of Dementia

.....



Learning outcomes

Students will learn about

Students will be able to

Our perceptions of dementia

- Discuss their feelings and attitudes about dementia.

How dementia is represented in the media

- Provide examples of how dementia is portrayed in the media and by others.

Wellbeing in Junior Cycle

This module can be integrated into Wellbeing in Junior Cycle.

The six indicators for well-being as set out in the National Council for Curriculum Assessment (NCCA) Guidelines for Wellbeing in Junior Cycle are:

1 Active

3 Connected

5 Respected

2 Responsible

4 Resilient

6 Aware

This module could help support students to become more:

Responsible

- Do I take action to protect and promote my well-being and that of others?

Connected

- Do I feel connected to my school, my community and the wider world?
- Do I appreciate that my actions and interactions impact on my own well-being and that of others, in local and global contexts?

Resilient

- Do I know where I can go for help?

Respected

- Do I show care and respect for others?

Aware

- Am I aware of my thoughts, feelings and behaviours and can I make sense of them?
- Am I aware of what my personal values are and do I think through my decisions?

Other possible links to Junior Cycle and Transition Year curricula

This module can also be integrated into Junior Cycle Civic, Social and Political Education (CSPE) and other relevant Transition Year subjects and Transition units (TU).

Perceptions of Dementia

Classroom discussion



How are these images connected to dementia?
Do you recognise any of the images?

Image 1: Dementia mostly affects older people. Pictures of older people are often used in media campaigns and by organisations around the world that help and advocate for people with dementia.



Image 2: A group of 11–14 year olds were interviewed for a British study and made repeated references to the dementors in Harry Potter when describing people with dementia. Dementors are the prison guards of Azkaban and they feed on human happiness and hope. They also use the dementor's kiss to take the human soul from their victims. Once this happens, it's irreversible and all that's left is a body without its soul.

Classroom discussion



Why do you think this group of young people referred to the dementors so often when talking about dementia?

PERCEPTIONS OF DEMENTIA

Image 3: In 2014, Julianne Moore won the Best Actress Oscar for her portrayal of linguistic professor Dr Alice Howard whose family are put to the test when she is diagnosed with early-onset Alzheimer's disease. Most people think that dementia only affects older people; *Still Alice* illustrates that it's also a condition that affects younger people.



Image 4: Another film, *Robot and Frank*, tells the story of Frank, a former cat burglar, and his robot. Frank doesn't really take notice of his memory lapses; it's only when we see how it affects his family that we really get an insight into Frank's life. The film also raises the question of how society looks after our older people. Can technology be the solution to the challenges we will face as a result of the world's increasingly older population?

Living well with dementia

Read Ronan's story and complete the accompanying workbook activity.

Ronan Smith was diagnosed with dementia when he was 56 years old; here Ronan describes his 'adventures with Alzheimer's disease'.

This is, in fact, Lap 2 in my adventures with Alzheimer's disease, the most common form of dementia. I suppose the main feature of my particular experience with the disease is its two very distinct phases, firstly, Lap 1, as a companion and carer of a particular kind to my father who suffered and died from it in the 1980s, and then, secondly, my own diagnosis in 2014 as a person living with the disease 25 years later, and how I am adapting to life with that now.

I had learned quite a lot on Lap 1, so I was able to engage quickly with what had to be done. The main thing was to adopt a positive attitude towards doing what needed to be done. I came up with a mantra, a reminder to keep saying to myself, 'prepare for the probable, work for the possible, and hope for the future'. There are indeed practical things that need to be done to anticipate the probable progression of the disease, then there are lifestyle changes that can help to slow the progression, and, finally, there is reason to hope, as so much research is being done to find effective treatments.

I'd worked with the Alzheimer Society of Ireland during my father's illness and, following my own diagnosis, I decided to become involved again. I'm a member of the Irish Dementia Working Group, a group of people living with the condition who give talks on radio, television, in the papers, and hopefully contribute in various ways to the important work that is being done to educate all of society about how it is possible to live well with dementia.

It is really important to me that we move away from the fear and discomfort that can surround dementia, and that we are comfortable to talk to and engage with people with dementia. In my experience, young people can often be more ready and willing to do this than older people – so here's a chance for you to lead by example!



Workbook

Please see page 66 of the workbook for related activities.

References and Additional Teaching Resources

Module 1

Ageing

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[Accessed 25 July 2016]
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<http://www.who.int/healthinfo/survey/ageingdefnolder/en/> [Accessed 25 July 2016]

Ageism

- › Challenging ageism
<https://www.ageaction.ie/how-we-can-help/generations-together/do-something>
- › What is ageism?
<http://ageismhurts.org/what-is-ageism>

The World's Ageing Population

- › Global AgeWatch Index. Global populations. Available from
https://www.ageinternational.org.uk/Documents/Global_AgeWatch_Index_2015_HelpAge.pdf
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- › The World Health Organization. Life expectancy. Available from
http://www.who.int/gho/mortality_burden_disease/life_tables/situation_trends/en/
[Accessed 19 November 2015]

Retirement

- › Active Retirement Ireland
<http://www.activeirl.ie>
- › Retiring from work
http://www.citizensinformation.ie/en/employment/retirement/retiring_from_work_in_ireland.html

Pensions

- › Age Action. (2016). Income Security: Why it matters for older people everywhere. Dublin. Available at:
https://www.ageaction.ie/sites/default/files/attachments/age_action_income_security_booklet_jan_2016.pdf [Accessed 25 July 2016]
- › Age Action. *Issues for Older People in Developing Countries*. Available at:
<https://www.ageaction.ie/how-we-can-help/ageing-in-the-developing-world/issues-older-people>
[Accessed 25 July 2016]

Module 2

- › Brain basics
http://www.ninds.nih.gov/disorders/brain_basics/know_your_brain.html
- › Brain: The Inside Story with teachers' notes
<http://braintheinsidestory.co.uk/>

Memory

- › <http://www.human-memory.net/>

Module 3

- › Brain health resources
<http://www.hellobrain.eu/en>
<http://www.alzheimer.ie/brain-health.aspx>
<http://yourbrainmatters.org.au/>
- › Brain health and dementia risk reduction resources
<http://dementia.ie/news-events/news/brain-health-and-dementia-risk-reduction>
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[Accessed 25 February 2016]

Alcohol

- › http://alcoholireland.ie/home_news/binge-drinking-takes-hold-for-irish-teens/
- › <http://alcoholireland.ie/facts/>
- › www.drugs.ie/downloadDocs/2012/articles/awards/18-20%20Amy%20Lewis%20Winner.pdf
- › My World Survey (2012) National Study of Youth Mental Health in Ireland. Available from <http://www.ucd.ie/t4cms/MyWorldSurvey.pdf> [Accessed 13 May 2015]

Drugs

- › <https://www.drugabuse.gov/drugs-abuse/commonly-abused-drugs-charts>
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Modules 4 and 5

- › Alzheimer Society of Ireland. (2016). *A Charter of Rights for People with Dementia*. Dublin. Available at: <https://www.alzheimer.ie/getattachment/About-Us/Policy/Human-Rights/A-Charter-of-Rights-for-People-with-Dementia/Charter-of-Rights-for-People-with-Dementia.pdf.aspx>
- › Children talking about dementia a powerful awareness tool
<https://www.theguardian.com/society/2015/feb/03/children-dementia-cbbc-grandparents-mr-alzheimers-and-me>
- › Five tips on how to talk to children about dementia
theconversation.com/five-tips-on-how-to-talk-to-kids-about-dementia-46924
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<http://www.dementiaresearch.org.au/kids4dementia.html>
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<https://www.alzheimer.ie/Living-with-dementia/I-have-Dementia/I-am-Under-65/Telling-Children-and-Young-People.aspx>
- › Still Alice: People with dementia give their verdict
<https://www.theguardian.com/film/2015/feb/10/still-alice-alzheimers-accurate-dementia-sufferers-verdict>
- › What is dementia?
<http://www.dementia.ie/information/overview/information-overview>
<https://www.alzheimer.ie/About-Dementia.aspx>

ADDITIONAL TEACHING RESOURCES

Video Clips

- › Alcohol and the teenage brain
https://www.youtube.com/watch?v=g2gVzVIBc_g
- › Alzheimer's Society UK. *Small changes can help make a dementia friendly community.*
<https://www.youtube.com/watch?v=Fz8ACEu7Lho>
- › Kids4Dementia: *What is the one memory you wouldn't want to forget?*
https://www.youtube.com/watch?v=fxWzOdwv6_0&index=3&list=PLAwhBH-4GO5iHkEggqw4ruVpki-Z1GreE
- › Kids4Dementia: *What is it like having a parent or grandparent with dementia?*
<https://www.youtube.com/watch?v=pWsUeapJ57k&list=PLAwhBH-4GO5iHkEggqw4ruVpki-Z1GreE&index=2>
- › Mr Alzheimers And Me follows three young people who tell their very personal stories of living with grandparents who have dementia.
<https://www.youtube.com/watch?v=Ap-995wsbHg>
- › The video of Stoke Damerel Community College in the UK shows how some schools have embedded dementia across the whole curriculum, and the impact it can have on students
<https://www.youtube.com/watch?v=ITLP3kL-juc>

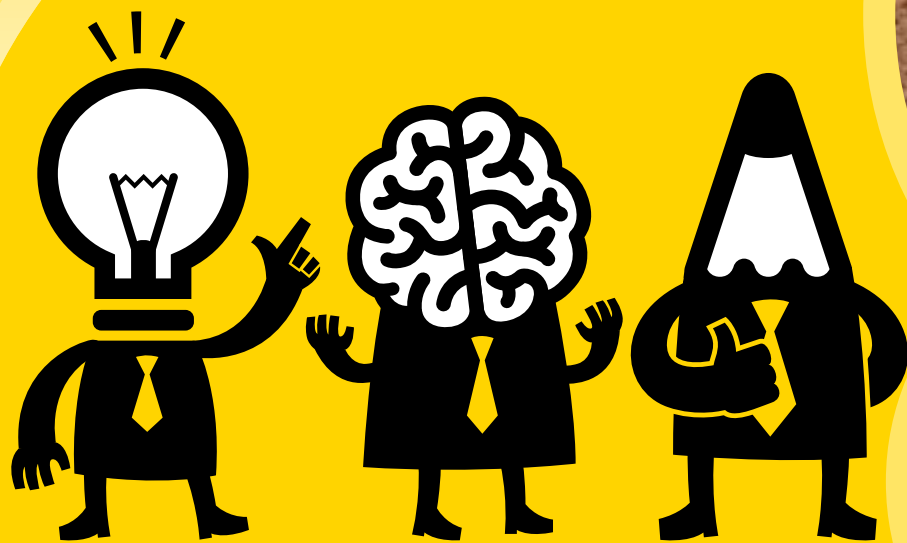
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THE BRAIN

from the fantastic to the forgetful

WORKBOOK



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First published 2016

Dementia Services Information and Development Centre
6th Floor, Mercer's Institute for Successful Ageing
St James's Hospital, James's Street
Dublin 8, D08 E9P6

www.dementia.ie

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Contents

MODULE	1	Growing Older	60
--------	---	---------------	----

MODULE	2	The Brain	62
--------	---	-----------	----

MODULE	3	Brain Health	63
--------	---	--------------	----

MODULE	4	What is Dementia?	64
--------	---	-------------------	----

MODULE	5	Perceptions of Dementia	66
--------	---	-------------------------	----

		Action Projects	68
--	--	-----------------	----

Growing Older

Ageism

Which of the following statements are true?

› Older people are past their sell-by-date.	True	False
› Older people cannot learn anything new.	True	False
› Elderly people are very grumpy and hard to talk to.	True	False
› All elderly people have bad memories.	True	False
› Once older people retire they have no worries.	True	False

The world's ageing population

Can you name five low-income countries and five high-income countries?

Low-income countries

- 1 _____
- 2 _____
- 3 _____
- 4 _____
- 5 _____

High-income countries

- 1 _____
- 2 _____
- 3 _____
- 4 _____
- 5 _____

Ireland's population and life expectancy

Life expectancy in Ireland has increased in the last 50 years.

Identify three reasons for this.

- 1 _____

- 2 _____

- 3 _____

Information, opportunities and resources

Match the descriptions with the organisation

Age Action Ireland

This organisation helps to reduce loneliness and social isolation through friendship.

Older and Bolder

This organisation supports, empowers and advocates for people who are retired.

Friends of the Elderly

This organisation promotes opportunities for older people to participate in areas such as physical activity and the arts.

Age and Opportunity

This organisation promotes the interests and views of older people and informs the Government of issues that are important to older people.

Active Retirement Ireland

This organisation advocates for older people and also encourages them to speak and act for themselves to bring about change.

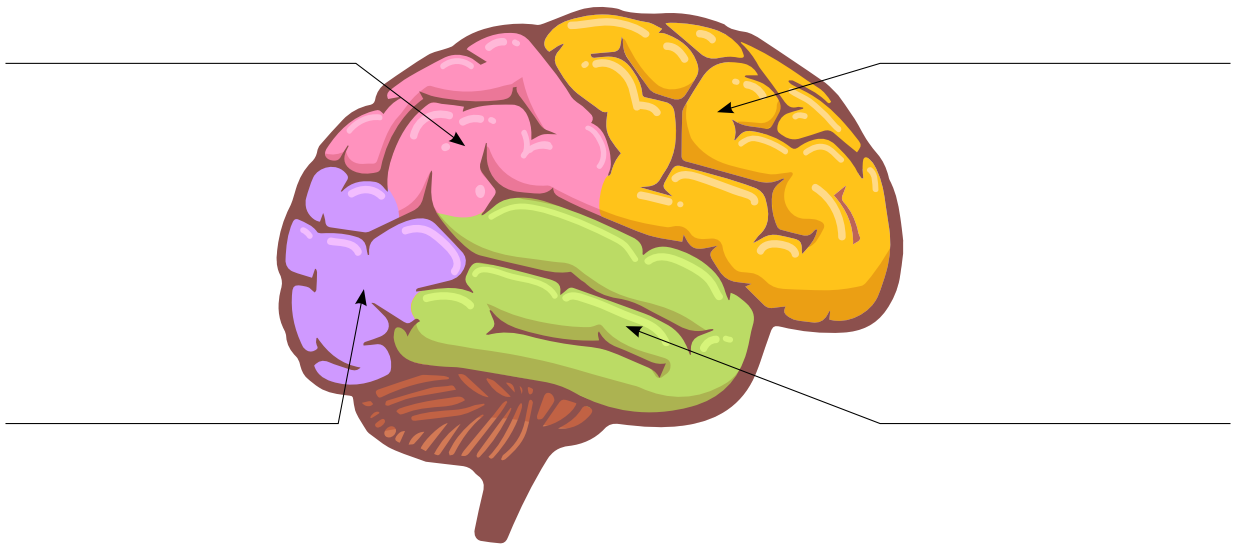
Senior Citizen Parliament

This organisation is comprised of eight non-governmental organisations (NGOs) who fight to combat ageism and campaign for the rights of older people.

The Brain

Where are my brain lobes?

In the image below, name each area of the brain.



What are the functions of each of these four lobes?

1 Frontal lobe

2 Temporal lobe

3 Parietal lobe

4 Occipital lobe

Brain Health

Raising awareness about brain health in your school

Design an information leaflet or a poster for your school to raise awareness among students and teachers about brain health and how you can look after your brains.



**HELLO
BRAIN**

The Hello Brain Challenge

Take the Hello Brain 100-day challenge and do something every day for your brain health.

The Hello Brain app is free to download and to use on your smartphone, or you can download a paper version from the website.

The challenge contains five 'Brain Buff' categories: physical, social, mental, attitude and lifestyle. Select a challenge from each of the 'buff' categories and track your progress through the 'Brainbow' visualisation on the app.

Tell your friends and family about the challenge and complete it together.

For more information, see:

<http://www.hellobrain.eu/en/gettheapp>

<http://www.hellobrain.eu/en/resources>

What is Dementia?

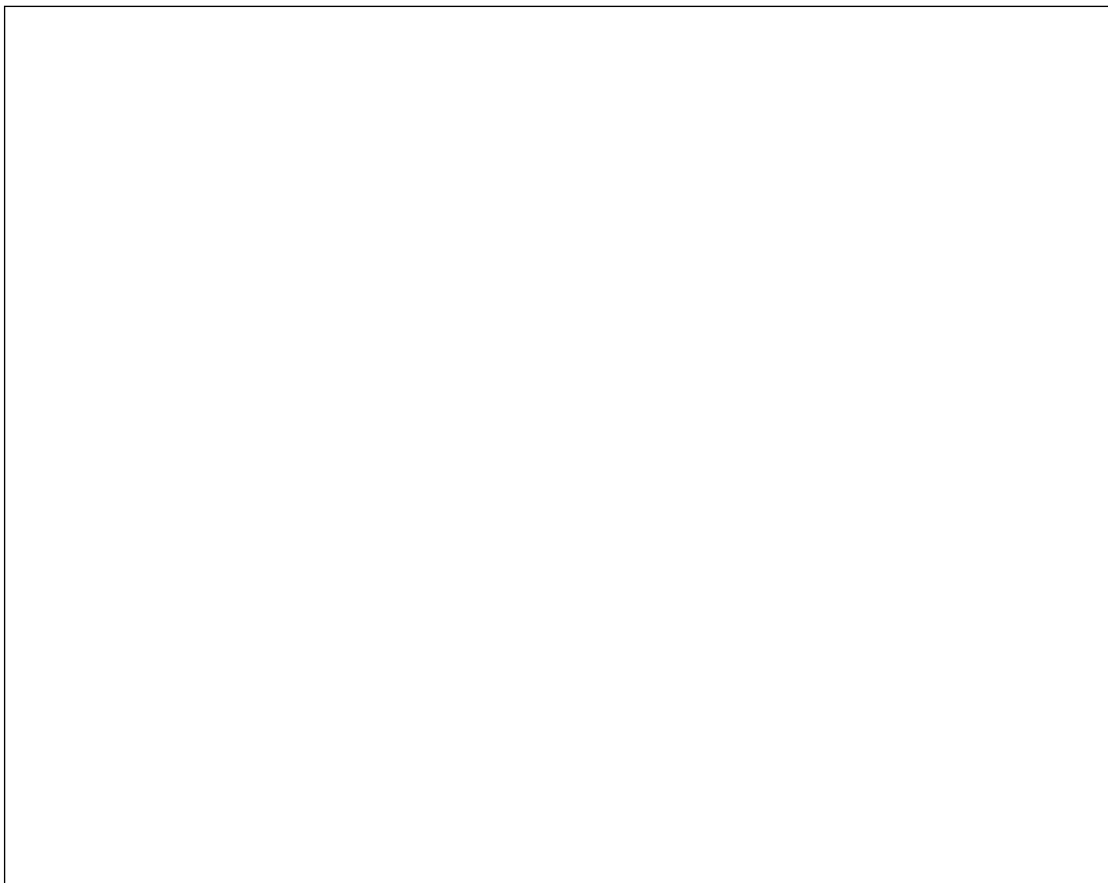
Human rights and the voice of the person living with dementia

Read the Charter of Rights for People with Dementia on page 7 and answer the questions below.

- 1 Is this a good charter?

- 2 Do you think that the charter will help people who are living with dementia in Ireland?

- 3 Make a human rights word cloud or collage for people living with dementia.





THE ALZHEIMER
SOCIETY of IRELAND

A Charter of Rights for People with Dementia

Participation

People with dementia have the right to be provided with accessible information and necessary supports to enable them to exercise their right to participate in decisions and policies which affect them.

People with dementia have the right to live as independently as possible with access to recreational, leisure and cultural life in their community.

People with dementia have the right to full participation in care needs assessment, planning, deciding and arranging their care, support and treatment.

Accountability

Public and private bodies, voluntary organisations and individuals responsible for the care and treatment of people with dementia should be held accountable for the respect, protection and fulfilment of their human rights and adequate steps should be adopted to ensure this is the case.

Non-discrimination and equality

People with dementia have the right to be free from discrimination based on any grounds such as age, disability, gender, ethnicity, sexual orientation, religious beliefs, membership of the travelling community, civil and family status.

Empowerment

People with dementia have the right to access appropriate levels of care providing protection, rehabilitation and support. People with dementia have the right to help to attain and maintain maximum independence, physical, mental, social and vocational ability, and full inclusion and participation in all aspects of life.

People with dementia have the right to access opportunities for community education and lifelong learning.

People with dementia have the right to health and social care services provided by professionals and staff who have had appropriate training on dementia and human rights to ensure the highest quality of service.

Legality

People with dementia have the right, regardless of diagnosis, to the same civil and legal rights as everyone else. Where someone lacks capacity to take a specific action or decision due to their cognitive condition, anyone acting for them must have regard for assisted decision making (capacity) legislation in Ireland.

Where rights are not observed, the right to seek remedy through effective complaint and appeal procedures.

EMAIL info@alzheimer.ie

PHONE +353 (0)1 207 3800

WEBSITE www.alzheimer.ie



The Alzheimer Society of Ireland, National Office, Temple Road, Blackrock, Co. Dublin, Ireland.

Charity registered number: CHY7868 / Reg No 102700

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Available at:

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Perceptions of Dementia

Living with Dementia

- 1** Now that you have been told a number of facts about dementia and you've read Ronan's story, has your opinion of dementia changed?

- 2** Please state why your opinion has changed and, if your opinion hasn't changed, please state why not.

Explore how dementia is portrayed in the media

- 1** Do you think that the newspaper headlines on page 9 accurately describe dementia?

- 2** Are these headlines misleading or informative?

- 3** What words or language have you heard that describe dementia?

Experts warn of a dementia 'time bomb' in the next 25 years

THE IRISH TIMES

One in three will suffer dementia study warns

THE TIMES (UK)

GPs to be paid for diagnosing dementia

THE TELEGRAPH (UK)

From preventing dementia to grey hair: why blueberries could be the best thing to ever happen to you

THE TELEGRAPH (UK)

Did police have to handcuff dementia patient?

THE DAILY MAIL (UK)

Dementia timebomb will hit 1.2 million

THE TELEGRAPH (UK)

Dementia is a living death for 700,000 Britons

THE GUARDIAN (UK)

Dementia is a modern-day plague which robs people of their identity and their dignity

THE IRISH MIRROR

Action Projects

Ideas for action projects

Volunteer

The Alzheimer Society of Ireland offers lots of ways you can get involved to help people living with dementia. You can volunteer or you can help with fundraising by hosting a Tea Day in your school or running the Mini-Marathon on behalf of the society. For more details, log on to <https://www.alzheimer.ie/Get-Involved.aspx>

Alzheimer Cafés are a safe and relaxed place where people with dementia and their families come together to share a cup of tea, some cake and to have a chat. Alzheimer Cafés are located throughout the country and they may look for volunteers. For more details, log on to <https://www.alzheimercafe.ie>

There are many intergenerational projects around Ireland; investigate what opportunities are available in your community to work with older people.

Help raise awareness

Undertake a survey in your school to find out how many students have a relative living with dementia or a survey to investigate if students and teachers know anything about dementia. Design a poster or information leaflet about dementia for your school to help raise awareness and become a dementia-friendly school.

Invite a member of the Irish Dementia Working Group to your class to talk to you about living with dementia. Prepare a speech you would make to welcome the person to your school.

BT Young Scientist

Do you have an innovative idea that could help people living with dementia? Your idea could have a big impact on the lives of nearly 55,000 people living with dementia in Ireland. If you do, then why not enter the BT Young Scientist Competition? For more details, log on to <http://btyoungscientist.com/>

Dementia Services Information and Development Centre
6th Floor, Mercer's Institute for Successful Ageing
St James's Hospital, James's Street
Dublin 8, D08 E9P6

www.dementia.ie



DEMENTIA SERVICES
INFORMATION AND
DEVELOPMENT CENTRE

*promoting excellence
in dementia care*