



Australia-ASEAN Academics Forum

Online education during Covid-19 and beyond.



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UNIVERSITY of
TASMANIA

WICKING

Dementia Research
and Education Centre



An online learning strategy to scale
up dementia educational nationally
and globally



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Dementia

- Umbrella term/syndrome
- Not 'normal ageing'
- Change in brain function, including thinking, behaviour and personality
- Linked to pathological changes in the brain ie **they are diseases!**

Four major diseases that cause dementia:

- Alzheimer's disease
 - Frontotemporal dementia
 - Lewy body dementia
 - Vascular dementia
- + dozens more...

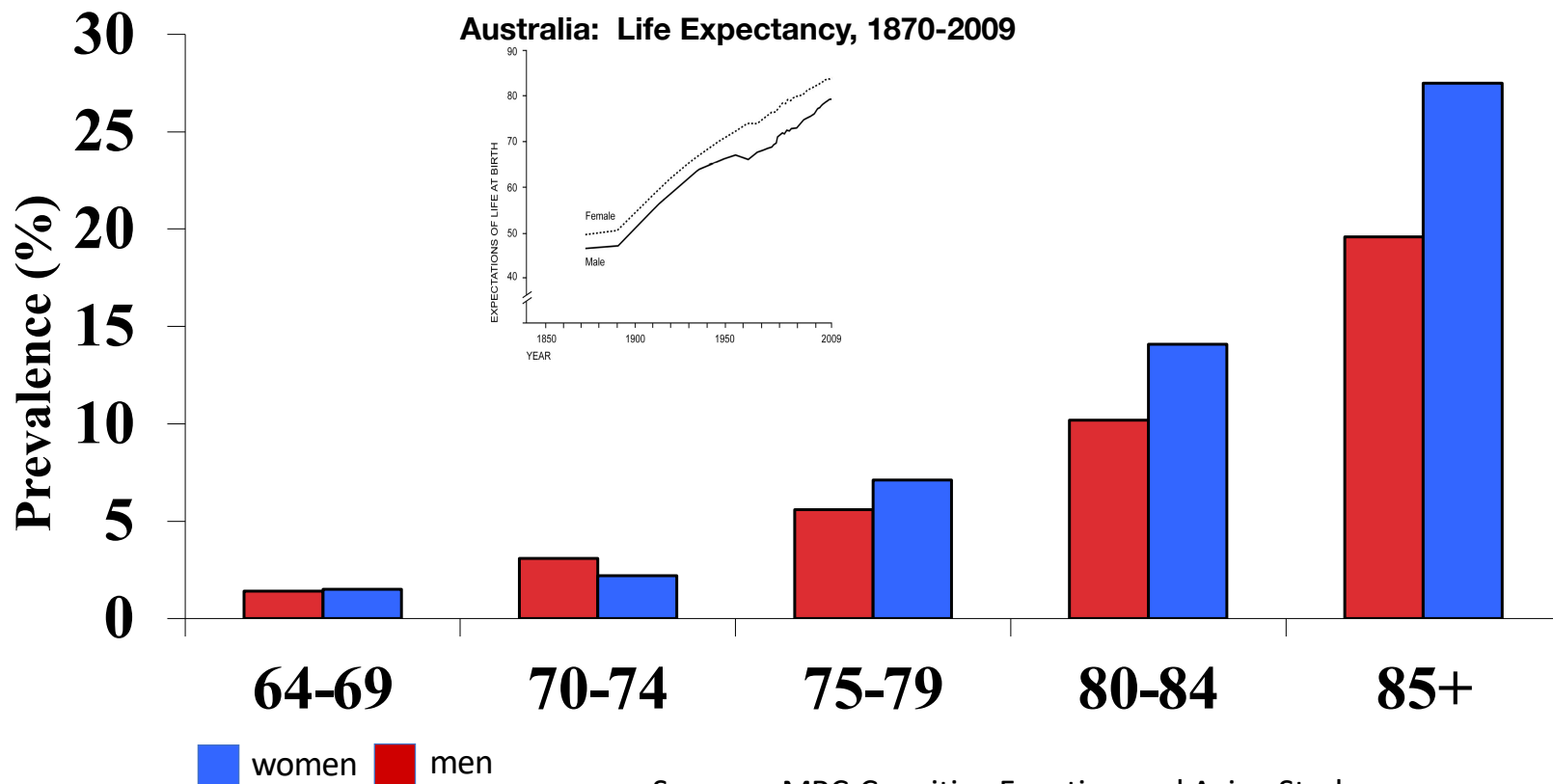
Dementia is a major Public Health issue of the 21st Century

2015 World Alzheimer Report (Alzheimer's Disease International)

- World population rapidly ageing
- Estimated 46.8 million living with dementia worldwide currently.
- 74 million by 2030.
- 131 million by 2050
- Fastest growth of dementia cases in low-middle income countries

Cause	2009	Rank	2019	Rank
Ischemic heart disease	22587	1	18244	1
Dementia	8280	3	15016	2
Stroke	11216	2	9891	3
Trachea/lung cancer	7786	4	8821	4
Chronic lower respiratory diseases	5984	5	8372	5
Colorectal cancer	5244	6	5410	6
Diabetes	4176	7	4967	7
Blood/lymph cancer	3811	8	4793	8
Influenza/pneumonia	1796	17	4124	9
Urinary system disease	3315	11	3903	10

Prevalence of Dementia by Age

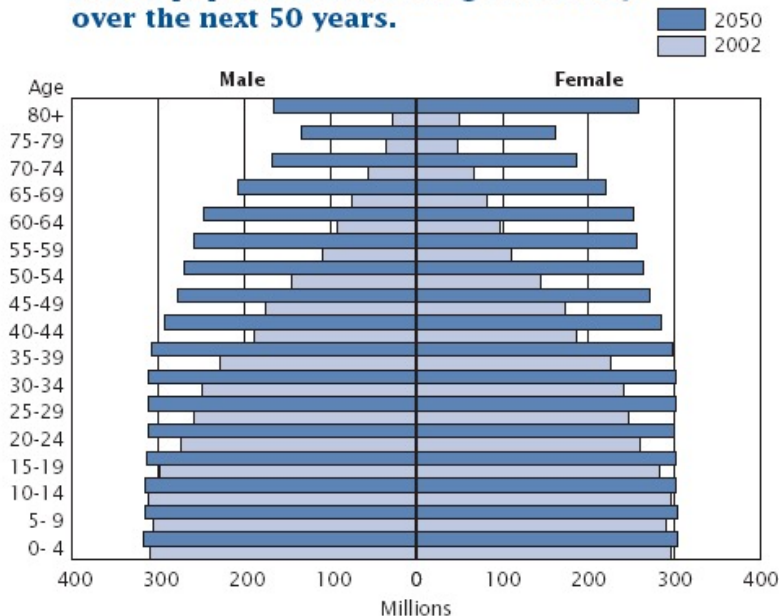


Source – MRC-Cognitive Function and Aging Study
Overall risk approx 6.6% over age 65 (95% CI 5.9-7.3)

Age-Gender Structure of World Population

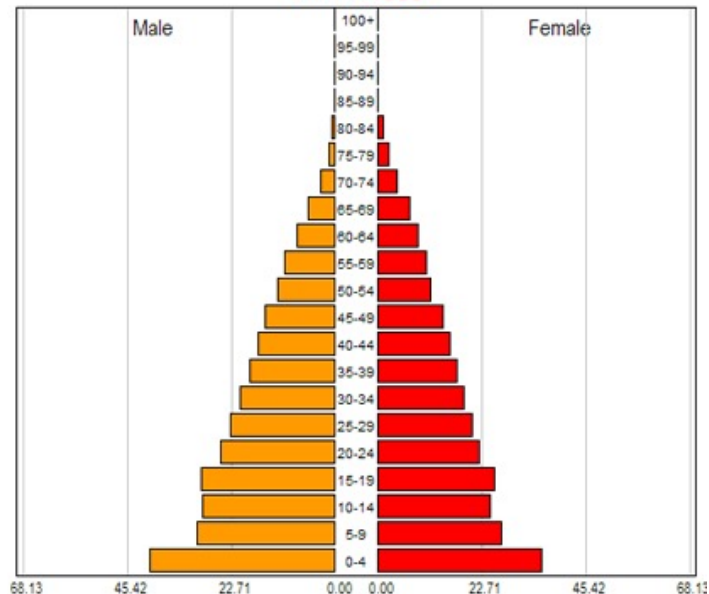
Figure 3.

Age-Sex Structure of World Population: 2002 and 2050
Global population will change markedly over the next 50 years.

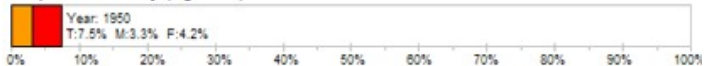


Source: U.S. Census Bureau, International Programs Center, International Data Base.

China: 1950



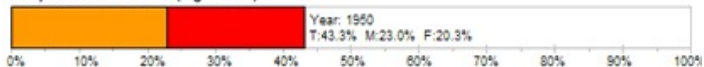
Proportion: Elderly (Age 60+)



Proportion: Working-age Population (Age 20-59)



Proportion: Children (Age 0-19)



Wicking Dementia Research and Education Centre

- Established in 2008
- Core funding from the JO and JR Wicking Trust (Equity Trustees)
- Multidisciplinary: Social scientists, neuroscientists, psychologists, geriatricians, neurologists, nurses, family doctors, speech pathologists, physiotherapists, occupational therapists, educational technologists, statisticians, data managers
- Educational programs: Massive Open Online Courses (MOOCs); Diploma, Associate Degree and Bachelor of Dementia Care; Diploma of Ageing Studies and Services; Graduate Certificate, Graduate Diploma and Master of Dementia
- Three major Research Themes
 - Care
 - Cause
 - Prevention



Why we do educational initiatives

- Health systems are not well oriented towards quality dementia care.
- Very little dementia content in health professional courses, and workforce training can be limited.
- Wicking Centre research showed dementia knowledge deficiencies in aged care workers, nurses, doctors and family carers.
- Limited educational resources that provide information in a systematic, evidence-based fashion.
- Some dementia risk is theoretically modifiable – how do we convince people to change behaviours?

Building Dementia Literacy

How can we reach people with dementia, family carers and health professionals, and the wider public, to provide them with education they can usefully apply?

Can an educational initiative decrease stigma of the condition, augment awareness in the community, and build dementia literacy and self-efficacy?



Addressing the knowledge gap at a 'mass' level

Developed the world's first MOOC on Dementia
(‘Understanding Dementia’) in 2013



Understanding Dementia MOOC – building dementia literacy - 7 week course

Module 1 – The Brain

- Normal Brain Anatomy
- Normal Brain Function
- Pathology of Dementia
- Future Directions of Research

Module 2 – The Diseases

- How is dementia different to normal ageing?
- Risk Factors
- Early Warning Signs
- Diagnosis
- Dementia Symptoms
- Medical Management

Module 3 – The Person

- Dementia Progression and Staging
- Living with Dementia
- Dementia Palliation
- Behaviours in Dementia
- Dementia Design
- Dementia-Friendly Communities
- Strategies and Therapies

UNDERSTANDING
DEMENTIA



Understanding Dementia MOOC

- Core content: interviews/video clips with people with dementia, carers, health care professionals and research experts.
- Activities: reflective notes, quizzes, case studies, scenarios, surveys, gameified learning, external links.
- Engagement/interaction: Discussions, application of learning relative to personal experience.
- Certificate of learning
- Opportunity to engage in research

What is a Palliative Approach?

Palliative care involves care that is targeted toward people who have been diagnosed with a life-limiting condition. Palliative care is often misunderstood as being of relevance to people with cancer only. People also commonly believe it is only focused on the very late, terminal stage of life-limiting conditions. However palliative care is not at all confined only to end of life, rather, it is appropriate at any age and at any stage in a serious illness such as dementia, and can be provided along with curative treatments for certain conditions.

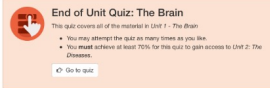
Palliative care is an active and dynamic approach aimed at relieving symptoms and maximising people's function and quality of life. It uses a multi-disciplinary approach that can include input from physicians, pharmacists, nurses, chaplains, diversional therapists, volunteers, social workers, psychologists, and other health professionals - along with the person receiving care and their family - in formulating a plan of care designed to relieve suffering in this case for those living with dementia and their family members.

Fran and Andrew now discuss why a palliative approach is relevant for people with dementia and their loved ones.



Trouble viewing this video? Read the text version.

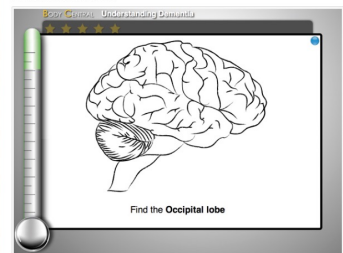
Unit 1 - The Brain - End of Unit Quiz



WICKING PRODUCTIONS UNDERSTANDING DEMENTIA UNIVERSITY OF TASMANIA

Challenges

When you've finished exploring the model, you can click the large Next button in the bottom-right corner to continue. We'll then challenge you with a game. Select Access Challenge to play it. There are many types of games in Body Central. One is a challenge to identify the various parts of the model. Simply select the parts of the model as each is named. If you're successful, you'll notice the mercury rise in the thermometer.



Another game is one where you are asked to enter the name of each highlighted structure.



Your Notes: Brain Pathology

After listening to the clip, write your own answer to the following question:

In what ways are changes seen inside neurons different when you compare Lewy Body Disease to Alzheimer's Disease?

Write your note here...

Save

Click to show feedback



Thought Tree: Cognition in Dementia

Help us to grow a thought tree about cognition in dementia:

After doing the above activity, you may have some insight into how people with dementia feel when undertaking certain tasks. Now imagine that, due to the disease process, you have lost insight into your condition, judgement, your ability to reason and empathy (the ability to understand and share the feelings of others). How might you behave?

Enter the Understanding Dementia Community Garden where we have planted the following thought:

"If I had dementia, I might show my frustration by..."

Go to Cognition in dementia thought tree

(This button will open the discussion area in a new window or tab)



Offering	Enrollees	Completion	Int'l
July 2013	9,486	3,612 (38%)	25%
March 2014	15,138	5,520 (32%)	32%
October 2014	23,615	7,875 (33%)	49%
August 2015	23,624	10,370 (44%)	37%
August 2016	20,321	8,552 (42%)	32%
July 2017	29,471	12,110 (41%)	34%
February 2018	22,529	8,731 (39%)	40%
July 2018	22,169	8,177 (37%)	33%
February 2019	25,403	9,738 (38%)	35%
July 2019	20,731	8,279 (40%)	32%
February 2020	27,639	12,227 (44%)	34%
July 2020	26,302	10,747 (40%)	36%
February 2021	27,981	ND	38%

293,303 enrollees (average ~ 39% completion)

Top international countries

United Kingdom

New Zealand

Canada

Unites States

Phillippines

Singapore



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Understanding Dementia MOOC

“Working in aged care I needed a better understanding of what the residents in my care were going through so that I could best deliver the care they required to live a fulfilled life. It also helps to educate families as to what their parents are going through, and I can only educate the family if I have an understanding of the deiease (sic) we are dealing with.”

“I am a paramedic and encounter people with all forms of dementia in my daily life. This has given me a great deal of food for thought in how I deal with and manage these patients. It has also given me the confidence to maybe impart some advice on patient's families in how they might provide a holistic approach to care.”



Understanding Dementia MOOC

Feedback surveys from Australian participants were evaluated from the UD MOOC 2020 S1 and S2.

Participants were invited to complete a feedback survey at the conclusion of the UDMOOC. Approximately half of those completing the UDMOOC also completed the Feedback survey.

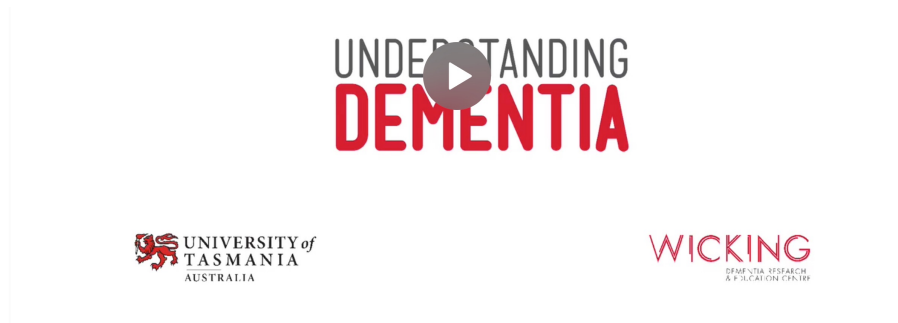
When asked if they had already applied what they had learned the vast majority of respondents (98%) agreed or strongly agreed that they had already implemented change.

“Caring for my mum with first stage dementia symptoms and being able to help educate my family on how best to care for her in the future.”

“Opening a discussion regarding dementia with a client regarding their cognitive changes, being more open, less guarded, because I feel more comfortable when discussing it.”

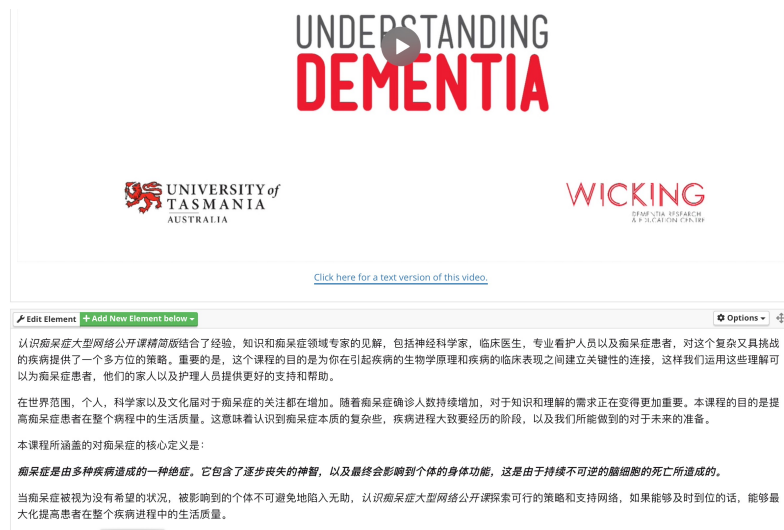


Understanding Dementia MOOC – Translations



[Click here for a text version of this video.](#)

Kurz *Dementia a jak jí porozumět* spojuje zkušenosti, znalosti a porozumění odborníků v problematice demence včetně neurovědců, lékařů a dalších klinických pracovníků, pečujících i osob trpících demencí, a nabízí mnohostranný přístup k této složité a náročné problematice. Důležité je, že Vás tento kurz seznámí se základy biologie onemocnění, která způsobují demenci, symptomy (příznaky) těchto onemocnění, a propojí je se způsoby, jakými lze tyto vědomosti využít k lepší podpoře a péči o osoby s demencí, jejich rodiny a pečující.



With Masaryk University



Understanding Dementia MOOC

Dementia Knowledge Assessment Survey (DKAS)

npj Science of Learning

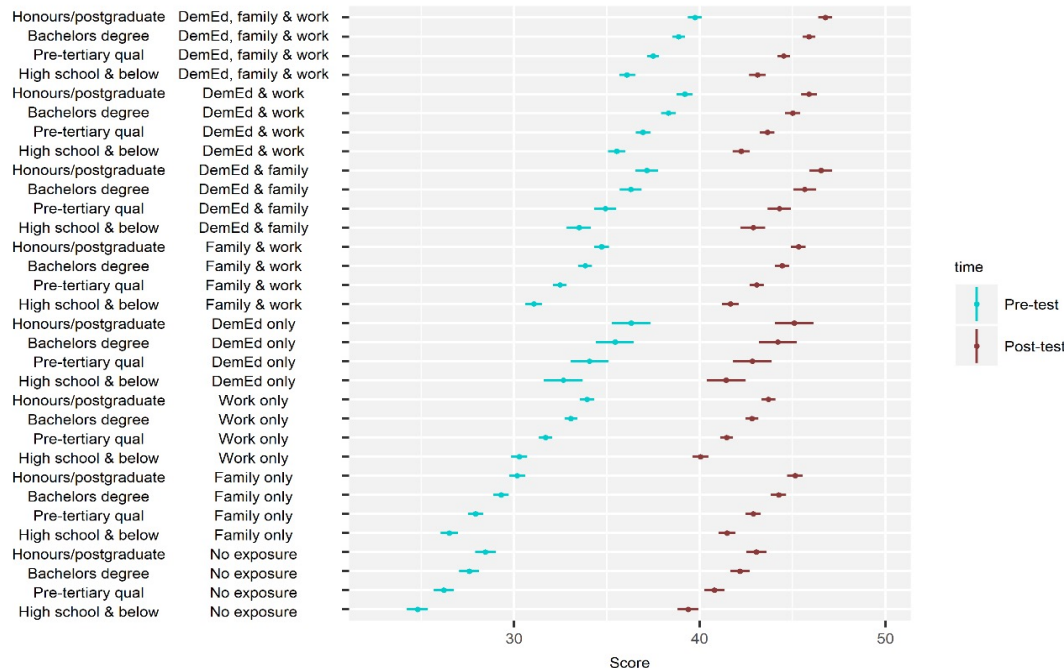
www.nature.com/npjscilearn

ARTICLE OPEN

Building dementia knowledge globally through the Understanding Dementia Massive Open Online Course (MOOC)

Claire Eccleston¹, Kathleen Doherty¹, Aidan Bindoff¹, Andrew Robinson¹, James Vickers¹ and Fran McInerney¹

N=4894

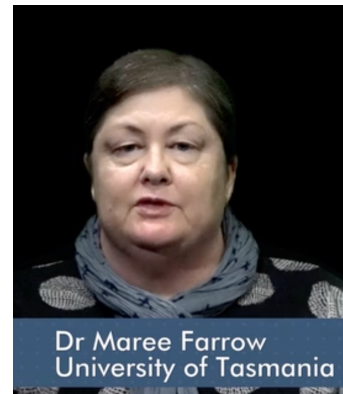
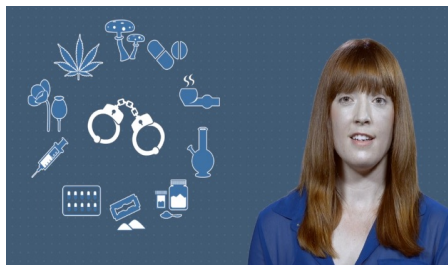
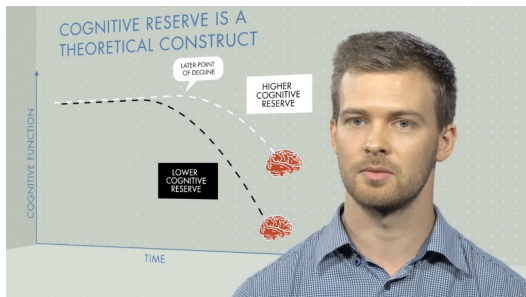


Preventing DEMENTIA



2016+ - 4 week MOOC

1. Can dementia be prevented?
2. It's not all in your head
3. A healthy and active mind
4. Interventions for prevention



Activity: Quiz 1

This is the first of three quizzes to test your understanding of the material from the Preventing Dementia MOOC.

This quiz covers all of the material in *Module 1* and *Module 2*

- There are 31 questions in total.
- You may attempt the quiz as many times as you like.
- You **must** achieve at least 70% for this quiz to gain access to *Module 3 - Dementia risk - it's not all in your head*

[Go to quiz](#)



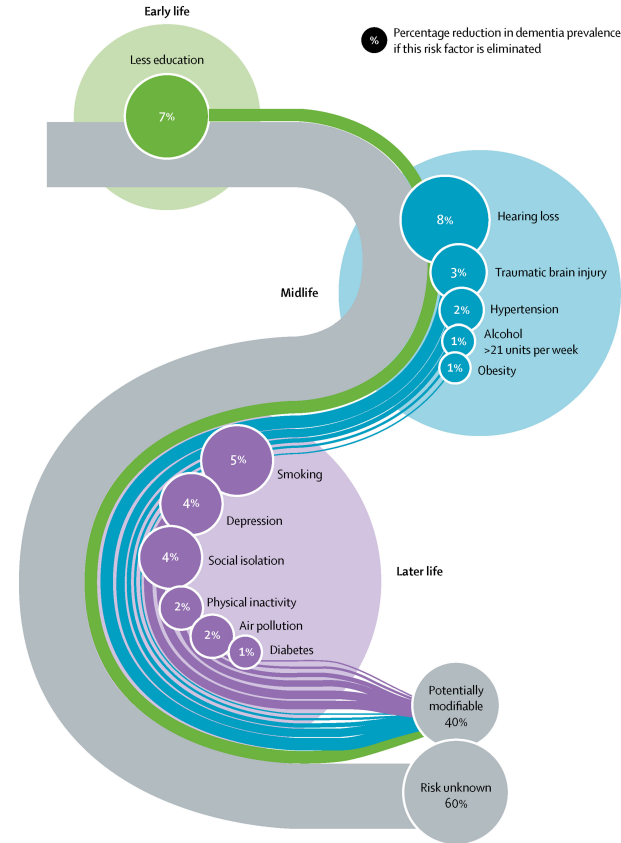
Dementia Risk

Most dementia risk associated with ageing – the older you are, the higher the risk.

Approximately 40% of dementia cases worldwide can be attributed to 12 potentially **modifiable** risk factors:

- Low educational attainment
- Smoking
- Physical inactivity
- Depression
- Social isolation
- Midlife hypertension
- Diabetes
- Midlife obesity
- Hearing impairment
- Alcohol consumption
- Air pollution
- Traumatic brain injury

Other factors: sleep disturbance, diet, lifelong cognitive stimulation...



Academic team:

Dr Maree Farrow

Dr Shannon Klekociuk

Professor James Vickers

Guest experts:

Dr David Ward, Australian Institute for Health and Welfare

Professor Kaarin Anstey, University of New South Wales

Professor Carol Brayne, University of Cambridge

Professor Nicola Lautenschlager, University of Melbourne

Professor Andrew Robinson, University of Tasmania

Dr Ben Schüz, University of Bremen

Professor Velandai Srikanth, Monash University

Associate Professor Mathew Summers, University of the
Sunshine Coast

Associate Professor Michael Valenzuela, University of
New South Wales

Professor Perminder Sachdev, University of New South
Wales

Professor Karen Ritchie, French National Institute of
Medical Research

Professor Rachel Whitmer, University of California - Davis

Preventing DEMENTIA



Preventing Dementia MOOC	Number registrants	Overall Completion
August 2016	11,393	5,508 (49%)
April 2017	15,641	8,291 (53%)
May 2018	18,699	8,760 (47%)
October 2018	16,286	6,792 (42%)
May 2019	17,313	7,086 (41%)
October 2019	21,445	8,355 (39%)
April 2020	25,840	11,413 (44%)
October 2020	21,336	8,500 (40%)
Overall total	147,593	64,705 (44%)



Preventing DEMENTIA



2017 PD MOOC Feedback	% Agreed
My understanding of dementia prevention has improved	98.3
The information from this course can help individuals reduce their dementia risk	97.7
I would recommend the MOOC to others	99.0
The MOOC has increased my motivation to do something to reduce my dementia risk	95.4
The MOOC has given me the information I need to reduce my dementia risk	96.7
The MOOC has had an impact on my behaviour and lifestyle choices	86.7
I have already applied the knowledge I have gained from the MOOC	75.3

Natural-language processing algorithm (topic analysis) of 1353 responses to the question,

“If you have already applied your MOOC learning, please tell us how”

Most prevalent themes related to:

- Sharing information with family, friends, and colleagues
- Increasing physical exercise and brain training activities
- Making lifestyle changes and healthier choices
- Having greater understanding of people with dementia
- Undertaking further learning and study






2017 PD-MOOC (n=1140, 6 month follow-up). Data from ANU-Alzheimer's Disease Risk Index.

- 57.6% of participants in the high-risk **depression** state moved to lower risk state.
- 44.2% of heavy drinkers moved to a lower risk category for **alcohol consumption**.
- 36.7% moved from the highest-risk to a lower risk state for **social interaction**.
- 18.9% moved to a lower risk state for **dietary factors**.
- 14.6% of current **smokers** transitioned to a lower risk state.

Preventing DEMENTIA





THE ISLAND PROJECT

Island Study Linking Ageing and
Neurodegenerative Disease

**MODIFY RISKS OF DEMENTIA
TRANSFORM YOUR LIFESTYLE
RESHAPE TASMANIA**

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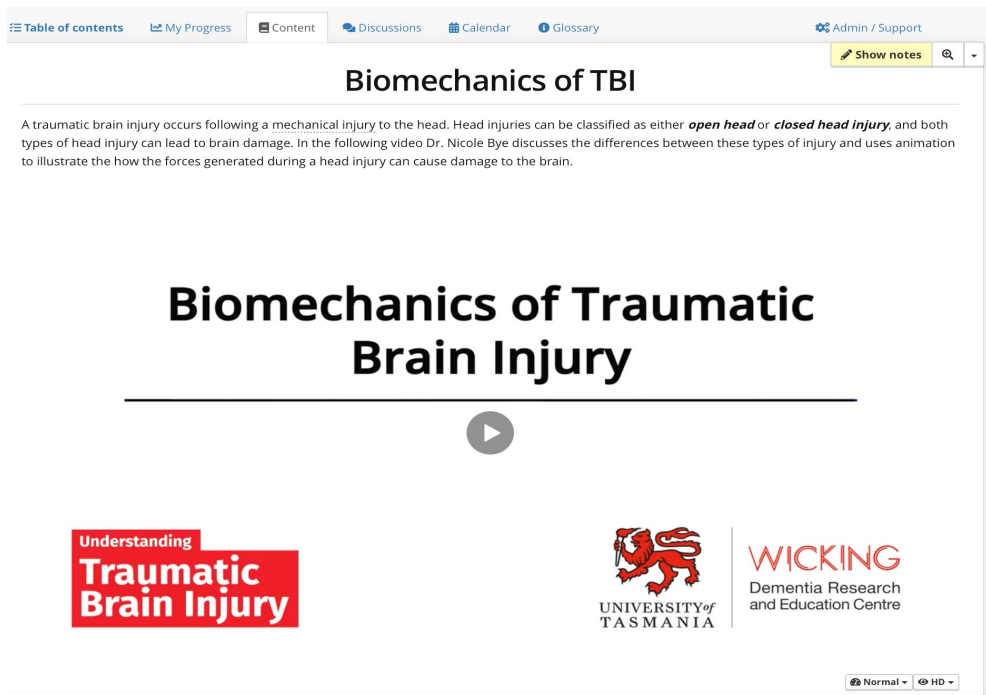
Dementia MOOCs

- Effective way of reaching and networking a broad community interested in dementia.
- >460K enrollees, > 80% female, in a caring or health professional role.
- Highest sustained rates of completion (40-50%). Two of the top 20 MOOCs in the world (#4 and #18, Class Central).
- Accessible - participants without a university education were as likely to complete as those with a university-level qualification (Goldberg et al. 2015).
- Application of knowledge is critical – Tools being developed to measure dementia literacy.



Understanding Traumatic Brain Injury MOOC

- Launched in June 2021
- Range of national and international experts
- 15,781 enrollees



The screenshot shows the user interface of the 'Biomechanics of TBI' MOOC. At the top, there is a navigation bar with links for 'Table of contents', 'My Progress', 'Content', 'Discussions', 'Calendar', 'Glossary', and 'Admin / Support'. A 'Show notes' button is also visible. The main heading is 'Biomechanics of TBI'. Below it, a paragraph states: 'A traumatic brain injury occurs following a mechanical injury to the head. Head injuries can be classified as either *open head* or *closed head injury*, and both types of head injury can lead to brain damage. In the following video Dr. Nicole Bye discusses the differences between these types of injury and uses animation to illustrate the how the forces generated during a head injury can cause damage to the brain.' The video player area shows the title 'Biomechanics of Traumatic Brain Injury' and a play button. At the bottom of the player, there are logos for 'Understanding Traumatic Brain Injury', 'UNIVERSITY of TASMANIA', and 'WICKING Dementia Research and Education Centre'. A 'Normal' button is visible in the bottom right corner of the player area.



Formal degrees – all 100% online

- Diploma, Associate and Bachelor of Dementia Care
- Diploma of Aging Studies and Services
- Certificate in Aged Care Services
- Graduate Certificate, Graduate Diploma and Master of Dementia



Dementia Undergraduate Degree Program

- Offered since 2012, first graduates in 2016
- Fully online
- Majority undertaking course on a part-time basis
- Includes foundational support for online learning
- 1287 graduates, most at the Diploma level



Students' primary reasons for study

- To learn more about dementia and effective care (88%)
- To obtain a qualification for career advancement (54%)
- To achieve more workplace recognition (28%)

Postgraduate study in Dementia

**Half year
(GradCert)
M5X**

complete all 4 core units			
CAD501 Health and Social Care in Dementia 1	CAD502 Neurobiology of Dementia 1	CAD503 Policies and Systems in Dementia 1	CAD504 Public Health and Dementia 1

**+ Half year
(GradDip)
M6X**

core unit	plus 3 of these 4			
CAD600 Methods for Dementia Research	CAD601 Health and Social Care in Dementia 2	CAD602 Neurobiology of Dementia 2	CAD603 Policies and Systems in Dementia 2	CAD604 Public Health and Dementia 2

**+ Half year
(Master's)
M7X**

core unit	plus 2 of these 4			
CAD700 Major Project in Dementia Studies	CAD701 Advanced Topics in Health and Social Care in Dementia	CAD702 Advanced Topics in the Neurobiology of Dementia	CAD703 Advanced Topics in Policies and Systems in Dementia	CAD704 Advanced Topics in Public Health and Dementia

Each unit is
comprised of
4-5 modules
developed
on the
Wicking LMS



Postgraduate study in Dementia

Assessment

- Content modules are assessed within-module – a mix of multichoice and written answers for more complex topics
- Major assessment is called “MyContext” – throughout the course, your assessments require you to make links between your learning and your professional and/or personal context
- e.g. develop material for your workplace, pursue a related issue which you need information about, up-skill your coworkers using evidence based training



Postgraduate modules – to be offered for CPD

Edit Element + Add New Element below Options

Background thoughts:

Awareness of mortality and associated needs and options is a key consideration in the health and social care of people living with dementia and those who care for them.

Palliative care is a relatively new component of health care. It emerged in the 1960s in the UK and has since spread around the world. In the following clip we consider the recent history of the movement, its relative recency and development alongside the dominant approach of curative medicine carry particular challenges and opportunities that we are about to explore.

Principles of Palliative Care

Overview and history

13:48

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Edit Element + Add New Element below Options

Reading:

Dying in Acute Healthcare in the 1960s

The introductory video above refers to the work of the researcher David Sudnow, in particular his text 'Passing On: The social organization of dying' (1967). The reading (Sudnow, D., 1967, 'Dead on arrival', *Trans-action*, 5(1): 36-43) contains much of a summary of that work.

This reading is quite confronting and reflects many of the values and practices that were rejected by those such as Cicely Saunders and others within the death awareness movement and which lead to the development of palliative care.

For those interested, in your Discussion Forum below there is the opportunity to explore what sorts of values and priorities allowed such clinical and personal responses to death in healthcare to take place. What do you think allowed for this to develop? Would such responses be acceptable today?

The 'Nun Study'

Risk of dementia

- All nuns completed an autobiographical essay before taking final vows (avg age of 22)
- "write a short sketch of her own life. This account should not contain more than two to three hundred words and should be written on a single sheet of paper."
- Analysed idea density and grammatical complexity

There were a number of major insights into Alzheimer's disease that came from this study, as well as other similar studies on religious orders. The clinicopathological studies clearly showed that the amount, or burden, of pathology in the brain was not always directly related to presence of symptoms. Individuals appear to show differences in their susceptibility to accumulating Alzheimer's disease pathology.

Clinical Perspective of FTD

An Interview with Dr Fiona Kumfor (University of Sydney)



Dr Kumfor is a clinical neuropsychologist who investigates social cognition in dementia. In this interview Fiona discusses the key clinical symptoms of FTD and how neuropsychological testing can be used to distinguish it from other forms of dementia.

Clinical Classification of Frontotemporal Dementia

Arnold Pick first clinically describe a person with frontotemporal dementia (1892)

- Alois Alzheimer identified the pathological feature of the "Pick's body" in the brain and named the disease "Pick's disease"
- Clinical and pathological diagnostic criteria for FTD were developed in 1994

As well as the behavioural variant and language variants of frontotemporal dementia we have included the FTD movement disorders in our classification. These are often considered as overlap symptoms for FTD and their inclusion in classification is variable. For each of the clinical subtypes of frontotemporal dementia, classification describes the initial symptoms. As disease spreads through the brain, symptoms become less distinct and there may be a merging of symptoms.

What have we learnt from online degrees in dementia?

- Address a broad need for increased knowledge of dementia
- Typical student is female, aged 40's-50's, in a formal or informal caring role
- Online learning is accessible

Acknowledgements

- Staff and students of the Wicking Centre
- Collaborators and guest experts, family carers and people with dementia on the MOOCs
- Research study participants

Funding:

J.O. and J.R. Wicking Trust (Equity Trustees)
St.Lukes Health
National Health and Medical Research Council
Medical Research Future Fund
Commonwealth Department of Health
Masonic Medical Research Foundation



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National Health and Medical Research Council



Medical Research
Future Fund



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Department of Health



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