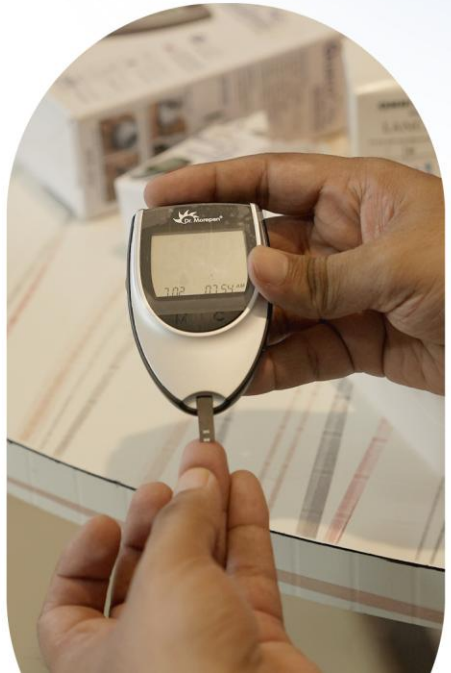
International Diabetes Federation

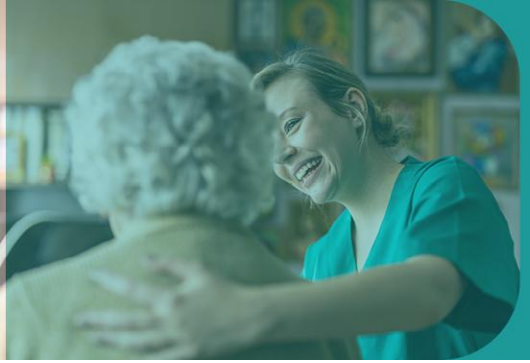
75 YEARS 1950 - 2025

The hidden link: diabetes, dementia and ageing populations

Online event



22 September 2025
14:00-15:30 CEST



THE HIDDEN LINK: DIABETES, DEMENTIA AND AGEING POPULATIONS

WELCOME FROM THE MODERATOR

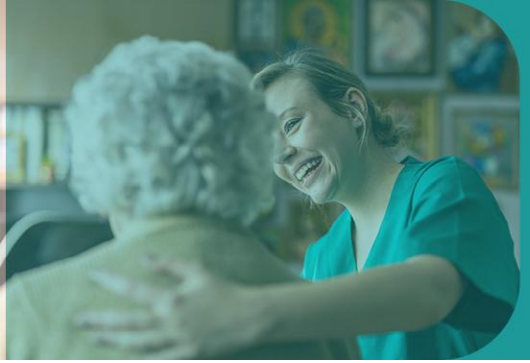
Ms NKIRUKA OKORO,

IDF Blue Circle Voice member

United Kingdom

WELCOME FROM IDF

- This webinar will be recorded.
- You can activate Zoom-generated subtitles for this webinar by clicking on the closed caption (cc) button at the bottom of your Zoom window. Please note these subtitles are not 100% accurate.
- The recording, slides and feedback questionnaire will be sent to all registrants in a few days.
- Participants who attend at least 80% of this event live will receive an attendance certificate only if they complete a feedback questionnaire. Please check your spam folders if you have not received them by 22 October.
- **Please use the Q&A function to post your questions to speakers and panellists.**



THE HIDDEN LINK: DIABETES, DEMENTIA AND AGEING POPULATIONS

WELCOME FROM THE IDF PRESIDENT

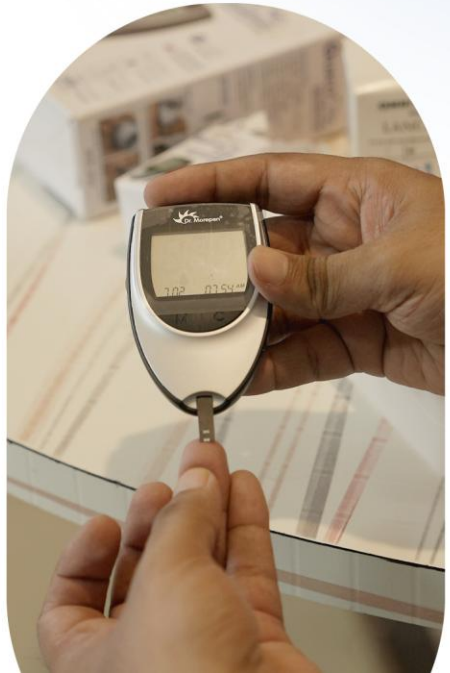
PROF PETER SCHWARZ

IDF President

Germany


International Diabetes Federation
75 YEARS
1950 - 2025

Setting the scene



THE HIDDEN LINK: DIABETES, DEMENTIA AND AGEING POPULATIONS

THE 11TH EDITION OF THE IDF DIABETES ATLAS

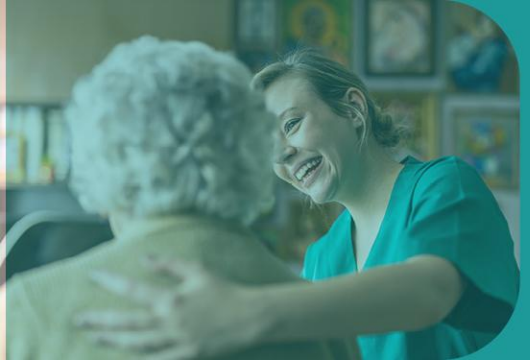
PROF DIANNA J.MAGLIANO

IDF Diabetes Atlas Chair

Australia

International Diabetes Federation

75 YEARS
1950 - 2025



THE HIDDEN LINK: DIABETES, DEMENTIA AND AGEING POPULATIONS

PROF KAARIN ANSTEY

Professor of Psychology at UNSW, Director of the UNSW Ageing Futures Institute and a conjoint senior principal research scientist at Neuroscience Research Australia

Australia

IDF Atlas Diabetes and Dementia

Professor Kaarin Anstey
ARC Laureate Fellow, School of Psychology
Director UNSW Ageing Futures Institute

Conjoint Senior Principal Research Scientist
Neuroscience Research Australia, Sydney

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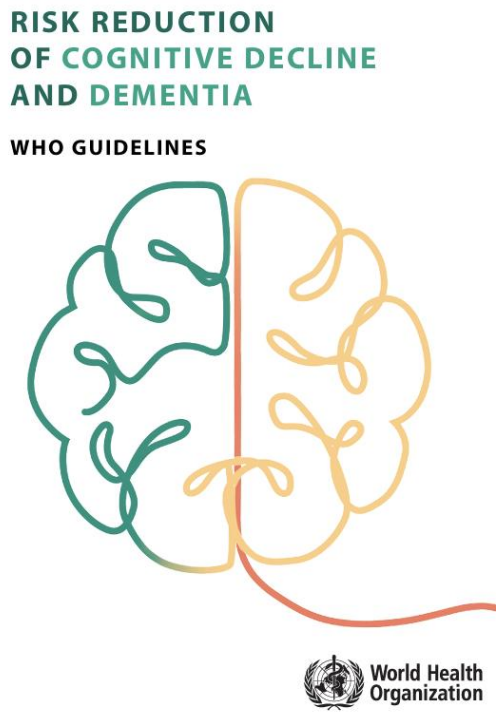
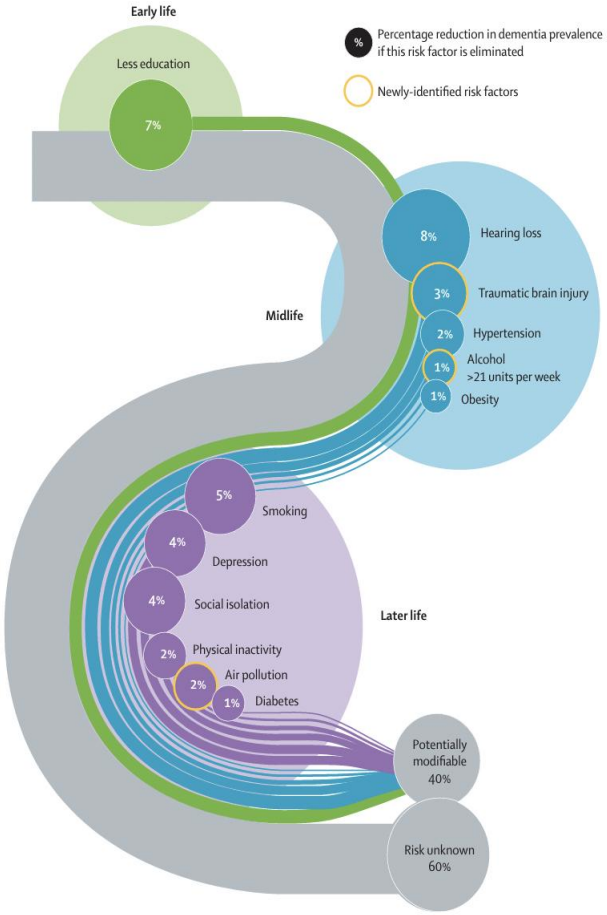
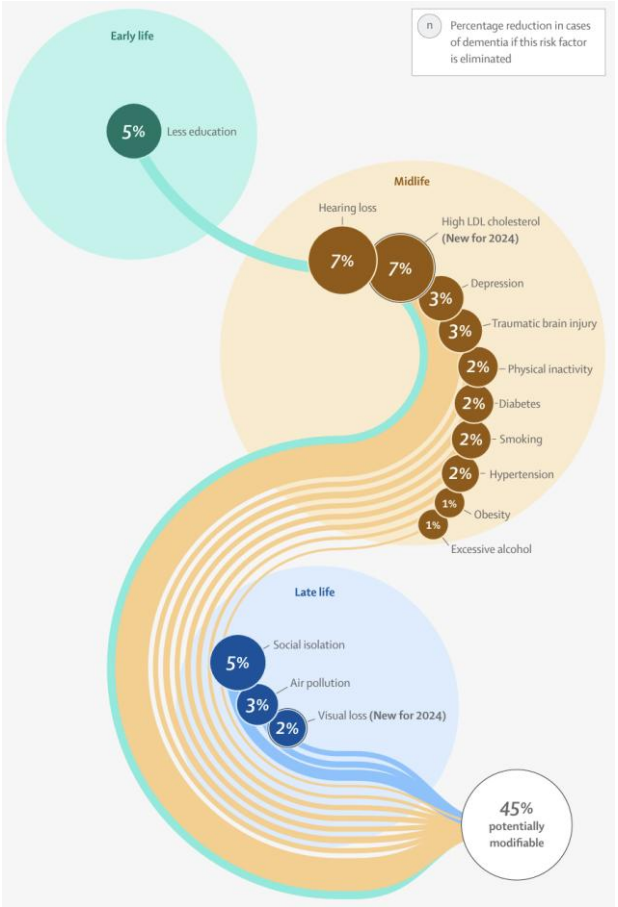
IDF Webinars

Global Recognition of Diabetes as a Dementia Risk Factor







World Health Organization. (2019). Risk reduction of cognitive decline and dementia: WHO guidelines. In *Risk reduction of cognitive decline and dementia: WHO guidelines* (pp. 96-96).

Livingston, G., Huntley, J., Liu, K. Y., Costafreda, S. G., Selbæk, G., Alladi, S., Ames, D., Banerjee, S., Burns, A., Brayne, C., Fox, N. C., Ferri, C. P., Gitlin, L. N., Howard, R., Kales, H. C., Kivimäki, M., Larson, E. B., Nakasujja, N., Rockwood, K., Samus, Q., … Mukadam, N. (2024). Dementia prevention, intervention, and care: 2024 report of the Lancet standing Commission. *Lancet (London, England)*, *404*(10452), 572–628.

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Knowledge gaps & key questions

Limitations of prior reviews

- Many reviews are outdated (e.g., last comprehensive review >5 years ago)
- Heterogeneous methodologies → difficult to compare results
- Often relied on self-reported diabetes rather than clinical confirmation

Key unanswered questions

- Are risks different for Alzheimer's disease and Vascular Dementia?
- Does age of diabetes onset (midlife vs late-life) impact dementia risk?
- How do risks vary by region, sex, and demographic factors?
- What is the population-level impact when aligned with IDF diabetes prevalence data?

Need for updated evidence

- To inform global dementia prevention strategies
- To align with IDF Diabetes Atlas for accurate burden estimates

Xue, M., et al. (2019). Diabetes and dementia risk: A meta-analysis of prospective observational studies. *Journal of Diabetes Investigation*, 10(4), 949–957.

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Aim of our review

Provide an updated synthesis addressing limitations of prior work

↓

Quantify risk of all-cause dementia, AD, and VaD associated with type 2 diabetes

↓

Assess impact of age at diabetes onset (midlife <65 vs late-life ≥65)

↓

Include high-quality population-based studies from diverse regions, including LMICs

↓

Estimate global dementia burden attributable to diabetes through 2050 using IDF prevalence data

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Methods: Data Sources

We performed a comprehensive search of international literature using systematic review methodology including:

a) Unrestricted electronic searches of major literature databases, including PubMed, CINAHL, Scopus, EMBASE and PsycINFO, since inception
b) Manual screening of the reference lists of all included papers
c) Contact with experts in diabetes and dementia comorbidity to ensure all relevant studies are included

The study selection process was summarised by a PRISMA flow diagram. Studies not published in English will not be included.

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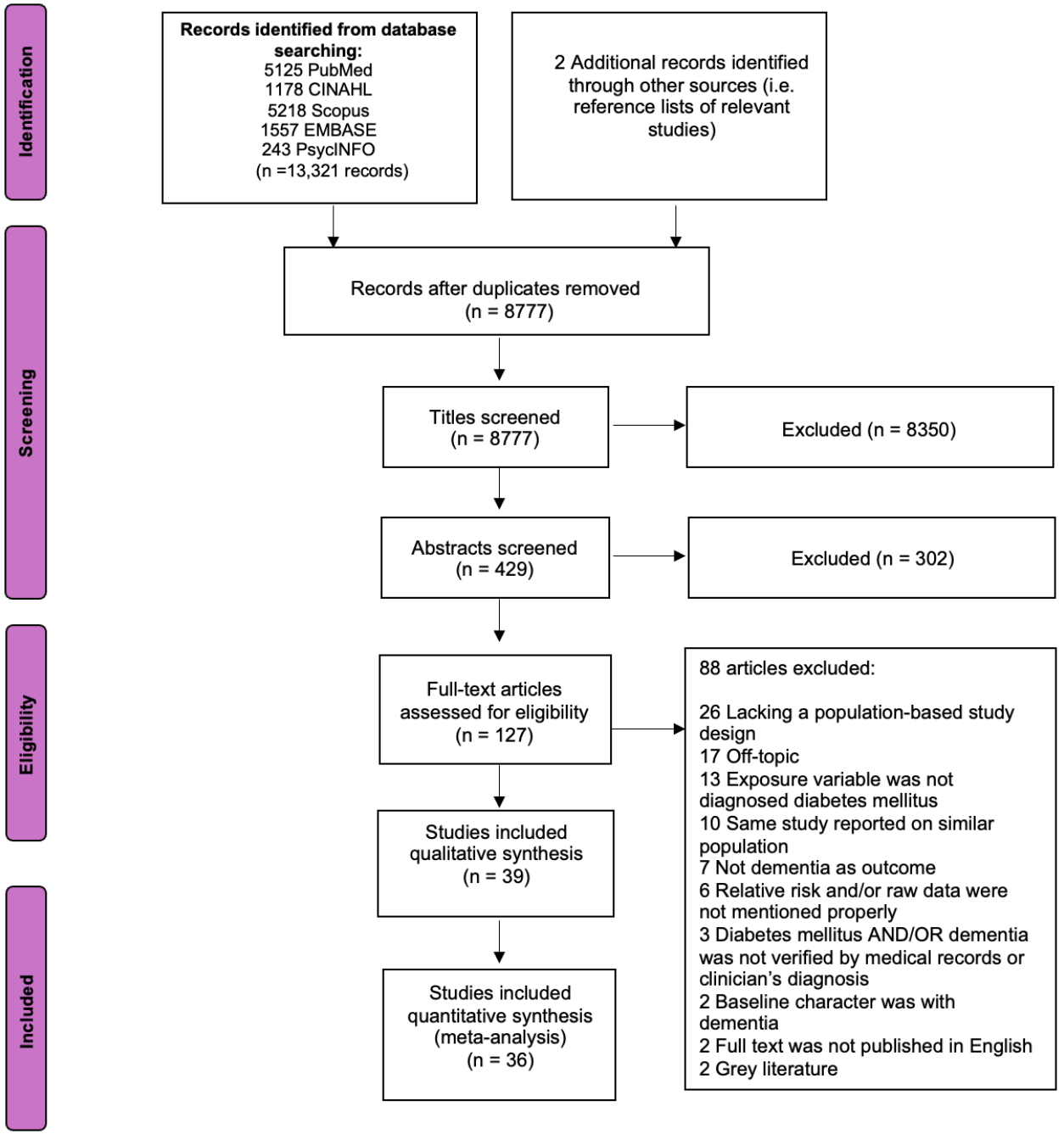
PRISMA Flow Diagram



We included total 36 prospective cohort studies encompassing over 20 million individuals with diabetes in our meta-analysis.

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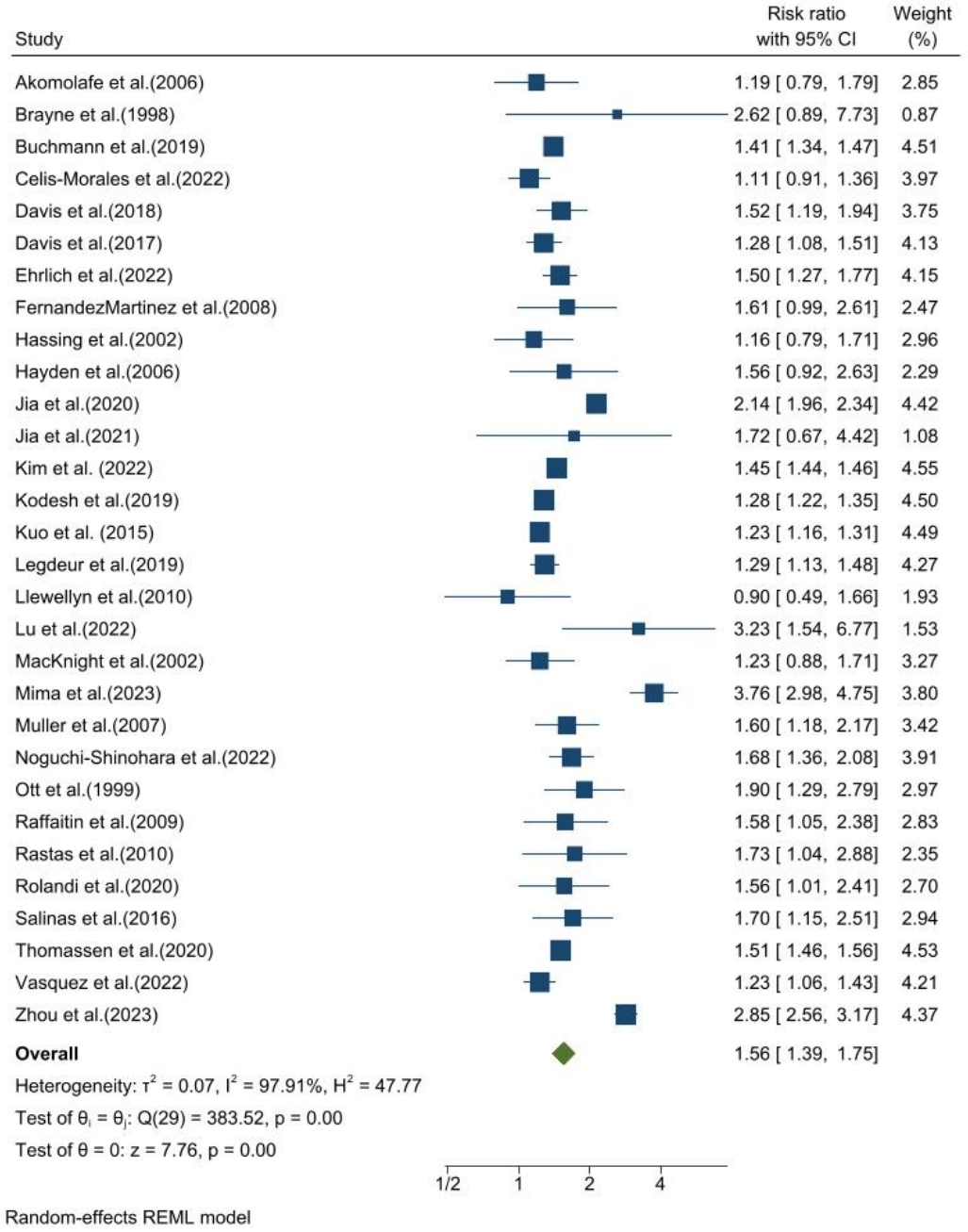
Key findings: diabetes and any dementia

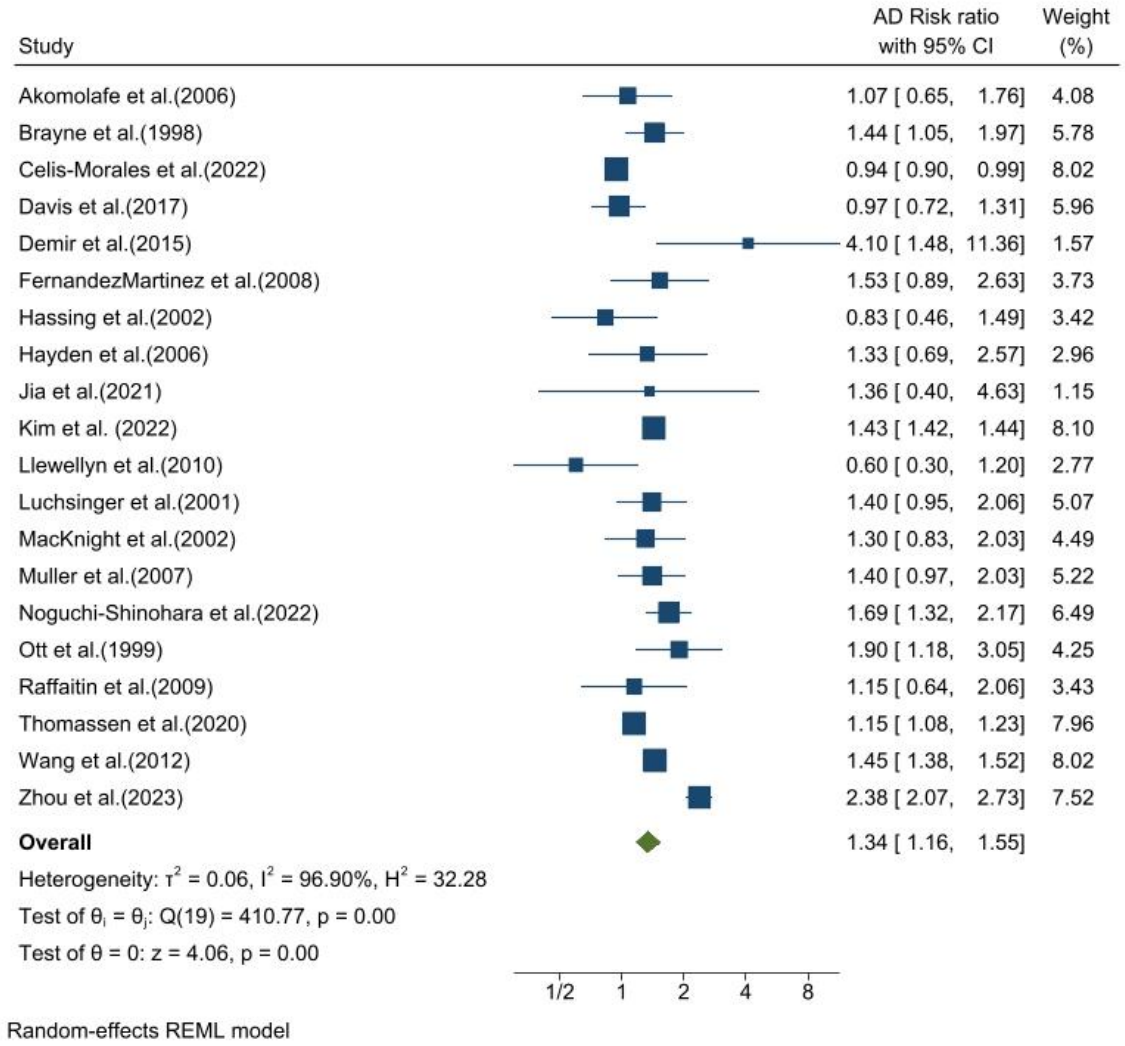
Based on 30 population-based studies:

- Total N=12,942,721
- Pooled risk ratio (RR): 1.56 (95% CI: 1.39–1.75)
- Indicates a **~56% higher risk** of dementia among individuals with diabetes



Key findings: diabetes and AD

- 20 studies included in meta-analysis
- Total N= 12,561,806
- Pooled RR: 1.34 (95% CI: 1.16–1.55)
- Indicates a **34% increased risk** of AD in people with T2DM



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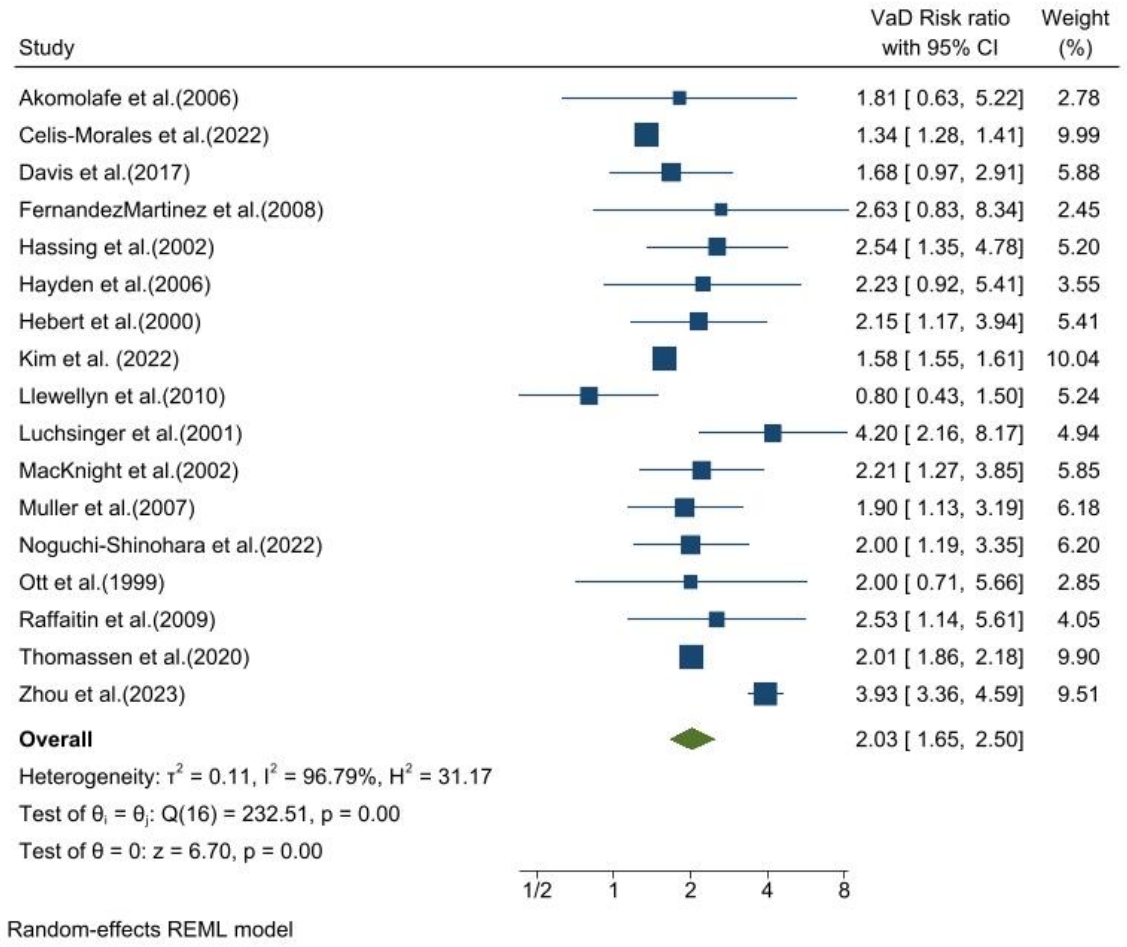
Key findings: diabetes and VaD

- 17 studies included
- Total N= 11,941,770
- Pooled RR: 2.03 (95% CI: 1.65–2.50)
- Individuals with T2DM have **more than double** the risk of VaD compared to those without diabetes



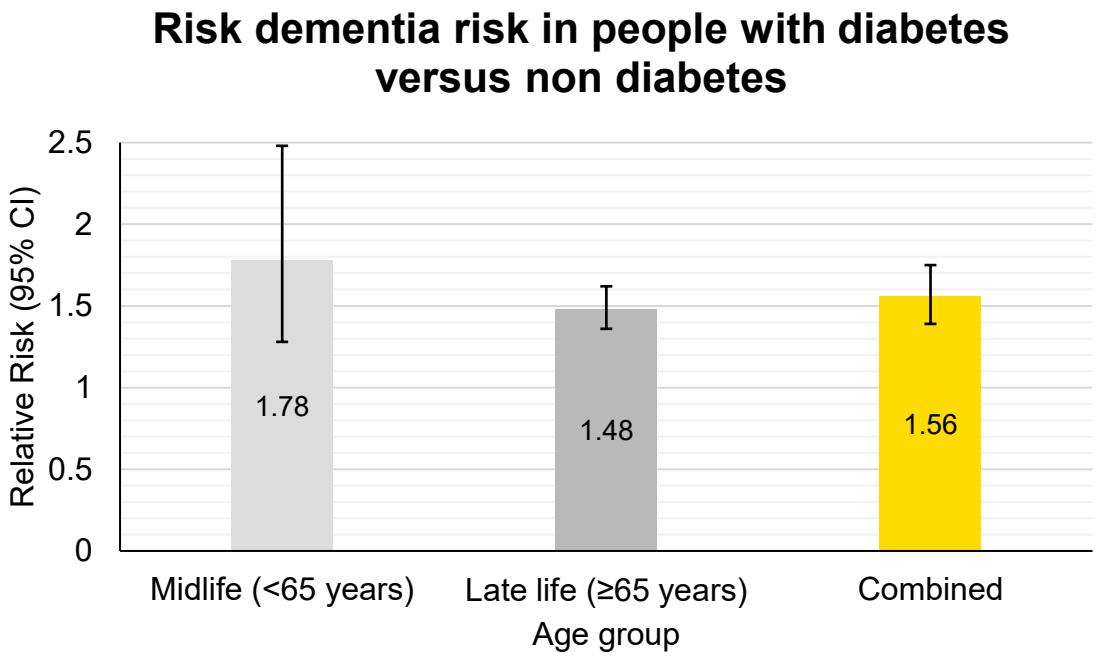
Key findings: Dementia risk by age groups

Midlife onset (<65 years)

- 8 studies
- Pooled RR: 1.78 (95% CI: 1.28–2.48)
- Higher dementia risk when diabetes develops in midlife

Late-life onset (≥65 years)

- 22 studies
- Pooled RR: 1.48 (95% CI: 1.36–1.62)
- Still significant, but lower than midlife onset



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Population attributable risk methodology

Calculated country-specific population attributable risk (PAR) for dementia due to diabetes

- Time points: current (2024) and projected (2050)
- Method: Levin's formula

Data sources:

- Diabetes prevalence from IDF Diabetes Atlas, 11th edition
- Relative risks from our meta-analysis

Nonparametric simulation (n=10,000) to generate confidence intervals

Population Attributable Risk (PAR)

	Prevalence (95% CI)†		PAR (95% CI)	
	2024	**2050**	**2024**	**2050**
Global	11.10 (10.97-11.25)	12.96 (12.80-13.12)	5.87 (4.09, 7.77)	6.78 (4.75, 8.95)
HIC	10.21 (9.91-10.51)	12.05 (11.71-12.39)	5.42 (3.79, 7.19)	6.34 (4.42, 8.37)
MIC	11.46 (11.30-11.63)	13.52 (13.33-13.71)	6.04 (4.23, 7.99)	7.05 (4.94, 9.30)
LIC	7.47 (7.17-7.77)	8.22 (7.88-8.56)	4.03 (2.80, 5.37)	4.41 (3.06, 5.89)

†Obtained from IDF Diabetes Atlas: Global, Regional and National Diabetes Prevalence Estimates for 2024 and Projections for 2050

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Key findings – PAR of Dementia Due to Diabetes (2024)

In 2024, 5.87% of dementia cases globally were attributable to diabetes. Burden varies widely by country and region.

Highest PAR (>10%)	Countries with particularly high fractions
• Middle East, • North Africa • Southeast Asia	• Pakistan, Egypt, Saudi Arabia, Kuwait • Marshall Islands, Samoa, Vanuatu, New Caledonia

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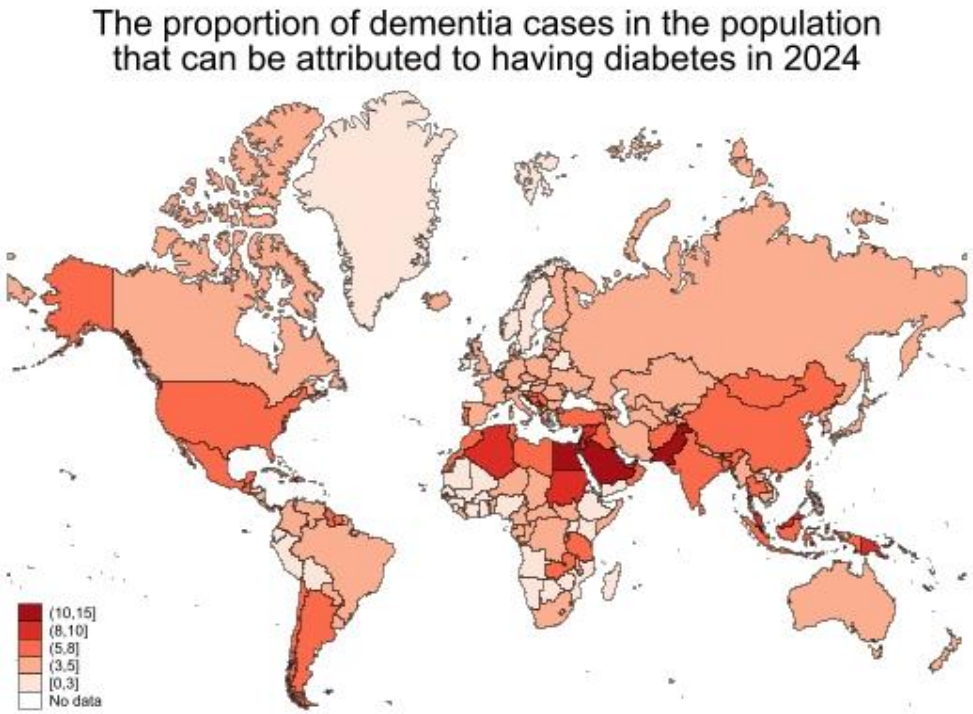
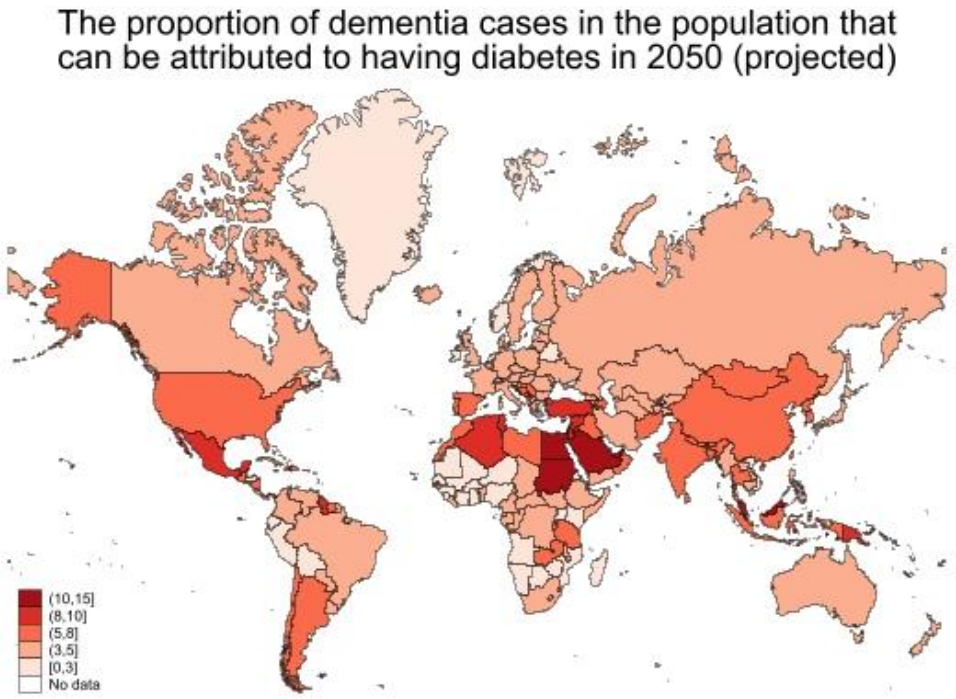
Global maps showing dementia cases due to Type 2 diabetes in 2024 (a) and 2050 (b)





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Policy & Public Health Relevance

1. Prioritise Midlife Intervention

Diabetes in midlife → higher dementia risk
Target prevention and management earlier in life

2. Integrate Into Clinical Pathways

Incorporate cognitive risk assessment in diabetes care
Routine monitoring of vascular and metabolic comorbidities

3. Promote Risk Assessment Tools

Use validated risk calculators (e.g., CogDrisk, AUSDRISK tools)
Combine diabetes management with dementia risk profiling

4. Multidomain Lifestyle Interventions

Physical activity, diet, weight management
Blood pressure and lipid control

5. Policy & Public Health Action

Embed dementia prevention into diabetes programs
Strengthen health systems in LMICs for integrated care

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Shared risk factors – diabetes and dementia

- Hypertension
- Obesity
- Chronic kidney disease
- Cardiovascular disease
- Stroke
- Physical inactivity

These overlapping risk factors contribute to a higher overall dementia burden in people with diabetes → need for multidomain interventions.

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Conclusion

Overall, people with diabetes have a 56% increased risk of dementia compared with people who do not have diabetes

Middle aged adults who develop diabetes have a higher risk of developing late life dementia than older adults who develop diabetes.

Diabetes is particularly strongly associated with vascular dementia and shares vascular risk factors with dementia. This indicates a need for shared prevention strategies through vascular risk reduction and management strategies.

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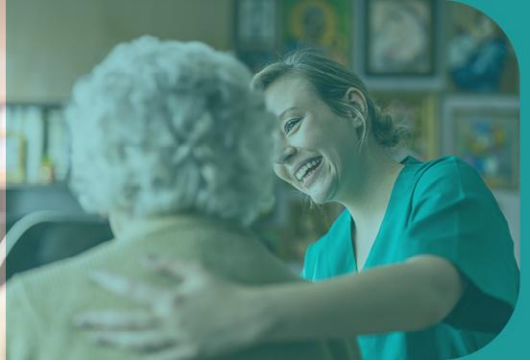
Acknowledgements

Funding:

Australian Research Council (ARC) Laureate Fellowship;
NHMRC Boosting Dementia Grant 1171279

Assess your own risk factors for dementia:

https://cogdrisk.neura.edu.au



THE HIDDEN LINK: DIABETES, DEMENTIA AND AGEING POPULATIONS

DR KATRIN SEEHER

Mental Health Specialist at the World Health Organization

Switzerland

Diabetes management within WHO's Guidelines on Risk Reduction of Cognitive Decline and Dementia

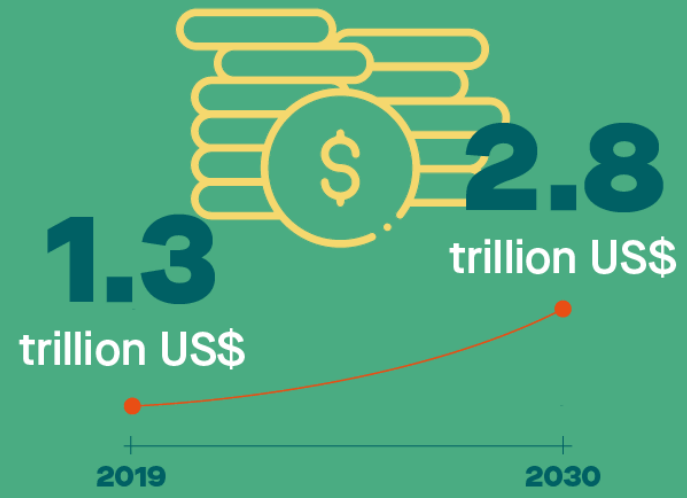
Dr Katrin M Seeher, PhD Dipl-Psych
Mental Health Specialist
Brain Health Unit
Department of Noncommunicable diseases and Mental Health

Email: seeherk@who.int Twitter/X: @KSeeher LinkedIn: Katrin Seeher

World Health Organization

Why should we care about dementia?

World Health Organization



Global cost of dementia

57 million people with dementia.
78 million by 2030

>60% of people with dementia live in LMCIs

7th leading cause of death

50% of costs are for informal care

Dementia disproportionately affects women

70% of informal care provided by women

Global action plan on the public health response to dementia – extended until 2031

Vision

A world in which **dementia can be prevented** and **people with dementia and their carers** can **live well** and **receive the care and supports they need** to fulfil their potential with dignity, respect, autonomy and equality.

Goal

To **improve the lives of people with dementia, their carers and families**, while decreasing the negative impact of dementia on them as well as on communities and countries.

- Adopted in 2017 by WHA70
- Recommended actions and global targets across 7 strategic areas, incl. on supporting caregivers

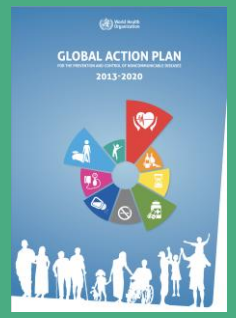
World Health Organization

7 strategic action areas with associated global targets

- Dementia as a public health priority
- Dementia awareness and friendliness
- Dementia risk reduction
- Diagnosis, treatment, care & support
- Support for dementia caregivers
- Health information systems
- Dementia research & innovation

Risk reduction targets linked to NCDs

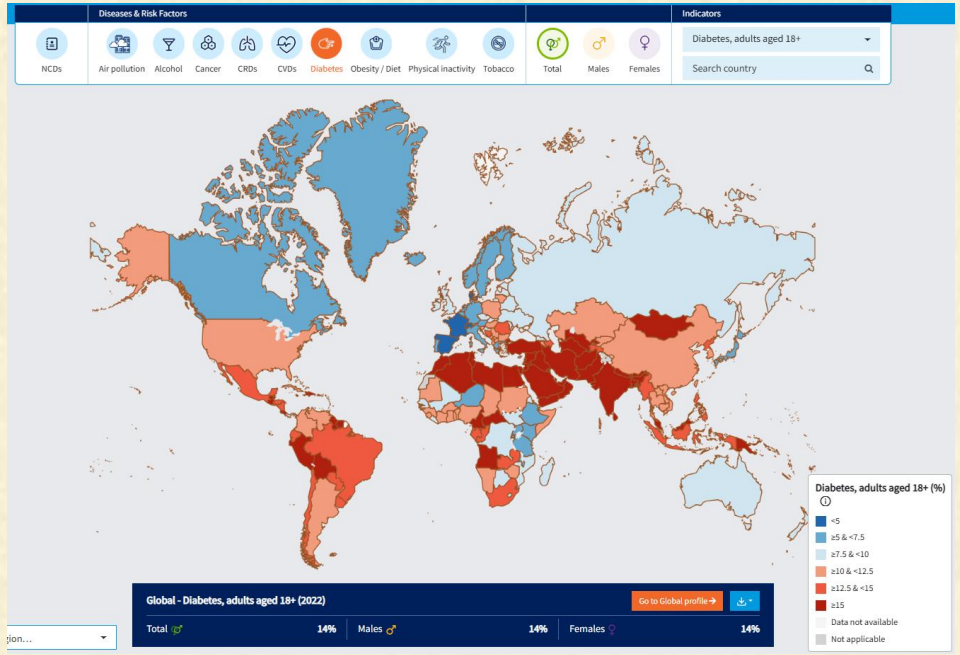
- A 10% relative reduction in prevalence of **insufficient physical activity**
- A 30% relative reduction in prevalence of **current tobacco use** in persons aged 15 years and older
- At least a 10% relative reduction in the **harmful use of alcohol**, as appropriate, within the national context
- A halt in the risk in **diabetes and obesity**
- A 25% relative reduction in the prevalence of **raised blood pressure** or contain the prevalence of raise blood pressure according to national circumstances
- A 25% relative reduction in overall **mortality from cardiovascular diseases**, cancer, **diabetes** and chronic respiratory diseases



Relevant NCD targets

Prevalence of diabetes and obesity continue to increase.

- **Target:** Halt the rise in diabetes and obesity
- **Indicator:** Age-standardized prevalence of raised blood glucose/diabetes among persons aged 18+ years (defined as fasting plasma glucose concentration ≥ 7.0 mmol/l (126 mg/dl) or on medication for raised blood glucose)



Source: ncdportal.org

Insufficient risk reduction progress globally

45%

of countries have dementia risk reduction campaigns

71% high-income countries

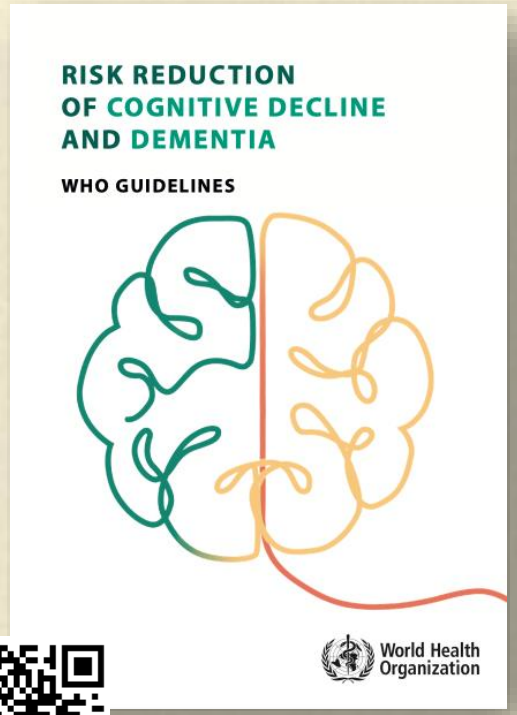
34%

of countries have guidelines for dementia risk reduction

77% high-income countries

World Health Organization

Available WHO Guidance (1/2)

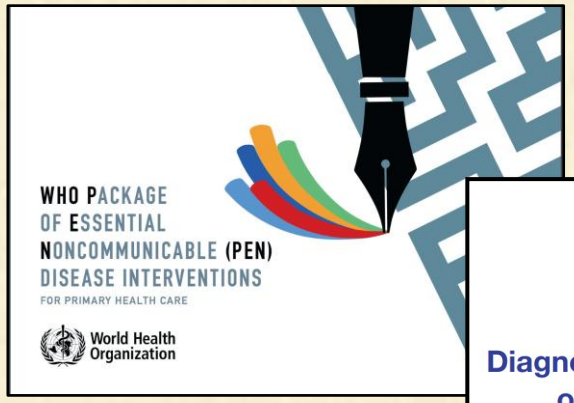


- Released in 2019, currently being updated
- Including recommendations for management of T2DM to reduce dementia risk

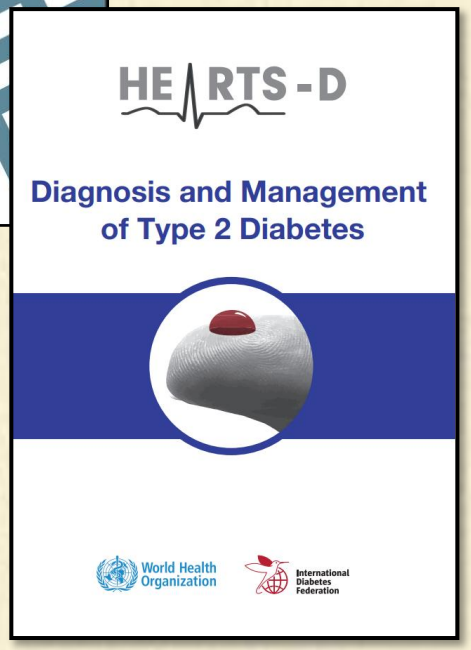
The management of diabetes in the form of medications and/or lifestyle interventions should be offered to adults with diabetes according to existing WHO guidelines.
Quality of evidence: ***very low to moderate (for different interventions)***
Strength of the recommendation: ***strong***

The management of diabetes may be offered to adults with diabetes to reduce the risk of cognitive decline and/or dementia.
Quality of evidence: ***very low***
Strength of the recommendation: ***conditional***

Available WHO Guidance (2/2)



https://tinyurl.com/WHO-PEN



https://tinyurl.com/HEARTS-D

Diabetes is a chronic, metabolic disease characterized by elevated levels of blood glucose (or blood sugar), which leads over time to serious damage to the heart, blood vessels, eyes, kidneys, and nerves.

TREATMENT OPTIONS

- A healthy diet to achieve or maintain normal body weight and regular physical activity are the mainstay of diabetes management. All patients should be advised on avoidance of tobacco use and harmful use of alcohol.
- Management of risk factors and referral as appropriate
- Oral hypoglycaemic agents for type 2 diabetes, if glycaemic targets are not achieved with lifestyle modification
- Metformin can be used as the first-line medicine
- Other classes of antihyperglycaemic agents, added to metformin if glycemic targets are not met
- Statins are recommended for all people with type 2 diabetes older than 40 years, but only if this does not negatively impact access to glucose-lowering and blood pressure lowering medication.

Latest developments

World Health Organization

WHO Essential Medicine List

now includes

GLP-1 receptor agonists for glucose lowering therapy for adults with T2DM

and (i) established cardiovascular disease (CVD) or chronic kidney disease (CKD); and (ii) obesity (body mass index (BMI) ≥ 30kg/m2) having a significant impact on their physical health and/or quality of life

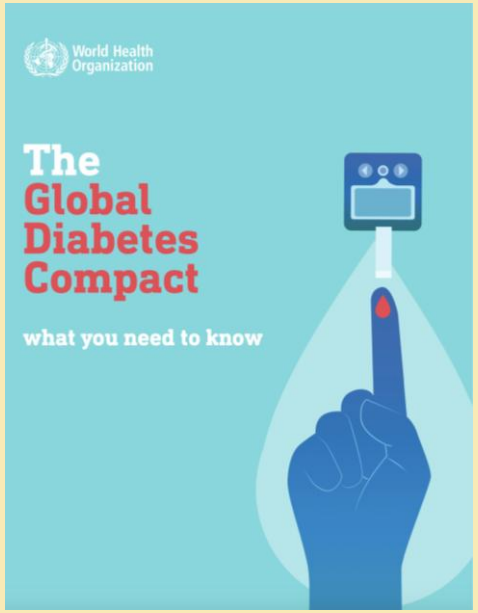
Use of antidiabetic agents in dementia treatment

Cai et al., 2025: https://pubmed.ncbi.nlm.nih.gov/40023730/

Best evidence for:
Insulin detemir (low dose) on cognitive outcomes
Metformin (n.s. trend) for Aβ deposition

Ways to strengthen implementation of diabetes and dementia guidelines

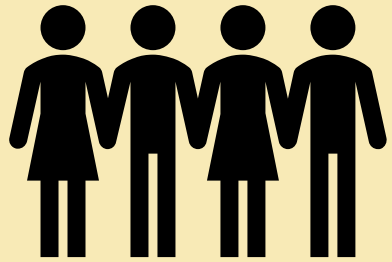
Leverage the Global Diabetes Pact



Integrate dementia risk reduction interventions in NCDs care pathways

Build capacity in healthcare workers and strengthen primary healthcare

Involve people with lived experience in implementation



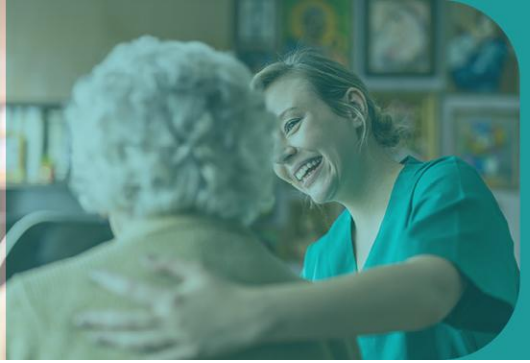
World Health Organization

World Health Organization

Thank you !

seeherk@who.int
brainhealth@who.int

www.who.int/health-topics/dementia



THE HIDDEN LINK: DIABETES, DEMENTIA AND AGEING POPULATIONS

Mr RAVI SUBRAMANIAN

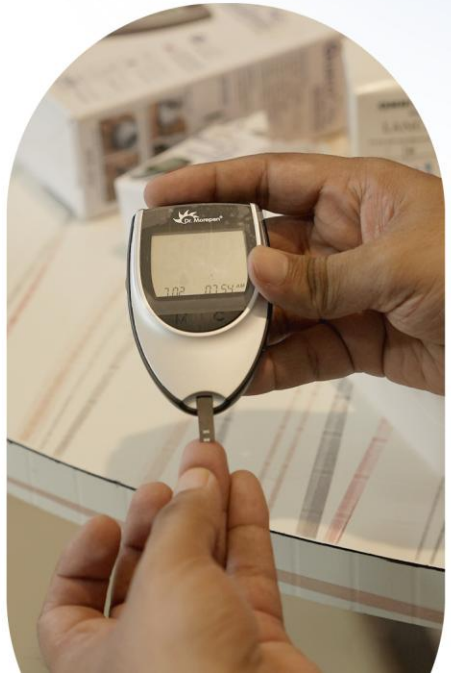
IDF Blue Circle Voice member

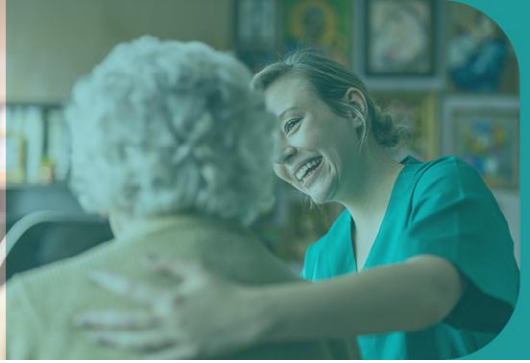
Australia

Dementia - perspective as a person living with diabetes for 27 years

- My GP, My Endocrinologist, Diabetes Educator, Dietician
- Memory Problems – short term, working memory
- Slower processing of complex tasks
- Impact on daily life
- Frustration and Anxiety
- The emotional toll
- Hope and Action

Discussion panel and Q&A





THE HIDDEN LINK: DIABETES, DEMENTIA AND AGEING POPULATIONS

CLOSING REMARKS AND THANKS

Ms NKIRUKA OKORO,

IDF Blue Circle Voice member

United Kingdom

CLOSING REMARKS AND THANKS

- The recording, slides and feedback questionnaire will be sent to all registrants in a few days.
- Please respond to the feedback questionnaire to help us improve future IDF online events.
- Send any questions you may have to advocacy@idf.org.

Thank you