Institute of Gerontology

ALZHEIMER'S® ASSOCIATION

11th Annual Fall Conference:
Bringing together healthcare professionals, people with dementia and caregivers

A MEANINGFUL LIFE WITH ALZHEIMER'S DISEASE

Friday, November 11, 8:45 a.m.-12:50 p.m.

Moved to virtual ONLY!

Zoom link to be provided upon registration.

REGISTRATION COST

$30 Healthcare professionals

$15 Students and Family Caregivers

FREE Individuals living with a dementia diagnosis

CONFERENCE AGENDA

8:45 a.m. | *Introduction of Conference and Welcome* - Peter Lichtenberg, Ph.D, APBB, Director of the Institute of Gerontology

8:55 a.m. | *Cognitive Decline in the Time of COVID and Social Isolation* - Irving Vega, Ph. D.

10:25 a.m. | Break

10:30 a.m. | *How to Assess Pain within Cognitively Declining Individuals* - Dr. Linda Keilman, DNP, RN, GNP-BC, FAANP

12 p.m. | *Learning from the Dementia Journey* - Jim Mangi, Alzheimer's Association volunteer and caregiver

12:30 p.m. | Closing Remarks - Jennifer Lepard, President & CEO, Alzheimer's Association Michigan Chapter

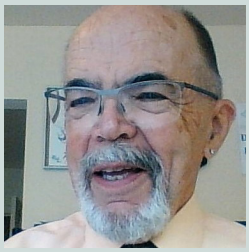
CONFERENCE SPEAKERS

Irving Vega, Ph. D.

Irving E. Vega, Ph.D., serves as a Michigan Alzheimer's Disease Center expert and associate professor of translational neuroscience and the director of the Integrated Mass Spectrometry Unit at Michigan State University. Dr. Vega's research is directed toward the understanding of how neurons respond to the presence of pathological tau in different brain regions.

Dr. Linda Keilman, DNP, RN, GNP-BC, FAANP (1.5 Pain CEUs)

Dr. Linda Keilman has been a nationally certified Gerontological Nurse Practitioner since 1989 and teaching nursing since 1983. She has been a faculty member in the College of Nursing at MSU since 1992 her current MSU Health Team practice is providing primary care for residents in long-term care.



Jim Mangi

Jim Mangi is a Vietnam veteran, a scientist, and founder and owner of a nationwide consulting firm—none of which prepared him for his retirement career as a caregiver for his wife, who is now in her 14th year of living with Younger Onset Alzheimer's disease. Jim is now a volunteer Community Educator for the Alzheimer's Association, and a dementia awareness activist.

QUESTIONS? Contact Jean Barnas, Alzheimer's Association Program Services Director: jbarnas@alz.org | 248.996.1033

REGISTER ONLINE AT https://shop.prod.wayne.edu/iog/iog/

EARN 3.5 CEs including 1.5 Pain CEUs!

3.5 CONTACT HOURS NURSING: This activity has been submitted to the Ohio Nurses Association (OBN-001-91) for approval to award contact hours, The Ohio Nurses Association is accredited as an approver of continuing nursing education by the American Nurse Credentialing Center's Commission of Accreditation.

3.5 CE SOCIAL WORK: Institute of Gerontology, Wayne State University is an approved provider with the Michigan Social Work Continuing Education Collaborative. Approved Provider Number: MICEC-0066.

3.5 CE Occupational Therapy (OT)

3.5 CE Physical Therapy (PT)

This program is Approved by the National Association of Social Workers (Approval #0068) for 3.5 (1.5 CE Pain) continuing education contact hours.

Certificate of Attendance for other disciplines including General, Case Managers, Recreational Therapists Certificate will be issued after total completion of program. Evaluation, sign in required.

Contact Donna MacDonald for questions regarding Continuing Education Credits at donnamacdonald@wayne.edu or 313.664.2605.

Join us at the Michigan Alzheimer's Disease Research Center

The Michigan Alzheimer's Disease Research Center is committed to memory and aging research, clinical care, education, and wellness.

The center collaborates with other research institutions across the state including Wayne State University and Michigan State University, as well as local outreach organizations including the Alzheimer's Association to enhance groundbreaking research efforts and community education. The center is also one of 33 other National Institutes of Health-funded Alzheimer's Disease Research Centers across the country.

Michigan ADRC

alzheimers.med.umich.edu
UM-Ask-MADC@med.umich.edu
734-936-8803
@umichalzheimers

Interested in getting involved in research studies?

Please call Kate Hanson at 734-936-8332 or visit alzheimers.med.umich.edu/research for a list of currently enrolling studies.

Interested in learning about upcoming educational events?

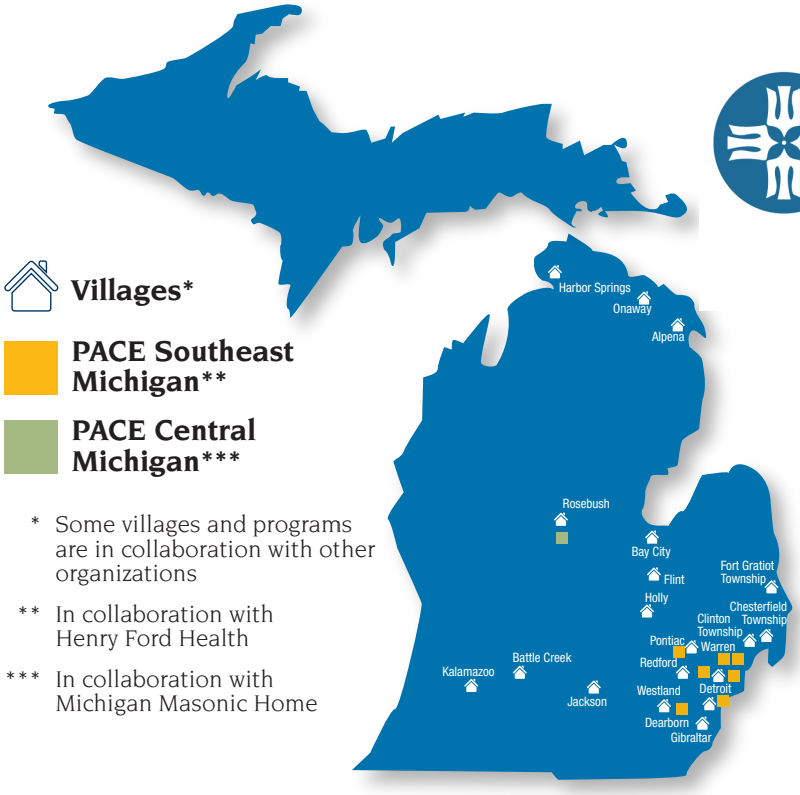
To stay informed of upcoming events, please email Erin Fox at eefox@med.umich.edu to subscribe to our monthly e-newsletters.

Interested in learning more about our wellness programs?

Please call Ashley Miller at 734-615-8293 or visit alzheimers.med.umich.edu/wellness-initiative.

Interested in learning about our Lewy body dementia programs?

Please contact Renee Gadwa at 734-764-5137 or visit alzheimers.med.umich.edu/lbd.



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PACE Southeast Michigan
www.pacesemi.org
(855) 445-4554

PACE Central Michigan
www.pacecmi.org
(833) 532-6981

There are many PVM Communities throughout Michigan:

Perry Farm Village, Harbor Springs	231.526.1500
The Village of Hillside, Harbor Springs	231.526.7108
Alpena Pines, Alpena	989.278.4250
The Village of Rosebush Manor, Rosebush	989.433.0150
The Village of Hampton Meadows, Bay City	989.892.1912
The Village of Lake Huron Woods, Fort Gratiot Township	810.385.9516
The Village of East Harbor, Chesterfield Township	586.725.6030
The Village of Holly Woodlands, Holly	248.634.0592
The Village of Sage Grove, Kalamazoo	269.567.3300
The Village of Mill Creek, Battle Creek	269.962.0605
The Village of Spring Meadows, Jackson	517.788.6679
The Village of Oakland Woods, Pontiac	248.334.4379
The Village of Peace Manor, Clinton Township	586.790.4500
The Village of Warren Glenn, Warren	586.751.5090
The Village of Redford	313.541.6000
The Village of Our Saviour's Manor, Westland	734.595.4663
The Village of Westland, Westland	734.728.5222

Detroit:

Delta Manor	313.259.5140
Hartford Village	313.270.9700
The Thome Rivertown Neighborhood	313.259.9000
The Village of Bethany Manor	313.894.0430
The Village of Brush Park Manor Paradise Valley	313.832.9922
The Village of Harmony Manor	313.934.4000
The Village of Oakman Manor	313.957.0210
The Village of St. Martha's	313.582.8088
The Village of University Meadows	313. 831.6440
The Village of Woodbridge Manor	313.494.9000
The Village of Gibraltar Manor, Gibraltar	734.676.4802
Lynn Street Manor, Onaway	989.733.2661
McFarlan Villages, Flint	810.235.3077

Support for caregivers like you

Contact the Henry Ford C.A.R.E. Program℠

(Caregiver Assistance Resources and Education Program)

Support groups and classes are being offered virtually with the option to join by phone, tablet, iPad, or computer.

Contact us by:
henryford.com/familycaregivers
Toll free number: 866.574.7530
Email: CaregiverResources@hfhs.org

Join our Facebook group, "Henry Ford Health Family Caregivers," and become part of an online community of caregivers.

HENRY FORD HEALTH®

INSTITUTE OF GERONTOLOGY

The WALLET Study: A Study of Memory Change and Money Management

Participants will be **compensated**

All financial records will be de-identified and information kept **confidential**

Interviews will take place **over the telephone**

Peter Lichtenberg, PhD
Principle Investigator and Director of the Institute of Gerontology
Wayne State University

Because the links between early memory loss and a decline in wealth are on the rise, the WSU Institute of Gerontology is seeking to interview older adults aged 60+.

The interview will examine financial decision-making and financial management as well as completion of cognitive tests and other measures. A review of financial records from a primary checking account and credit card account will be included. Interviews will be scheduled at your convenience.

If interested,
contact Vanessa Rorai at
313-664-2604
or **vrorai@wayne.edu**

The WALLET Study: Wealth Accumulations & Later-life Losses in Early cognitive Transitions

What to expect if you participate in the study:

1. Vanessa Rorai will ask you screening questions to determine if you are eligible to participate in the study.
2. If you are eligible, Vanessa will send you our consent form that describes in detail all aspects of the study for your review.
3. After you review the consent form and agree to participate, Vanessa will begin the process of obtaining 12-months of bank statements.
4. Once Vanessa receives the bank statements she will completely de-identify all bank records. She will then contact you to schedule two interviews. The interviews can be done via telephone or video call. Interviews are scheduled based on your availability and typically within a week of receiving the bank statements..
5. The first interview is with Vanessa, it will take approximately 45 minutes. She will ask questions about your physical and mental health, feelings of stress, and how you are organized financially.
6. The second interview is with Peter Lichtenberg, it will take approximately 1 hour. He will ask more in-depth questions about financial decision-making, financial management, and your cognitive health.
7. After the interviews are completed, Vanessa will send you a compensation form to sign. Once she receives the signed form we will mail you a check for$100 and your participation in the study is complete.

Institute of Gerontology

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Irving E. Vega, PhD, serves as a Michigan Alzheimer's Disease Center expert and associate professor of translational neuroscience and the director of the Integrated Mass Spectrometry Unit at Michigan State University. Dr. Vega's research is directed toward the understanding of how neurons respond to the presence of pathological tau in different brain regions.

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Cognitive Decline in the Time of COVID and Social Isolation

Irving E. Vega, PhD
Red Cedar Distinguished Faculty
Associate Professor
Department of Translational Neuroscience
College of Human Medicine
Michigan State University

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Conflict of Interest Declaration

No financial conflict of interest to declare

Michigan Alzheimer's disease Research Center

Michigan Center for Contextual Factors in Alzheimer's Disease

Steering Committee member of the Michigan Dementia Coalition

Board of Directors of the Alzheimer's Association Greater Michigan Chapter

Board of Directors of the Hispanic Center of Western Michigan

Opinions are my own and not the views of my employer or associates

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Building A Fit Brain
Means a healthy life

3

A balanced diet

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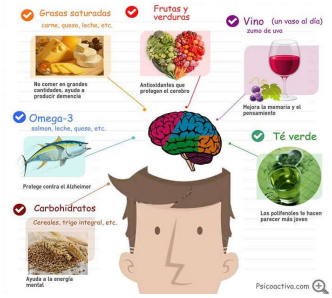
Calorie Restriction
1500-1900 calories



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Quality of Life

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Quality of Sleep

Reduce stress

Exercise

Socialize

Learn something new/Challenge yourself

5

Quality of Life

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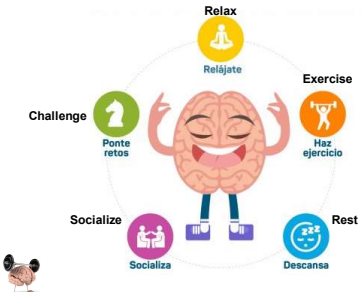

Relájate
Hace que tu cerebro funcione correctamente y esté libre de toxinas

Haz ejercicio
Mejora la conexión de las neuronas y ayuda contra el Alzheimer y Parkinsón

Descansa
El sueño profundo organiza, almacena y cataloga recuerdos en la noche

Socializa
Intercambiar experiencias, ilusiones y proyectos mantiene el cerebro activo

Ponte retos
Retos diarios le dan actividad, como ajedrez, crucigramas o leer

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Social Determinants of Health

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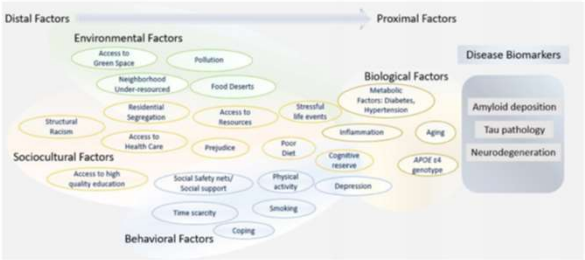

Alzheimer's Dement. 2021;1–20.

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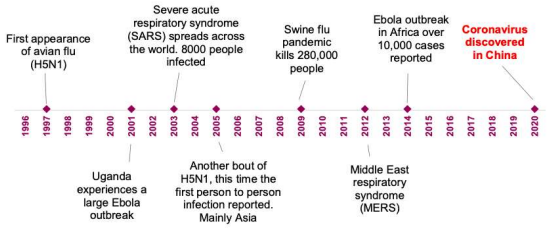
Chart 1: Pandemics in recent history



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The COVID-19 Pandemic

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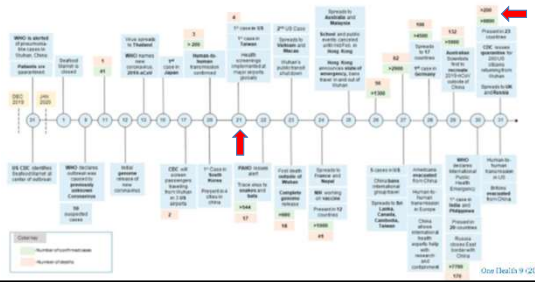
SARS-CoV-2 Transmission



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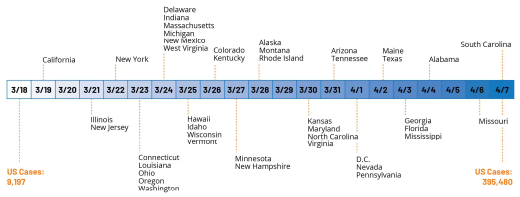
When State Stay-at-Home Orders Due to Coronavirus Went into Effect



SOURCE: KFF, State Data and Policy Actions to Address Coronavirus, https://www.kff.org/health-costs/issue-brief/state-data-and-policy-actions-to-address-coronavirus/#note-3-10 and state government websites.

KFF

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COVID-19: the numbers

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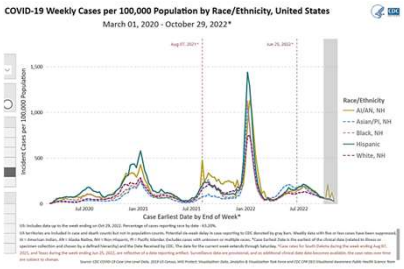
COVID-19: the numbers



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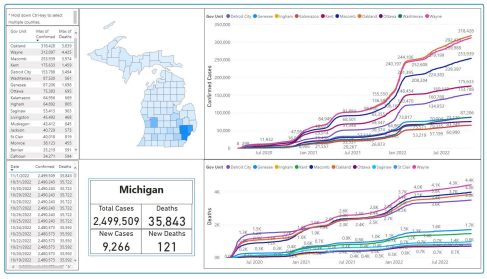
COVID-19: the numbers



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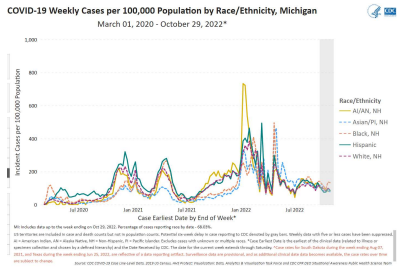
COVID-19: the numbers



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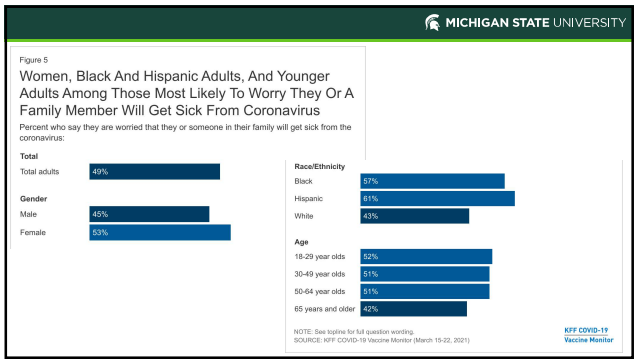
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Figure 5
Women, Black And Hispanic Adults, And Younger Adults Among Those Most Likely To Worry They Or A Family Member Will Get Sick From Coronavirus
Percent who say they are worried that they or someone in their family will get sick from the coronavirus:
Total
Total adults 49%
Gender
Male 45%
Female 63%
Race/Ethnicity
Black 57%
Hispanic 61%
White 43%
Age
18-29 year olds 62%
30-49 year olds 51%
50-64 year olds 51%
65 years and older 42%
NOTE: See topline for full question wording.
SOURCE: KFF COVID-19 Vaccine Monitor (March 15-22, 2021)
KFF COVID-19 Vaccine Monitor

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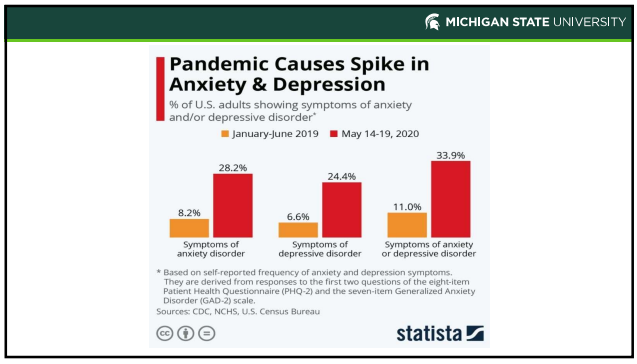
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Pandemic Causes Spike in Anxiety & Depression
% of U.S. adults showing symptoms of anxiety and/or depressive disorder*
January-June 2019
May 14-19, 2020
8.2%
28.2%
6.6%
24.4%
11.0%
33.9%
Symptoms of anxiety disorder
Symptoms of depressive disorder
Symptoms of anxiety or depressive disorder
* Based on self-reported frequency of anxiety and depression symptoms. They are derived from responses to the first two questions of the eight-item Patient Health Questionnaire (PHQ-2) and the seven-item Generalized Anxiety Disorder (GAD-2) scale.
Sources: CDC, NCHS, U.S. Census Bureau
statista

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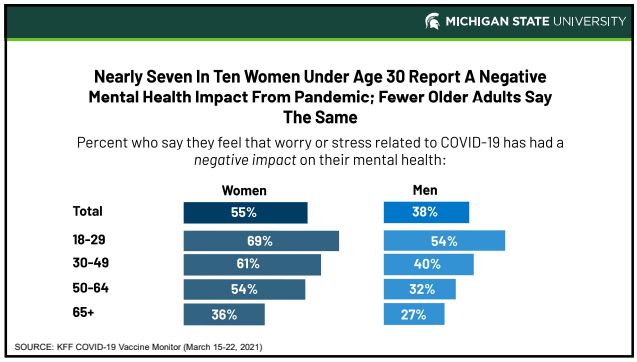
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Nearly Seven In Ten Women Under Age 30 Report A Negative Mental Health Impact From Pandemic; Fewer Older Adults Say The Same
Percent who say they feel that worry or stress related to COVID-19 has had a negative impact on their mental health:
Women
Men
Total 55% 38%
18-29 69% 54%
30-49 61% 40%
50-64 54% 32%
65+ 36% 27%
SOURCE: KFF COVID-19 Vaccine Monitor (March 15-22, 2021)

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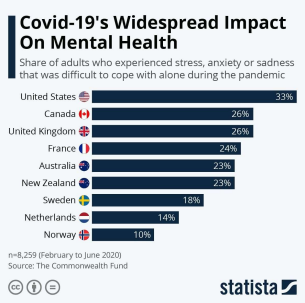

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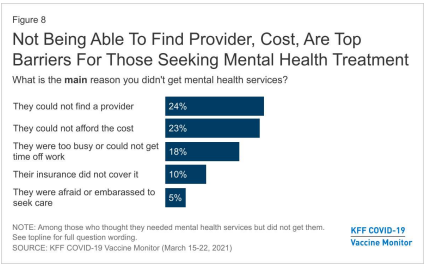

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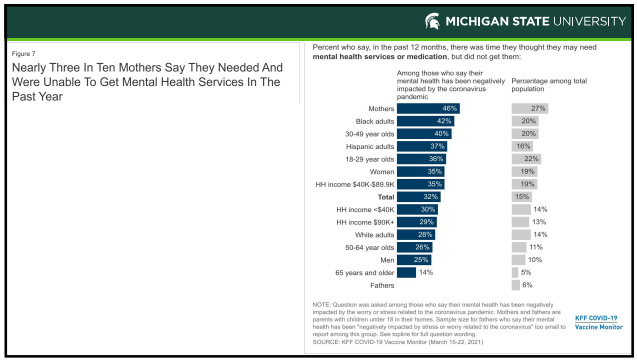

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International Journal of Environmental Research and Public Health

Article

Changes in Physical Activity and Sedentary Behavior in Response to COVID-19 and Their Associations with Mental Health in 3052 US Adults

Jacob Meyer [1,*,†], Cillian McDowell [2,†], Jerí Lansing [3], Cassandra Brewer [4], Lee Smith [5], Mark Tully [6] and Matthew Herring [3]

1 Department of Kinesiology, Iowa State University, Ames, IA 50011, USA; jerri@iastate.edu (J.L.); chrewer@iastate.edu (C.B.)
2 The Irish Longitudinal Study on Aging and School of Medicine, Trinity College Dublin, The University of Dublin, Dublin D02 R590, Ireland; Cillian.McDowell@tcd.ie
3 Cambridge Centre for Sport and Exercise Sciences, Anglia Ruskin University, Cambridge CB1 2LZ, UK; Lee.Smith@anglia.ac.uk
4 Institute of Mental Health Sciences, Ulster University, Coleraine BT37 0QB, UK; m.tully@ulster.ac.uk
5 Physical Activity for Health Research Cluster, Health Research Institute, Department of Physical Education and Sport Sciences, Limerick, Ireland; Matthew.Herring@ul.ie
6 Correspondence: jdmeyer@iastate.edu
† These authors contributed equally to this work.

Received: 7 August 2020; Accepted: 2 September 2020; Published: 5 September 2020

Abstract: The COVID-19 pandemic altered many facets of life. We aimed to evaluate the impact of COVID-19-related public health guidelines on physical activity (PA), sedentary behavior, mental health, and their interrelations. Cross-sectional data were collected from 3052 US adults 3–8 April 2020 (from all 50 states). Participants self-reported pre- and post-COVID-19 levels of moderate and vigorous PA, sitting, and screen time. Currently-followed public health guidelines, stress, loneliness, positive mental health (PMH), social connectedness, and depressive and anxiety symptoms were self-reported. Participants were grouped by meeting US PA guidelines, reporting 2/6 kday of sitting, and PMH (≥ 4/5 vs. <4/5). Participants (mean age = 46.2 ± 16.4 years; 52% female; 90% White) ranging from 26–28 (16.0% of sample) to 57+ (9.2%). Self-reported PA was lower post-COVID among participants reporting being previously active (mean change: −32.3%; 95% CI: −36.3%, −28.1%)] but largely unchanged among previously inactive participants (−2.5%; [−5.0%, +0.1%]). No longer meeting PA guidelines and increased screen time were associated with worse depression, loneliness, stress, and PMH (p < 0.001). Self-isolation/quarantine was associated with higher depressive and anxiety symptoms compared to social distancing (p < 0.001). Maintaining and enhancing physical activity participation and limiting screen time increases during abrupt societal changes may mitigate the mental health consequences.

International Journal of Environmental Research and Public Health

Article

Increase in Social Isolation during the COVID-19 Pandemic and Its Association with Mental Health: Findings from the JACSIS 2020 Study

Hiroshi Murayama [1,*], Ryo Okubo [2] and Takahiro Tabuchi [3]

1 Research Team for Social Participation and Community Health, Tokyo Metropolitan Institute of Gerontology, Tokyo 173-0015, Japan
2 Department of Clinical Epidemiology, Translational Medical Center, National Center of Neurology and Psychiatry, Tokyo 187-8551, Japan; ryo-okubo@ncnp.go.jp
3 Cancer Control Center, Osaka International Cancer Institute, Osaka 541-8567, Japan; takeshi-tabuchi@oicr.osaka.jp
* Correspondence: murayama@tmig.or.jp; Tel.: +81-3-3964-3241

The effects of social deprivation on adolescent development and mental health

Amy Orben*, Livia Tomova*, Sarah-Jayne Blakemore

Lancet Child Adolesc Health 2020; 4: 634–40

Published online July 13, 2020 https://doi.org/10.1016/S2352-4642(20)30186-3

Open-Free article

Department of Psychology (L Tomova PhD), Medical Research Council Cognition and Brain Sciences Unit and Emmanuel College (A Orben DPhil), University of

Adolescence (the stage between 10 and 24 years) is a period of life characterised by heightened sensitivity to social stimuli and the increased need for peer interaction. The physical distancing measures mandated globally to contain the spread of COVID-19 are radically reducing adolescents' opportunities to engage in face-to-face social contact outside their household. In this interdisciplinary Viewpoint, we describe literature from a variety of domains that highlight how social deprivation in adolescence might have far-reaching consequences. Human studies have shown the importance of peer acceptance and peer influence in adolescence. Animal research has shown that social deprivation and isolation have unique effects on brain and behaviour in adolescence compared with other stages of life. However, the decrease in adolescent face-to-face contact might be less detrimental due to widespread access to digital forms of social interaction through technologies such as social media. The findings reviewed highlight how physical distancing might have a disproportionate effect on an age group for whom peer interaction is a vital aspect of development.

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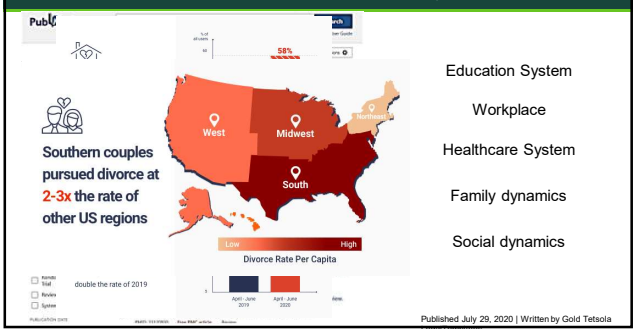

Education System

Workplace

Healthcare System

Family dynamics

Social dynamics

23

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Clinical Neuropsychiatry (2022) 19, 5, 328-334

COVID-19 ANALYSIS: IS THERE AN DEVELOPMENT OF

Avneesh Sachde

Abstract

Objective: The effects of COVID-19 infection were initi limited to the respiratory system; however, recent literature has systemic effects, even leading to cognitive deficits. The to review COVID-19 related literature to determine whether between COVID-19 infection and the development of cogni

Method: A search for articles relevant to COVID-19, co Montreal Cognitive Assessment Tool (MoCA), and the geri performed on the MEDLINE, CINAHL, and APA PsycInfo

Results: Substantial evidence exists that reports an asso COVID-19 infection and cognitive decline. The studies incl review surveyed distinct populations and reported cognitive patients as measured by a reduction in MoCA scores. While identified as partially reversible, there were still measurable post-recovery compared to healthy controls. Furthermore, tl deficits were found to be much worse in the geriatric popula

Conclusion: Current literature shows an association bet infection and the development of cognitive deficits. Further to characterize these cognitive deficits and determine the un pathogenesis. Initiatives to develop interventions to limit or deficits in post COVID-19 patients is crucial, especially the burden of disease within this population cohort.

Contents lists available at ScienceDirect

Journal of Psychiatric Research

journal homepage: www.elsevier.com/locate/jpsychires

Psychiatric and neurological complications of long COVID

Jolanta B. Zawilska, Katarzyna Kuczyńska

Department of Pharmacodynamics, Medical University of Lodz, Lodz, Poland, Muszynskiego 1, 90-151, Lodz, Poland

ARTICLE INFO

Keywords:
Long COVID
Mental health
Depression
Anxiety
Post-traumatic stress disorder
Cognitive deficits

ABSTRACT

COVID-19 was primarily considered a pulmonary disease with extrapulmonary manifestations. As the pandemic spread, there has been growing evidence that the disease affects various organs/systems, including the central and peripheral nervous systems. Accumulation of clinical data demonstrates that in a large population of survivors convalescents in the function of one or more organs may persist for a long time, a phenomenon commonly known as post COVID or long COVID. Fatigue and cognitive dysfunction, such as concentration problems, short term memory deficits, general memory loss, a specific decline in attention, language and praxis abilities, encoding and verbal fluency, impairment of executive functions, and psychomotor coordination, are amongst the most common and debilitating features of neuropsychiatric symptoms of post COVID syndrome. Several patients also suffer from compromised sleep, depression, anxiety and post-traumatic stress disorder. Patients with long COVID may demonstrate brain hypometabolism, hyperperfusion of the cerebral cortex and changes in the brain structure and functional connectivity. Children and adolescents represent a minority of COVID-19 cases, so not the pathogenesis, clinical characteristics, epidemiology, and risk factors of the acute phase of COVID-19 have been largely explained, these areas are yet to be explored in long COVID. This review aims to provide an update on what is currently known about long COVID effects on mental health.

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Journal of Alzheimer's Disease 79 (2021) 1015–1021
DOI 10.3233/JAD-201488
IOS Press

Short Communication

Effects of COVID-19 Home Confinement on Mental Health in Individuals with Increased Risk of Alzheimer's Disease

Natalia Soldevila-Domenech[a,b], Laura Forcano[a,c], Anna Boronat[a], Thais Lorenzo[a,b], Iris Piera[a], Albert Puig-Pijoan[a,d], Julian Maites[a], José María González de Echavarri Gómez[e,f], Iva Kouzovska[a], Anna Soteras[g], Karine Fauria[a,d], Nieves Pizarro[a,b], Jose Luis Molinuevo[a,c,f,g] and Rafael de la Torre[a,b,c,h] PENSA Study Group[i]
[a]Integrative Pharmacology and Systems Neurosciences Research Group, Neurosciences Research Program, Hospital del I
[b]Department
[c]CIBER de F
Spain
[d]Cognitive In
[e]Barcelonaβ
[f]Physiology a
Hospital del I
[g]CIBER de F

Abstract. We explored the impact of the Spanish COVID-19 strict home confinement on mental health and cognition in non-infected subjects (N = 16, 60–80 years) diagnosed with subjective cognitive decline and *APOE* ε3/ε4 carriers. Mental health was monitored for 2 months on a daily, weekly, or monthly basis, and compared to pre-confinement values. Emotional distress, anxiety, and depression scores increased to pathological threshold values during and after confinement. Those with lower mood during confinement experienced a decline in their mood after confinement. Cognition did not change. These preliminary results suggest that mental health consequences of corona measures in preclinical stages of Alzheimer's disease should be further evaluated.

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DOI: 10.1002/alz.12296

FEATURED ARTICLE

Alzheimer's & Dementia
THE JOURNAL OF THE ALZHEIMER'S ASSOCIATION

COVID-19 and dementia: Analyses of risk, disparity, and outcomes from electronic health records in the US

QuanQiu Wang[1] | Pamela B. Davis[2] | Mark E. Gurney[3] | Rong Xu[1]

Abstract

Introduction: At present, there is limited data on the risks, disparity, and outcomes for COVID-19 in patients with dementia in the United States.

Methods: This is a retrospective case-control analysis of patient electronic health records (EHRs) of 61.9 million adult and senior patients (age ≥ 18 years) in the United States up to August 21, 2020.

Results: Patients with dementia were at increased risk for COVID-19 compared to patients without dementia (adjusted odds ratio [AOR]: 2.00 [95% confidence interval (CI), 1.94–2.06], $P < .001$), with the strongest effect for vascular dementia (AOR: 3.17 [95% CI, 2.97–3.37], $P < .001$), followed by presenile dementia (AOR: 2.62 [95% CI, 2.28–3.00], $P < .001$), Alzheimer's disease (AOR: 1.86 [95% CI, 1.77–1.96], $P < .001$), senile dementia (AOR: 1.99 [95% CI, 1.86–2.13], $P < .001$) and post-traumatic dementia (AOR: 1.67 [95% CI, 1.51–1.86] $P < .001$). Blacks with dementia had higher risk of COVID-19 than Whites (AOR: 2.86 [95% CI, 2.67–3.06], $P < .001$). The 6-month mortality and hospitalization risks in patients with dementia and COVID-19 were 20.99% and 59.26%, respectively.

Discussion: These findings highlight the need to protect patients with dementia as part of the strategy to control the COVID-19 pandemic.

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SARS-CoV-2 and the Brain

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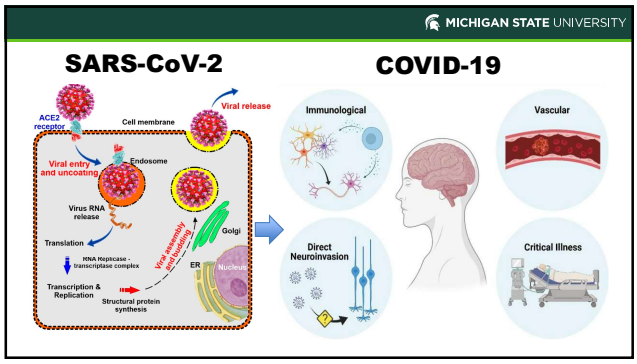
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SARS-CoV-2
COVID-19
ACE2 receptor
Cell membrane
Viral release
Endosome
Viral entry and uncoating
Virus RNA release
Translation
RNA Replicase - transcriptase complex
Transcription & Replication
Structural protein synthesis
Viral assembly and budding
Golgi
ER
Nucleus
Immunological
Vascular
Direct Neuroinvasion
Critical Illness

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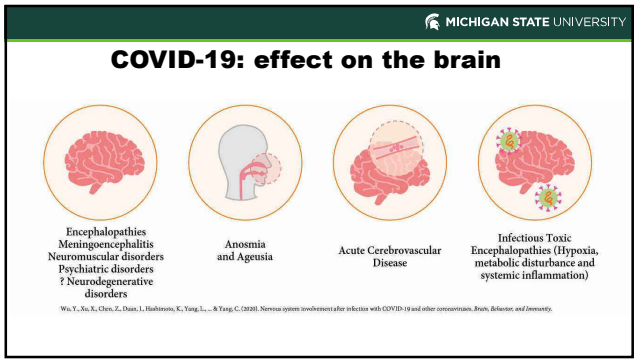
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COVID-19: effect on the brain
Encephalopathies
Meningoencephalitis
Neuromuscular disorders
Psychiatric disorders
? Neurodegenerative disorders
Anosmia and Ageusia
Acute Cerebrovascular Disease
Infectious Toxic Encephalopathies (Hypoxia, metabolic disturbance and systemic inflammation)
Wu, Y., Xu, X., Chen, Z., Duan, J., Hashimoto, K., Yang, L., ... & Yang, C. (2020). Nervous system involvement after infection with COVID-19 and other coronaviruses. Brain, Behavior, and Immunity.

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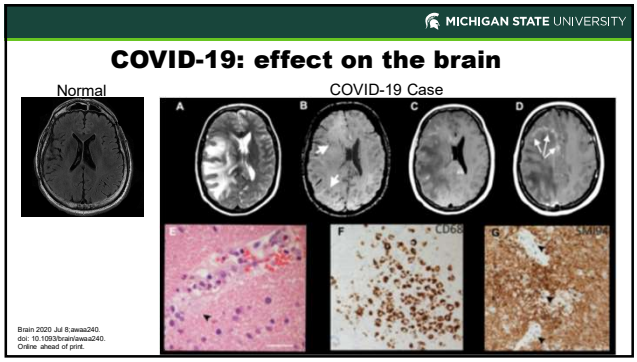
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COVID-19: effect on the brain
Normal
COVID-19 Case
A
B
C
D
F
G
CD68
SMI94
Brain 2020 Jul 8;awaa240.
doi: 10.1093/brain/awaa240.
Online ahead of print.

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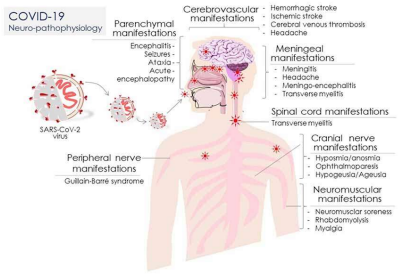
COVID-19: effect on CNS



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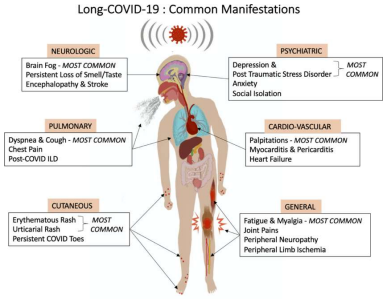
Long-COVID-19 : Common Manifestations



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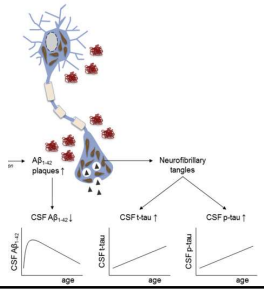
Alzheimer's disease: pathological markers

TABLE 1. AMYLOID-TAU-NEURODEGENERATION CLASSIFICATIONS FOR ALZHEIMER'S DISEASE	
NIA-AA Research Framework	
Amyloid (A)	Cerebrospinal fluid Aβ42, or Aβ42/Aβ40 ratio
	Amyloid-positron emission tomography
Tau (T)	Cerebrospinal fluid phosphorylated-tau
	Tau positron emission tomography
Neuro-degener-ation (N)	Anatomic MRI
	Fluorodeoxyglucose-positron emission tomography
	Cerebrospinal fluid total tau
Clinical Linkages for Individuals With Symptoms	
$A^+T^+N^+$	Prodromal Alzheimer's disease/mild cognitive impairment due to Alzheimer's disease
$A^+T^+N^?$	Alzheimer's disease dementia (can still be mixed dementia)
$A^-T^+N^-$	Cerebrovascular disease, prion disease, early tauopathies
$A^-T^+N^+$	Vascular dementia, tauopathies, dementia with Lewy bodies, primary age-related tauopathy
$A^-T^-N^+$	Limbic-predominant age-related TDP-43 encepha-lopathy



https://practicalneurology.com/articles/2019-june/alzheimers-disease-biomarkers

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DOI: 10.1111/ene.14703

ORIGINAL ARTICLE

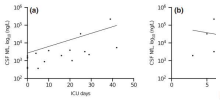
european journal of neurology

Biomarkers for central nervous system injury in cerebrospinal fluid are elevated in COVID-19 and associated with neurological symptoms and disease severity

Johan Virhammar[1] | Anja Näås[2] | David Fällmar[2] | Janet L. Cunningham[3] | Andrea Klang[3] | Nicholas J. Ashton[4,5,6,7] | Sven Jacobsson[2] | Gabriel Westman[2] | Robert Frithiof[8] | Kaj Blennow[4,5] | Henrik Zetterberg[4,5,12,13] | Eva Kumlien[2] | Elham Rostami[8]

CSF BIOMARKERS IN PATIENTS WITH COVID-19

FIGURE 1 Correlation between neurofilament light chain (NFL) protein in cerebrospinal fluid (CSF) and (a) number of days in intensive care unit (ICU), and (b) worst Glasgow Coma Scale (GCS) before the lumbar puncture.



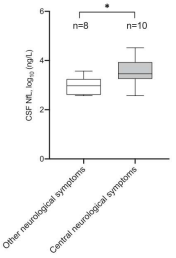


FIGURE 2 The levels of neurofilament light chain (NFL) protein in cerebrospinal fluid (CSF), given as logarithmic data, in patients with central neurological symptoms and other neurological symptoms.

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cells

MDPI

Article

Characterization and Biomarker Analyses of Post-COVID-19 Complications and Neurological Manifestations

Bing Sun [1], Naritsa Tang [1], Michael J. Peluso [2], Nikita S. Iyer [2], Lonnel Torres [2], Joanna L. Donatelli [2], Sadie E. Munter [2], Christopher C. Nixon [2], Rachel L. Rutishauser [2], Isabel Rodriguez-Barraquer [2], Bryan Greenhouse [2], John D. Kelly [2], Jeffrey N. Martin [2], Steven G. Deeks [2], Timothy J. Henrich [2] and Lynn Puliafito [1,*]

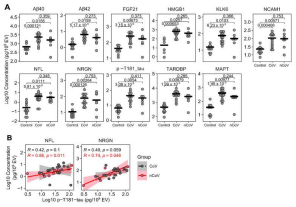

Figure 5. Protein levels of nEV cargo. (**A**) nEV lysates were analyzed using MSD (NFL), ELISA (HMGB1), and Luminex (the rest). Concentrations were normalized to nEV counts. All nEV proteins showed significant increase in both CoV (n = 16) and nCoV (n = 8) participants compared to historic Control participants (n = 12 except HMGB1 where n = 6). No differences were found between the CoV and nCoV groups. Kruskal–Wallis tests showed groups were different in all proteins ($p < 0.01$ for all proteins). Subsequent post hoc Dunn tests with BH correction were performed for groupwise comparisons and are shown in the figures. Horizontal bars indicate group means. (**B**) nEV p-T181-tau significantly correlated with NFL or neurogranin (NRGN) in nCoV (n = 8), but not in the CoV group (n = 16) (Spearman's correlation).

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Alzheimer's Disease

"I have lost myself"

Auguste D.

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ANNALS of Clinical and Translational Neurology
Open Access
RESEARCH ARTICLE

COVID-19 and the risk of Alzheimer's disease, amyotrophic lateral sclerosis, and multiple sclerosis

Hanyu Zhang[1,2] & Zengyuan Zhou[1,2]
[1]Department of General Practice, Clinical Medical College & Affiliated Hospital of Chengdu University, Chengdu, Ch
[2]Department of Nutrition, Chengdu Women's and Children's Central Hospital, School of Medicine, University of Ele
Technology of China, Chengdu, China

COVID and Neurodegenerative Diseases

H. Zhang & Z. Zhou

Outcome	Exposure	OR	P
AD and AD-by-proxy			
	COVID-19 infection	1.047(1.037,1.059)	2.73E-19
	hospitalized COVID-19	1.021(1.010,1.041)	3.48E-03
	severe COVID-19 infection	1.010(0.999,1.021)	0.071
UK Biobank			
	COVID-19 infection	1.001(1.000,1.0025)	0.015
	hospitalized COVID-19	1.0009(1.00000,1.0017)	0.022
	severe COVID-19 infection	1.0004(1.00007,1.00008)	0.019

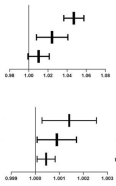

Figure 2. Forest plot of primary analysis for association between each phenotype of COVID-19 and AD.

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Quality of Life

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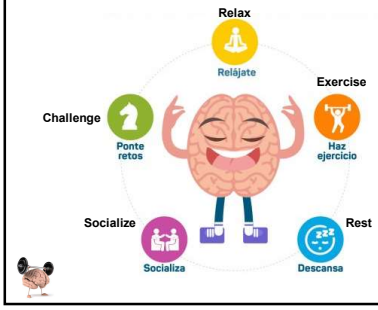

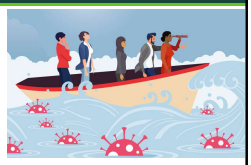

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Preguntas

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Dr. Linda Keilman, DNP, RN, GNP-BC, FAANP
(1.5 Pain CEUs) Dr. Linda Keilman has been a nationally certified Gerontological Nurse Practitioner since 1989 and teaching nursing since 1983. She has been a faculty member in the College of Nursing at MSU since 1992 her current MSU Health Team practice is providing primary care for residents in long-term care.

How to Assess Pain in Older Adults with Cognitive Decline

November 11, 2022

1

Objectives:

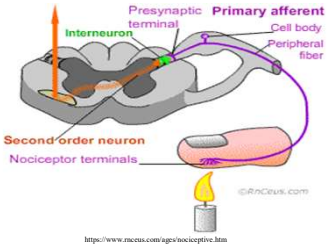
1. Discuss approaches to assessing pain in older adults (OA) with cognitive impairment (CI).
2. Describe pain tools that can be utilized for assessing pain in OA with CI.
3. List common <u>observational</u> signs/symptoms of pain in OA with CI.
4. Discuss nonpharmacologic approaches to pain management.

2

What is Pain?

3

- A <u>personal experience</u> influenced by aspects of biological, psychological & social factors
- Cannot be inferred solely from activity in sensory neurons
- Pain & nociception *(detection of painful stimuli)* are different
- Nociceptive pain:
  - Transduction
  - Conduction
  - Transmission
  - Modulation
  - Perception



https://www.rnceus.com/ages/nociceptive.htm

4

- Individuals <u>learn</u> the concept of pain through lived experiences
- A report of a pain experience should be respected

- Pain generally serves an adaptive role
- Pain may have adverse effects on function, social & psychological well-being
- Verbal description is one way to express pain
- Inability to communicate does not negate the possibility that a human or animal is experiencing pain *(International Association for the Study of Pain [IASP], 2020)*

5

- Definition of pain should be valid for acute & chronic pain
  - Acute pain = caused by injury, surgery, illness, trauma or painful medical procedure; lasts short time; usually disappears when treated/healed; serves as warning sign of disease or threat to the body *(ISAP, n.d.)*

  - Chronic pain = lasts months or years; happens in all body parts; interferes with daily life; can lead to anxiety/depression *(Cleveland Clinic, 2021)*

6

- **An unpleasant sensory & emotional experience associated with actual or potential tissue damage, or described in terms of such damage** *(IASP, 1979)*
- **The clinician must accept the patient's report of pain** *(American Association of Pain, 2003)*
- **A subjective experience & no objective tests exist to measure it** *(American Pain Society, 2009)*
- **Whatever the experiencing person says it is, existing whenever the person says it does** *(McCaffery, 1968)*

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- **An unpleasant sensory & emotional experience associated with, or resembling that associated with, actual or potential tissue damage** *(Raja et al., 2020)*
- **Types of pain:**
  - **Nociceptive = external injury**
    - **Inflammatory = body response; swelling, redness, purple/yellowing skin; ↑ sensitivity**
  - **Neuropathic = description; associated with injury or disease of nerve tissue**
  - **Functional = without obvious origin**

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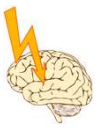
Normal Aging Cognitive Changes:

- **Subtle**
- **Over time**
- **Takes longer to:**
  - **Pull information from memory** *(storage)*
  - **Recall names & numbers** *(personal experience)*
- **Memory of life events & accumulated knowledge of learned facts & information decline** *(declarative or explicit memory)*
- **Remembering "how to" remains largely intact** *(procedural, implicit, or non-declarative memory)*



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- **The ability to timely recall a specific piece of information declines** *(working memory)*
- **Processing speed & problem-solving decrease**
- **Ability to pay attention becomes more difficult**
  - **Selective attention**
  - **Divided attention**
- **Gradual losses to sensory system**
  - **Vision**
  - **Hearing**
  - **Taste**
  - **Smell**
  - **Touch**

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Normal Aging Structural Changes:

- **Brain volume/mass decreases:**
  - **Prefrontal cortex**
  - **Cerebellum**
  - **Hippocampus***

  Initially changes the most with aging

- **Cortical thinning/density decreases:**
  - **Cerebral cortex**
    - **Frontal lobes***
    - **Temporal lobes**

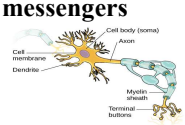
    Cortical thinning occurs with changes in neuron cell bodies
- **Myelin & white matter shrink**
  - ***Slows down processing; cognitive function***

11

Neurotransmitter Systems:

- **Neurotransmitter = chemical messengers**
  - **Brain generates fewer; die**
  - **Decrease in:**
    - **Dopamine**
    - **Acetylcholine**
    - **Serotonin**
    - **Norepinephrine**

    May lead to cognitive decline, decreased memory & depression



- **Blood flow to brain may decrease**
  - **Less oxygen to cells**

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GOOD NEWS!

- Can learn throughout lifetime
  - Meaning
  - Purpose
- Improves in middle aging:
  - Verbal abilities
  - Spatial reasoning
  - Math
  - Abstract reasoning
- Brain remains relatively plastic with aging

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- OA tend to under report pain
- Individuals with CI may experience pain differently
- CI impairs ability to describe symptoms
- When CI becomes dementia, the ability to communicate & remember pain becomes increasingly difficult
- Pain is undertreated in dementia *(Sarbacker, 2014)*
- Presentation of pain may be non-specific
- Consider pain the 1st vital sign
- There are no universal tests for pain

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- All pain is a very individualized subjective experience
- Chronic pain is one of the most common conditions in OA & is associated with substantial disability & costs *(Reid et al., 2016)*
- OA living with dementia are at risk for multiple sources & types of pain *(Horgas, 2012)*
- Untreated pain in CI OA can delay healing, disturb sleep & activity patterns, reduce function, reduce quality of life (QoL) & prolong hospitalization

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Assessment Guidelines:

- **Attempts should be made to obtain self-report of pain** *(Herr et al., 2011)*
  - **Yes/no**
  - **Vocalizations**
  - **Gestures**

- **Search for potential causes of pain**
  - **Pathologic conditions** *(trauma, arthritis, wounds, history of persistent pain, procedures)*
- **Observe behaviors**

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- **Proxy Reporting**
  - **Family members ***
    - **Compare customary behavior to current**
  - **Caregiver input ****
    - **Front-line staff (CNAs)**
    - **Other facility staff**

- **Attempt an analgesic trial**
  - **If no conditions/causes are identified, a low dose of an analgesic trial should be given**
    - **Based on pathology, analgesia history & things the person enjoys**

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However …

- **Must use NPAs at the same time**
- **Observation**
  - **What works & does not work?**
  - **Trial & error**

- **Documentation – <u>EXTREMELY</u> important!**
  - **Effectiveness of medication**
  - **Effectiveness of NPAs**
  - **How do you know?**

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Common Pain Behaviors:

- **Facial expressions** *(frowning, grimacing, distorted expression, rapid blinking)*
- **Verbalizations/vocalizations** *(sighing, moaning, grunting, calling out, asking for help, verbal abuse)*
- **Body movements** *(rigid posture, tense, guarding, fidgeting, increased pacing/rocking, gait or mobility changes [inactivity, restlessness, wandering])*
- **Changes in interpersonal interactions** *(aggressive, combative, resisting care, disruptive, withdrawn, socially inappropriate)*

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- **Changes in activity patterns or routine** *(appetite change, refusing food, throwing food, sleep pattern changes, sudden cessation of common routines)*
- **Mental status change** *(crying, increased confusion, irritability, distress)*

- **Physiological changes:**
  - **Increased heart rate**
  - **Increased blood pressure**
  - **Increased respiratory (breathing) rate**
  - **Diaphoresis**
  - **Pupil dilatation**

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TOOLS

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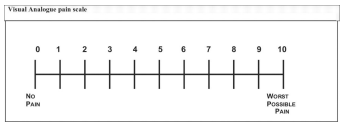
Mild to Moderate CI or Dementia:

- **Simple**
- **Pictorial**
- **Reliable & valid**
- **Evidence-based**
- **Types:**
  - **Visual analog scales** (VAS)
  - **Faces Pain Scale**
  - **Numeric rating scale** (NRS)



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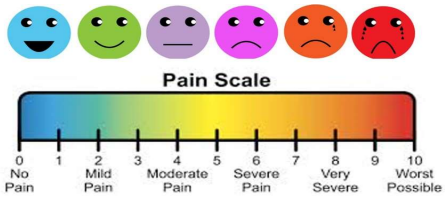
Organizations using the Wong-Baker FACES® Pain Rating Scale may need a licensing agreement



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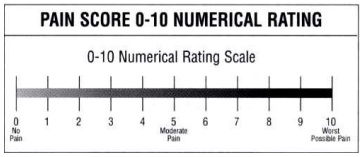

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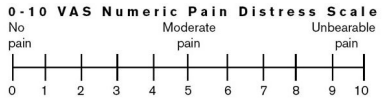

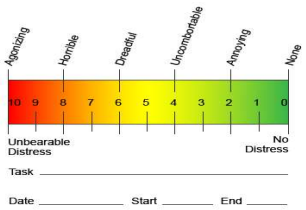

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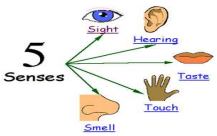
Advanced or Severe Dementia:

- **More difficult**
- **Attempt self-report 1st!**
- **Observation scales**
  - **Developed to provide a clinically relevant & easy to use observational pain assessment tool for individuals with advanced dementia**
- **Example**
  - **Pain Assessment in Advanced Dementia** (PAINAD)



26

PAINAD:

- **Observe the individual x 3 - 5 minutes before scoring**
- **5 variables: breathing, vocalization, facial expression, body language, consolability**
- **Different circumstances:**
  - **Resting**
  - **Engaged in a pleasurable activity**
  - **During movement** *(personal care, transfer, ambulation, etc.)*
  - **When alone & with others**
  - **After administering pain medication**

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Risk of Medication Use for Pain Treatment

- **Decrease in muscle mass**
- **Increased fat mass**
- **Decreased renal clearance**
- **Reduction of hepatic phase I reactions**
  (oxidation, hydrolysis, reduction)
- **Decreased serum albumin**
- **Increased sensitivity to centrally acting drugs**

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- **Assessing for pain**
  - **Know the individual's "usual" self**
  - **Looking for signs/symptoms of change**
    - **Mood**
    - **Not wanting to attend normal activities**
    - **Body language**
  - **Investigate for clues**
    - **Why is there a change?**
    - **What is different?**
      - **New meds, unreported fall/injury, specific visitors**

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- ***Nonpharmacologic Approaches (NPAs)***
  - **Need to take a holistic approach**
  - **Strategies:**
    - **Walking**
    - **Positioning**
    - **Repositioning**
    - **Redirecting**
    - **Massage**

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It Takes a Village

24/7 Care!

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Barriers to Pain Management

Ageism
Attitude
Biases
Misinformation
Comorbidities
Misconceptions
Lack of Training/Education
Personality
Cost
Fears
Communication Difficulties
Lack of teamwork/collaboration
Regulatory Scrutiny
Cultural or Religious Beliefs
Not Knowing the Person's Story
Lack of Resources
Lack of Assessment Skills
Lack of Geriatricians & GNPs

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- ***Myths:***
  - **Pain is inevitable & normal in OA**
  - **OA experience *less pain* than their younger counterparts**
  - **If a person doesn't say they are in pain, they must <u>not</u> be having pain**
  - **If a person does not look like they are in pain, they probably are <u>not</u> having pain**
  - **Most individuals with CI & dementia are unable to report their pain**
  - **Doctors & nurses are the experts on pain**

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- Many OA expect pain with aging
- Many OA fail to report pain because they do not want to be a nuisance to staff or they get tired of asking for pain management & are not listened to *(Herr & Garand, 2001)*
- OA sometimes have fear of the consequences of acknowledging their pain
- Behaviors & vocalizations are often attributed to cognition & pain is not considered *(Chandler & Bruneau, 2014)*
- Psychotropic drugs mask pain

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Nonpharm Approaches (NPAs)

* = empirically supported; evidence based

35

Advantages:

- Addresses the psycho-social-spiritual-cultural-environmental potential reason for the pain
- Holistic & person-centered
- Avoids use of medications that can decrease QoL
- Preserves communication & interaction
- Creates memorable moments

- Improves/maintains QoL for all involved

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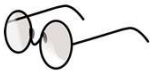
- * √ **Activities** *(pleasurable, hobbies)*
- * √ **Assistive devices**
  - **Eyeglasses, hearing aids, canes, WC; shoes, clothing**



- * √ **Bathing alternatives**
  - **Bathing without a Battle** *(Barrick et al., 2002)*
- * **Behavior plans** *(individualized care plans)*
- * **Communication**
  - **Slow, repetitive, simple explanations**
- * **Consistent daily routines**

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- * √ **Distraction / diversion**
  - **Person-centered**
  - **Everyone is a unique individual**

- * √ **Education** *(staff, caregivers, families & providers)*
  - **Lack of intentionality, dementia & delirium sx, communication skills, physical approach during ADLs & transfers, focus on emotion vs. content (validation), directions 1 step @ a time, use of distraction vs. logic, predictable schedule, use familiar staff**

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- * √ **Environment modification**
  - **Lighting, sound, temperature, smells**
  - **Home-like**
  - **Decrease stimulation**
  - **Comfortable seating** *(arms, back support)*
  - **Mattress** *(pressure redistributing)*
  - **Bed height**
  - **Positioning/repositioning** *(neutral body alignment)*
  - **Smooth & tight linens**
  - **De-clutter**
  - **Placement of furniture**

39

- * √ **Exercise** *(physical activity)*
  - **Aerobic, low impact, water** *(hydrotherapy)*
  - **Stretching & strengthening are effective exercises for improving pain & function**
  - **Tai chi, Pilates, yoga, chair**
- **Humor & laughter**

- * **Listening**
  - **Active, reflective, intentional**
- **Logs** *(tracking: B&B, behaviors, pain, sleep)*
- * √ **Massage** *(body, feet, hands, legs)*
- **Mindfulness meditation**

40

- * √ **Music or music therapy** *(MT)*
- * **Observation**
- * √ **Packs:**
  - **Cold** *(numb)*; **heat** *(sore muscles; old injuries)*
- * **Pet visitation; animal assisted therapy (AAT)**
- **Photography**
- * **Presence –being with; empathic**
- * √ **Relaxation techniques**

- * √ **Reminiscence; life review**
- **Silence (therapeutic; compassionate intention)**

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- * **Sleep hygiene**
- * **Social interaction**
- **Spirituality / religion / faith**
- * √ **Transcutaneous Electrical Nerve Stimulation** (TENS)
- **Therapeutic use of self**
  - ***YOU are an intervention!***

- **Touch**
  - **Therapeutic (TT); healing; M-technique (stroking in cycles of 3)**
  - **Rocking, holding, cuddle, hug, handshake**

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- Visits, telephone calls, Skype, Zoom
  - Friends, family, health care professionals, staff, community organizations
- Lifestyle changes:
  - Adequate sleep
  - Balanced diet
  - Drinking plenty of water
  - Limiting caffeine
  - Smoking cessation

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PEARLS

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Pain is always subjective!

Pain can exist even when no physical cause can be found!

Assume that OA with CI or dementia have pain if they have conditions typically associated with pain!

OA are unique individuals with their own needs, wants & desires! Options & choices are paramount!

45

A uniform pain threshold does not exist!

A pain assessment should address the physical, psychological & spiritual aspects of pain!

NPAs are effective in pain management!

Know the person's story!

Be proactive, preventative, positive & hopeful!

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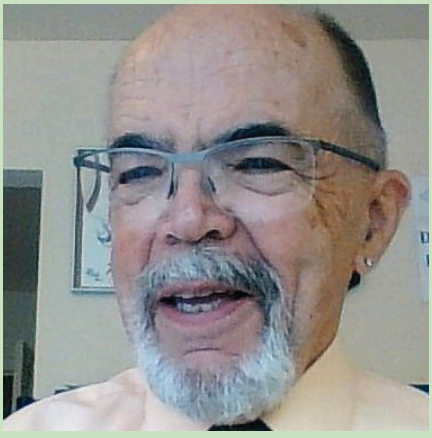
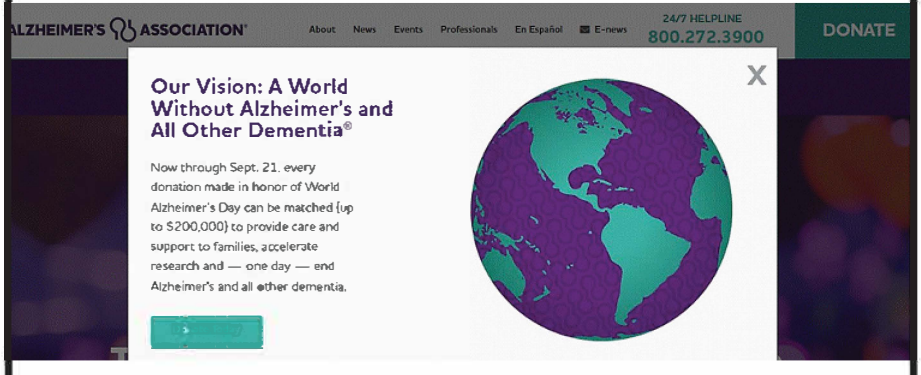


Jim Mangi is a Vietnam veteran, a scientist, and founder and owner of a nationwide consulting firm—none of which prepared him for his retirement career as a caregiver for his wife, who is now in her 14th year of living with Younger Onset Alzheimer's disease. Jim is now a volunteer Community Educator for the Alzheimer's Association, and a dementia awareness activist


TOGETHER
WE CAN END


INVACARE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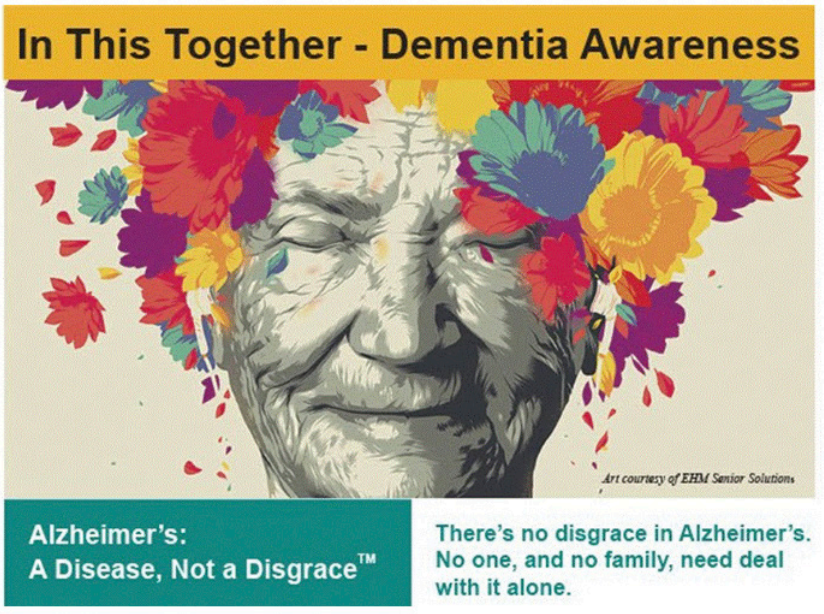
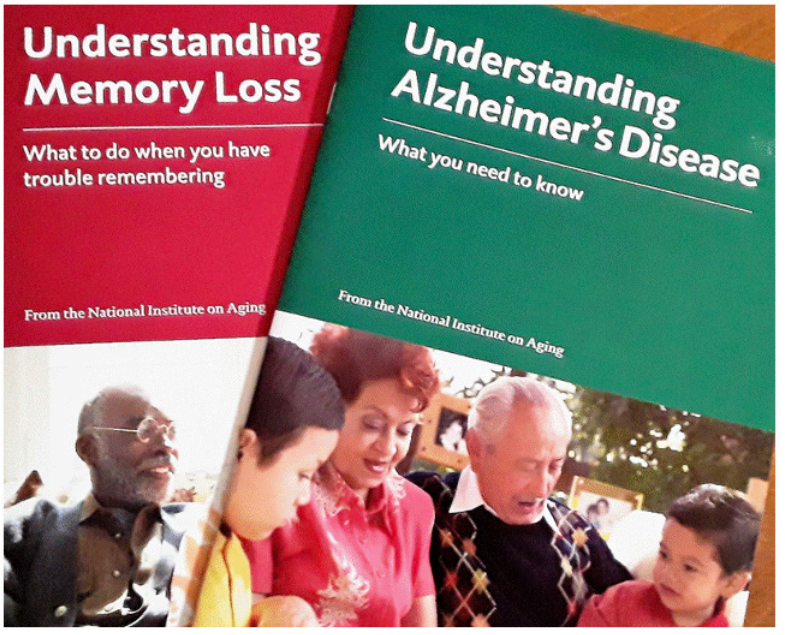
Now through Sept. 21, every donation made in honor of World Alzheimer's Day can be matched (up to $200,000) to provide care and support to families, accelerate research and — one day — end Alzheimer's and all other dementia.

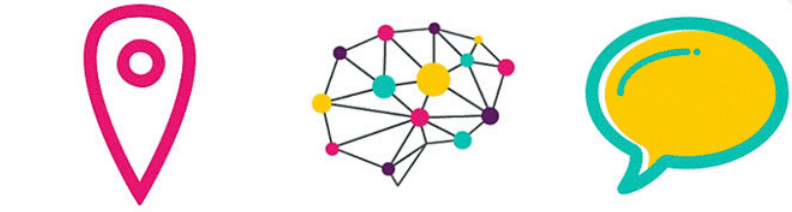

In This Together - Dementia Awareness
Art courtesy of EHM Senior Solutions
Alzheimer's:
A Disease, Not a Disgrace™
There's no disgrace in Alzheimer's.
No one, and no family, need deal
with it alone.


In This Together - Dementia Awareness
DEMENTIA AWARENESS TALK 1 MAY 7 PM OR 4 MAY 10 AM
ALZHEIMERS A DISEASE NOT A DISGRACE 1 MAY 7PM & 4 MAY 10 AM
UNDERSTAND ALZHEIMERS 15 MAY 7 PM
DEMENTIA - EFFECTIVE MESSAGES 22 MAY 7 PM
A FAMILY'S DEMENTIA JOURNEY 7PM WED. 29TH
DEMENTIA DISCUSSIONS 7PM WED. 5 JUNE
UNDERSTAND DEMENTIA BEHAVIORS 7PM WED. 12TH
DEMENTIA LEGAL & FINANCIAL PLANS 7PM WED. 19TH
DEMENTIA INTERACTION SKILLS PT1 7PM WED. 26TH
A DEMENTIA-FRIENDLY CITY? 7PM WED. 17TH
A DEMENTIA-FRIENDLY COMMUNITY? 7PM WED. 17TH


Understanding Memory Loss
What to do when you have trouble remembering
From the National Institute on Aging
Understanding Alzheimer's Disease
What you need to know
From the National Institute on Aging

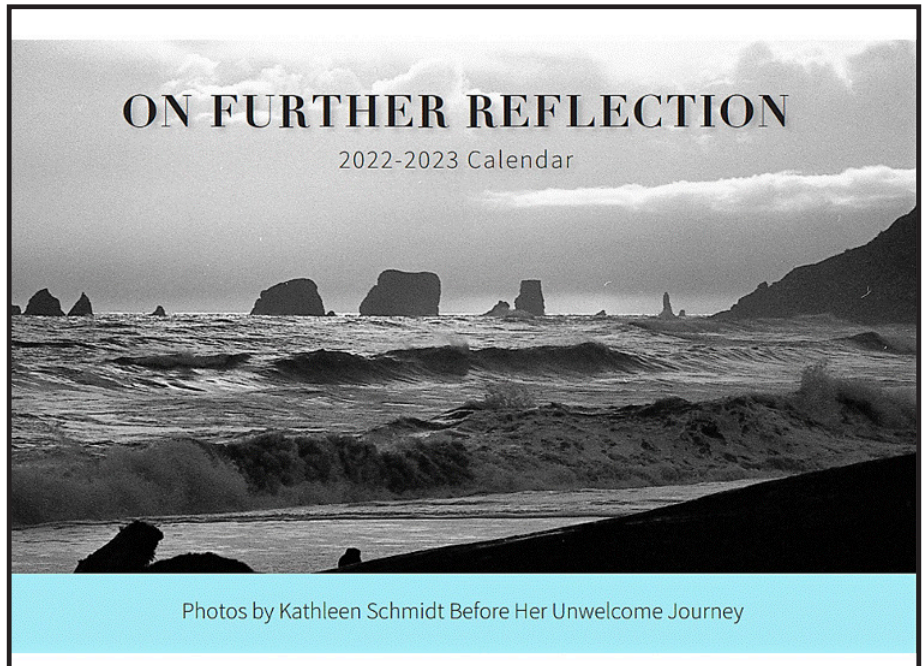
MICHIGAN DEMENTIA COALITION

The Michigan Dementia Coalition is a group of organizations and individuals working together to improve quality of life for people living with dementia and their families. We are powered by our passion. Our vision is to make Michigan a dementia capable state.



WHOEVER YOU ARE,
HOWEVER YOU ARE,
YOU ARE WELCOME
TO OUR
"COME AS YOU ARE"
MEMORY CAFÉ
SEP 21, 2022
2-4 PM

Feel free to come early and stay late—
you are among friends


ON FURTHER REFLECTION
2022-2023 Calendar
Photos by Kathleen Schmidt Before Her Unwelcome Journey


I Will
Always
Love You