

Latinos and Alzheimer's Disease

*William A. Vega, Distinguished Professor,
Stempel College of Public Health and Social Work*

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Presentation Aims

- Normative vs non-normative brain function and pathology over the life course
- National and Latino aging demographic profiles, risk factors for health and pathways to AD
- AD as a life span health disparity for Latinos
- Prevalence projections of cases and costs to 2060
- Strategies to interrupt the acceleration of cases in Latino aging

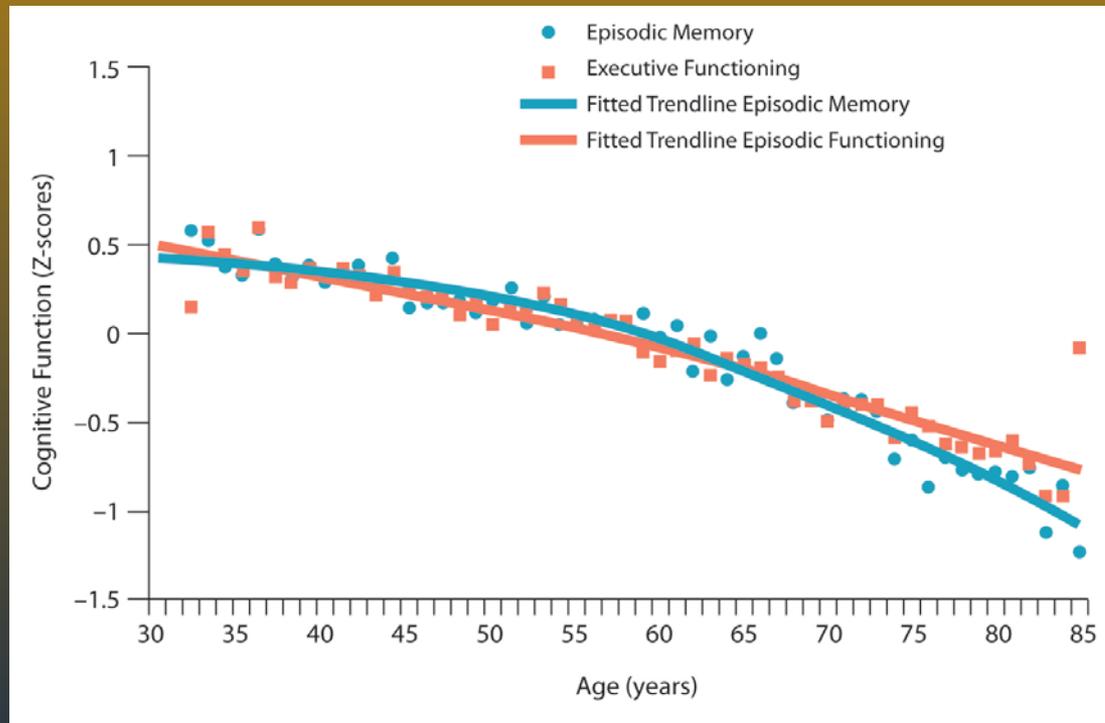
Immigrant Health Advantage in US

- Two sides of the immigrant health paradox: great health then declines in later adulthood
- Latino immigrants of Mexican origin life expectancy is about 4 years longer than the overall US population, almost 81 years, lower death rates for heart disease, breast and lung cancers
- Immigrants have healthier babies and fewer serious health problems in early and middle adulthood than the US population, lower smoking and drug dependence
- US born Latinos have inferior health trajectories compared to immigrants

Immigrant Health Advantage (cont.)

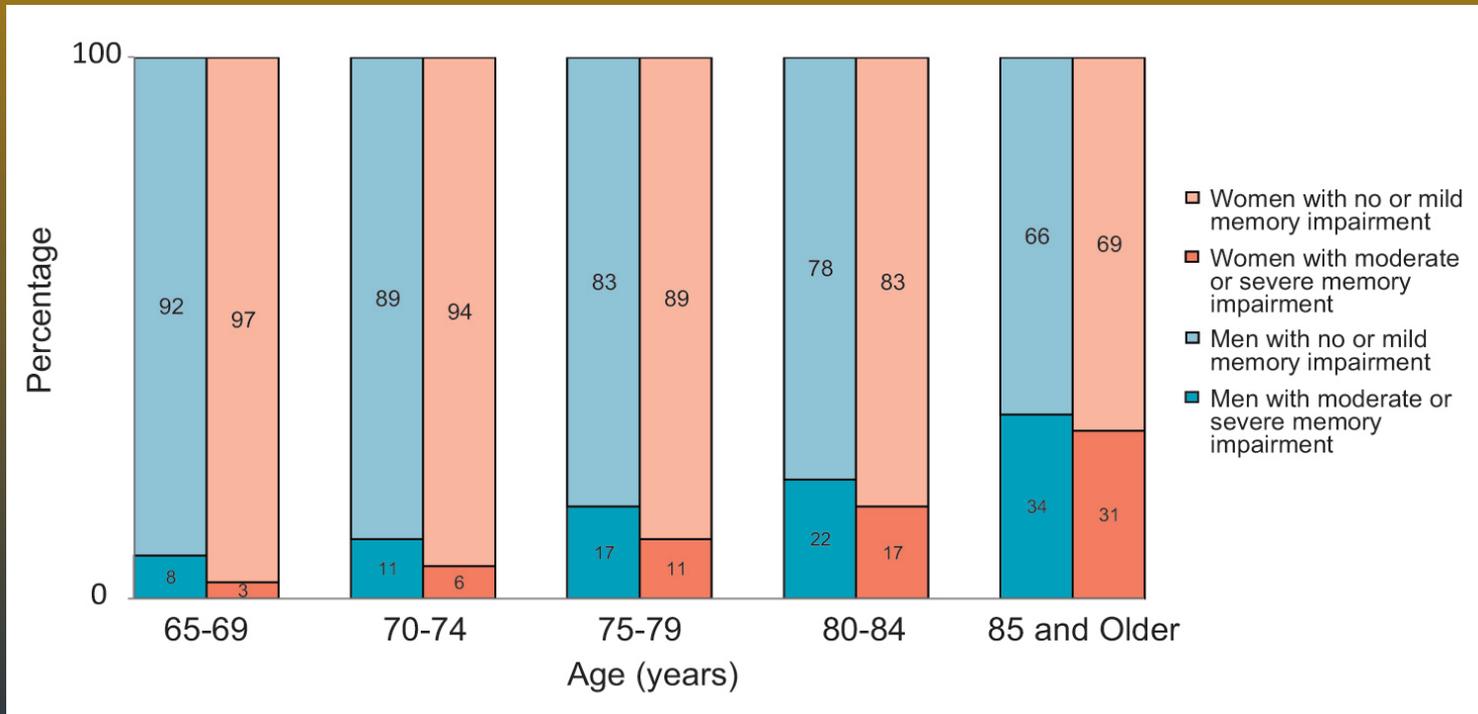
- The longer you live in the US and younger you are at age of arrival the greater the health risk for immigrants
- At the age of 65 life expectancy is similar in Mexico, Colombia, and Chile to the US despite much higher poverty rates in Latin America
- *Immigrants suffer loss of health advantage over 60 years of age, including high rates of chronic diseases and dementia, limitations in physical functions, despite longer life expectancy*

Difference in Some Domains of Cognitive Function by Age (MIDUS II, N=4,268, United States, 2004-2006)



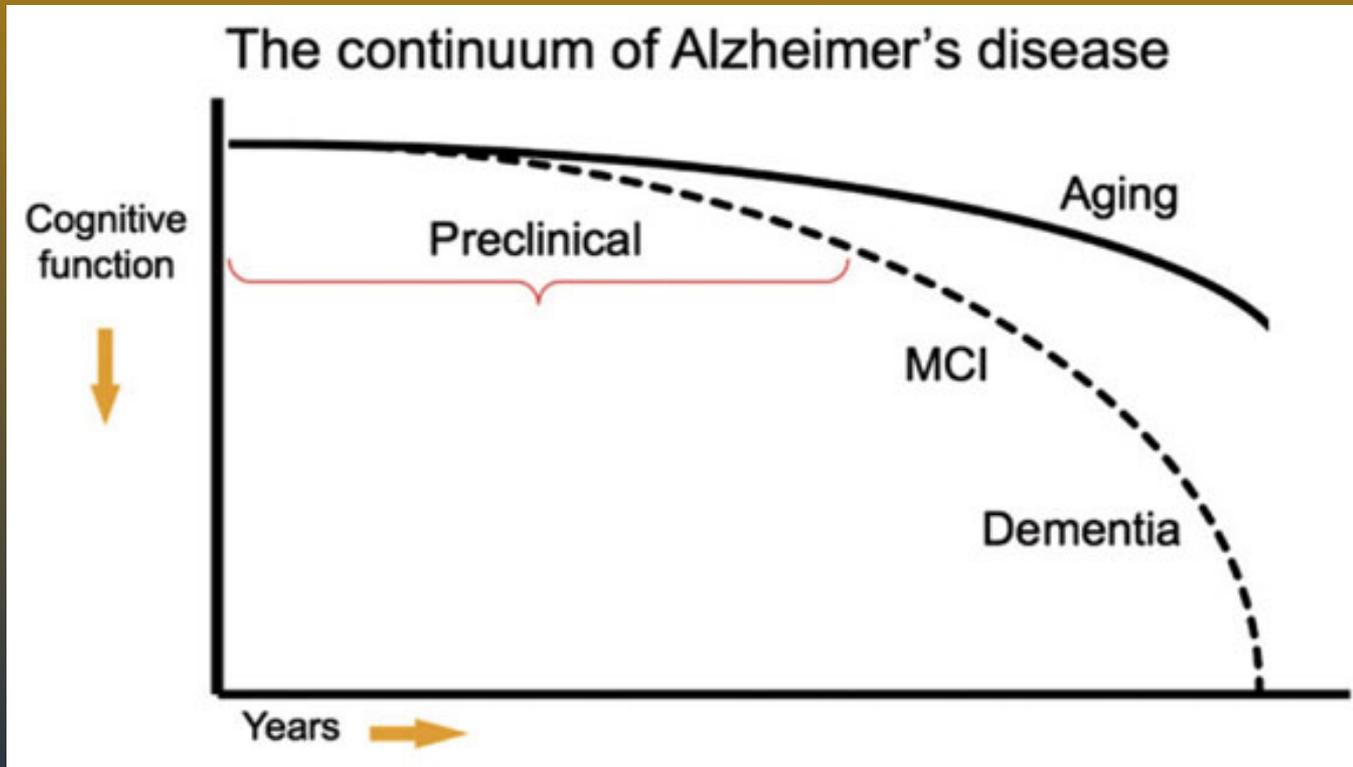
SOURCE: Lachman, M. E. 2014. *Monitoring Cognitive Functioning: National Survey of Midlife in the United States (MIDUS)*. Presentation given to the IOM Committee at the April 2014 workshop.

Proportions of people ages 65 and older with moderate or severe memory impairment versus no or mild memory impairment

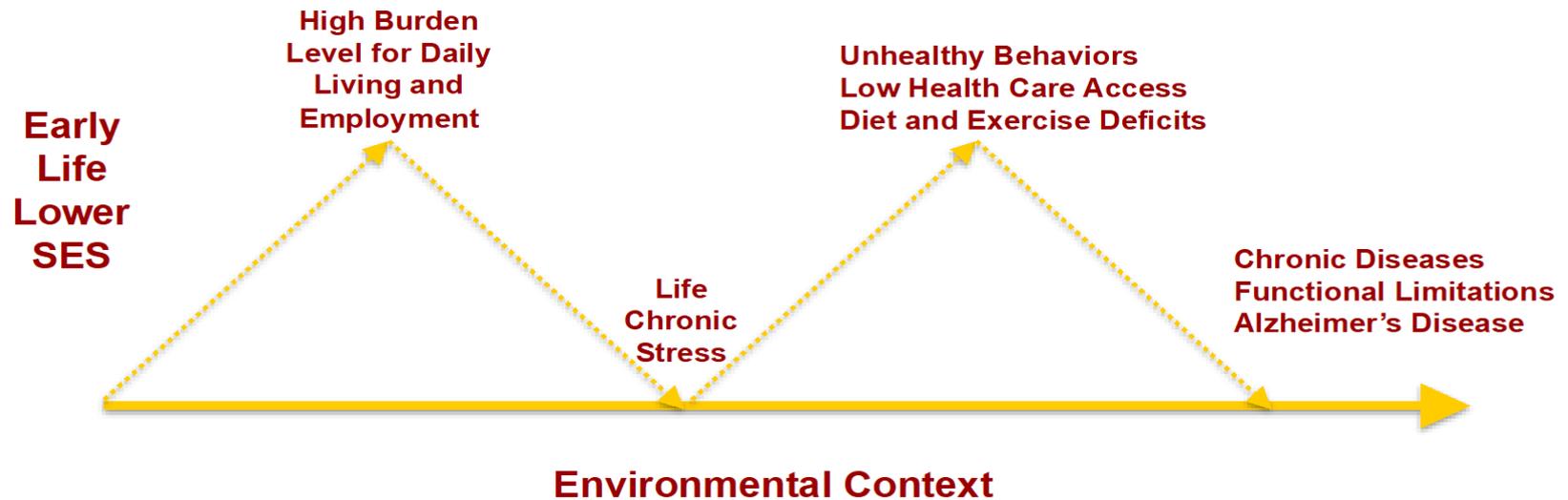


Health and Retirement Study, United States, 2002. SOURCE: FIFARS (Federal Interagency Forum on Aging-Related Statistics). 2004. Indicator 17: Memory impairment

A Longitudinal View of AD and Cognitive Performance

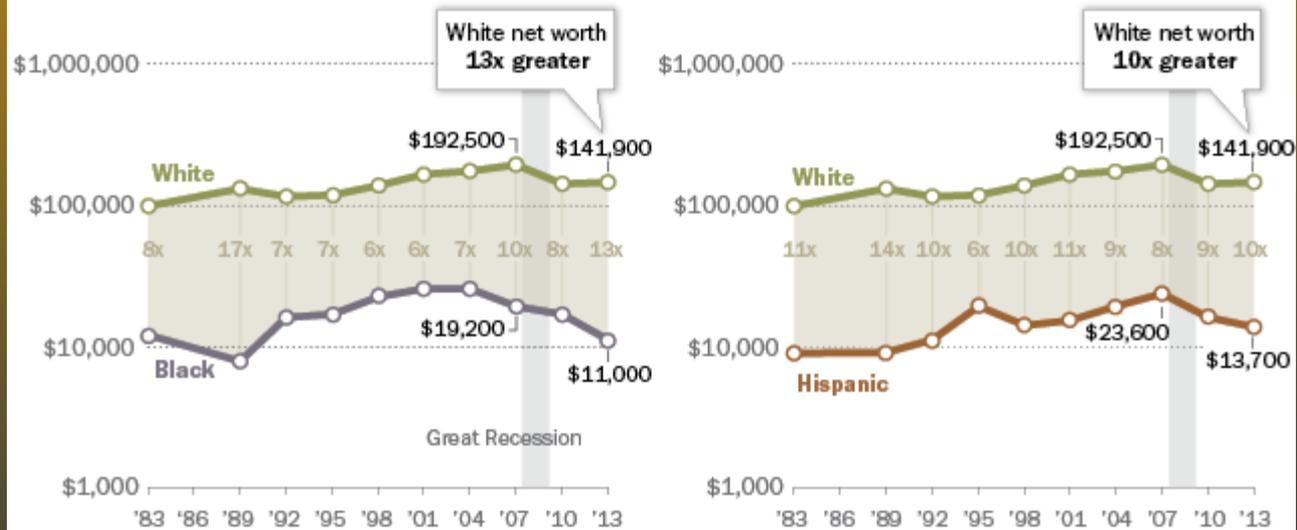


Social Determinants and AD Risk: Causal Chain of Effects



Racial, Ethnic Wealth Gaps Have Grown Since Great Recession

Median net worth of households, in 2013 dollars



Notes: Blacks and whites include only non-Hispanics. Hispanics are of any race. Chart scale is logarithmic; each gridline is ten times greater than the gridline below it. Great Recession began Dec. '07 and ended June '09.

Source: Pew Research Center tabulations of Survey of Consumer Finances public-use data

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US older population growth

Matthews, K. et al, Racial and ethnic estimates of Ad and related dementias in the US in adults over 65. AD and Dementia 15 (2019) 17-24

US population 65 of age or older increases 83.7% by 2060, and minority population becomes 45% of the new total of all people over 65

Specific ethnic subgroup levels of change by 2060 are:

75% for White non-Hispanics,

172 % for African Americans,

270% for Asians,

274% for American Indians,

391% for Hispanics

U S AD Prevalence of AD for > 65 based on medical expenditure data

(Matthews, A, et al. AD & Dementia, 15 (2019) 17-24)

	Men	Women
Non Hispanic Whites.	8.3	11.9
African Americans.	13.8	15.1
Asians	7.0	9.5
Hispanics	9.9	13.9
American Indian	7.9	10.0

Risk Factors Among Latinos

Gonzalez, H, et al. <https://doi.org/10.2337//dc17-1896>

- Hispanics have the highest rate of metabolic syndrome of all US ethnic groups
- Metabolic syndrome is associated with lower global neurocognition, mental status, verbal learning and memory, verbal fluency, and executive function
- **The problem is pertinent to midlife age segment as target for modifying a pathway to lower neurocognition and unhealthy neurocognitive aging**

Type 2 diabetes as a risk factor for Hispanic AD

- Diabetes prevalence varies from 10.2% in South Americans and 13.4% in Cubans to 17.7% in Central Americans, 18.0% in Dominicans and Puerto Ricans, and 18.3% in Mexicans ($P < 0.0001$)
- 43% of dementia is attributable to type 2 diabetes among Mexican origin older (>60) adults
- Risk of dementia is 8 times higher in older people with diabetes and stroke
 - Hann, M. et al. Prevalence of diabetes in older Latinos, <https://doi.org/10.1046/j.1532-5415.2003.51054>

Allele frequency proportions in percent (95% confidence interval) by genetic ancestry group of Hispanic subgroups. <https://doi.org/10.2337/dc17-1896>

Central American	Cuban	Dominican	Mexican	Puerto Rican	South American	
N = 931	N = 1679	N = 725	N = 2900	N = 1416	N = 612	
ALLELE						
E2 3.87(2.99, 4.74)	6.49(5.66, 7.33)	8.62(7.18, 10.07)	2.86(2.43, 3.29)	5.22(4.40, 6.04)	3.59(2.55, 4.64)	
E3 85.18(83.56, 86.79)	80.94(79.61, 82.27)	73.93(71.67, 76.19)	86.16(85.27, 87.03)	81.45(80.02, 82.88)	85.21(83.22, 87.20)	
E4 10.96(9.57, 12.46)	12.57 (11.45, 13.69)	17.45 (15.49, 19.40)	10.98 (10.18, 11.79)	13.33 (12.08, 14.58)	11.19 (9.43, 12.96)	<0.0001

Latinos & Alzheimer's Disease: New Numbers Behind the Crisis

- The number of Latinos with AD is expected to increase more than nine fold from 379,000 in 2012 to 1.1 million by 2030 and to 3.5 million by 2060—a growth of 832 percent.
- Total direct and indirect costs for Latinos with AD will reach around \$105.5 billion by 2060 (in 2012 dollars); cumulative impact on US economy a total of \$2.35 trillion (in 2012 dollars) through 2060.
- Direct costs, including expenditures for medical and long-term care, were estimated at \$7 billion in 2012 and projected to more than double in 2030 to \$19.6 billion (in 2012 dollars). In 2060, these costs will increase more than nine times to \$65.7 billion (in 2012 dollars).

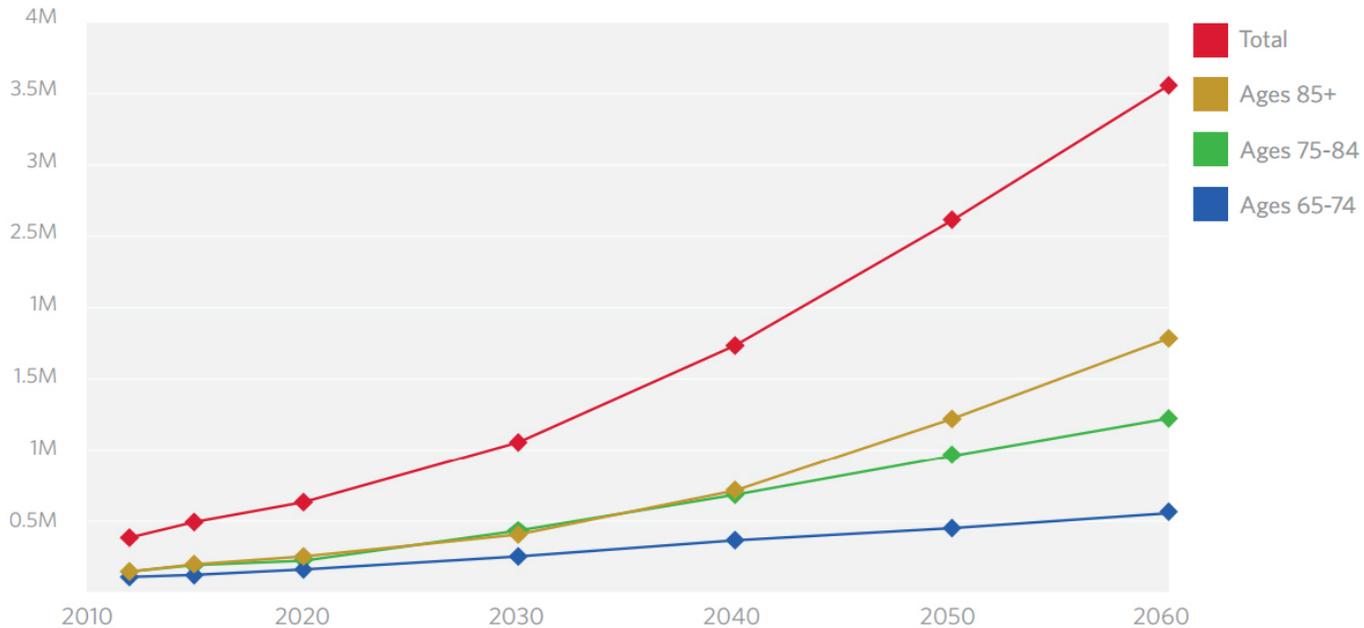
New Numbers (cont.)

- Indirect costs, including unpaid informal care and earnings lost by persons with AD, are projected to increase tenfold from \$3.9 billion in 2012 to \$39.8 billion (in 2012 dollars) in 2060.
- Latino families are less likely to use formal care services such as nursing home care and hospice care, and instead turn to more affordable long-term care services and unpaid informal care compared to non-Latino whites.
- Although Latinos are more likely to choose the most affordable care alternatives and rely heavily on unpaid informal care, total costs for Latinos with AD will grow faster than non-Latino whites.

Number of Latinos with Alzheimer's Disease

The number of Latinos living with Alzheimer's could increase from 379,000 in 2012 to 3.5 million by 2060—a growth of 832%—if a medical breakthrough is not discovered that cures or slows the progression of the disease.

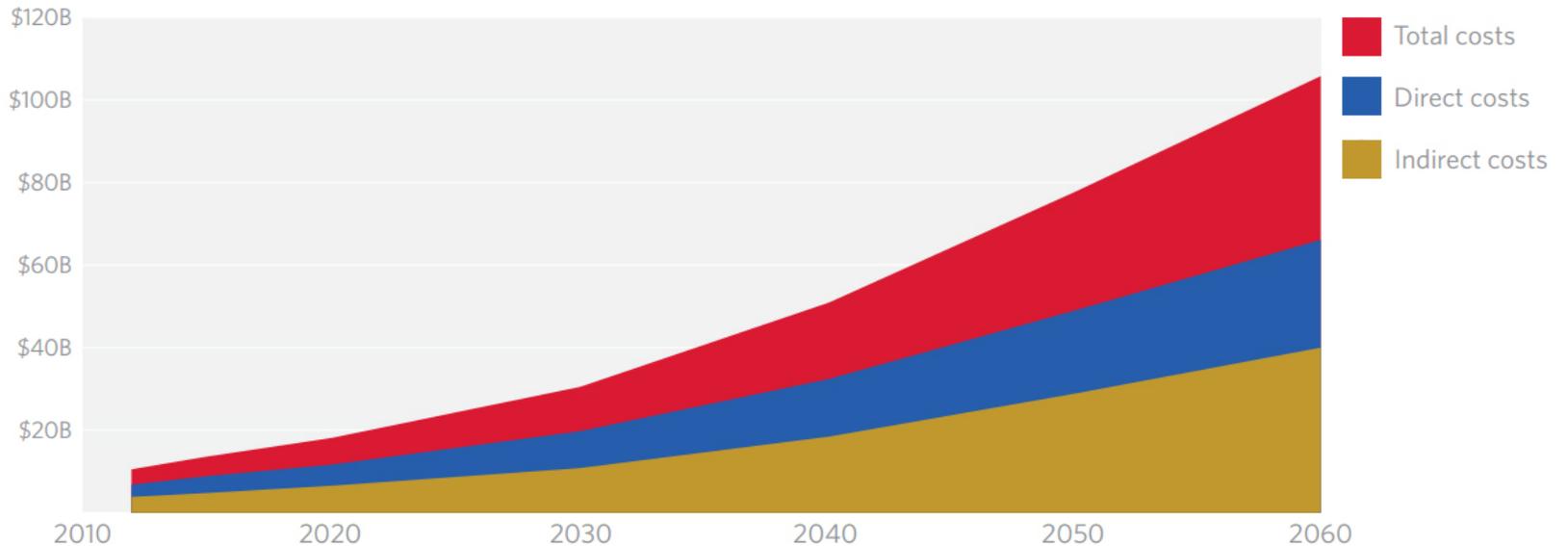
FIGURE 2. PROJECTION OF LATINOS WITH AD THROUGH 2060, BY AGE (IN MILLIONS)



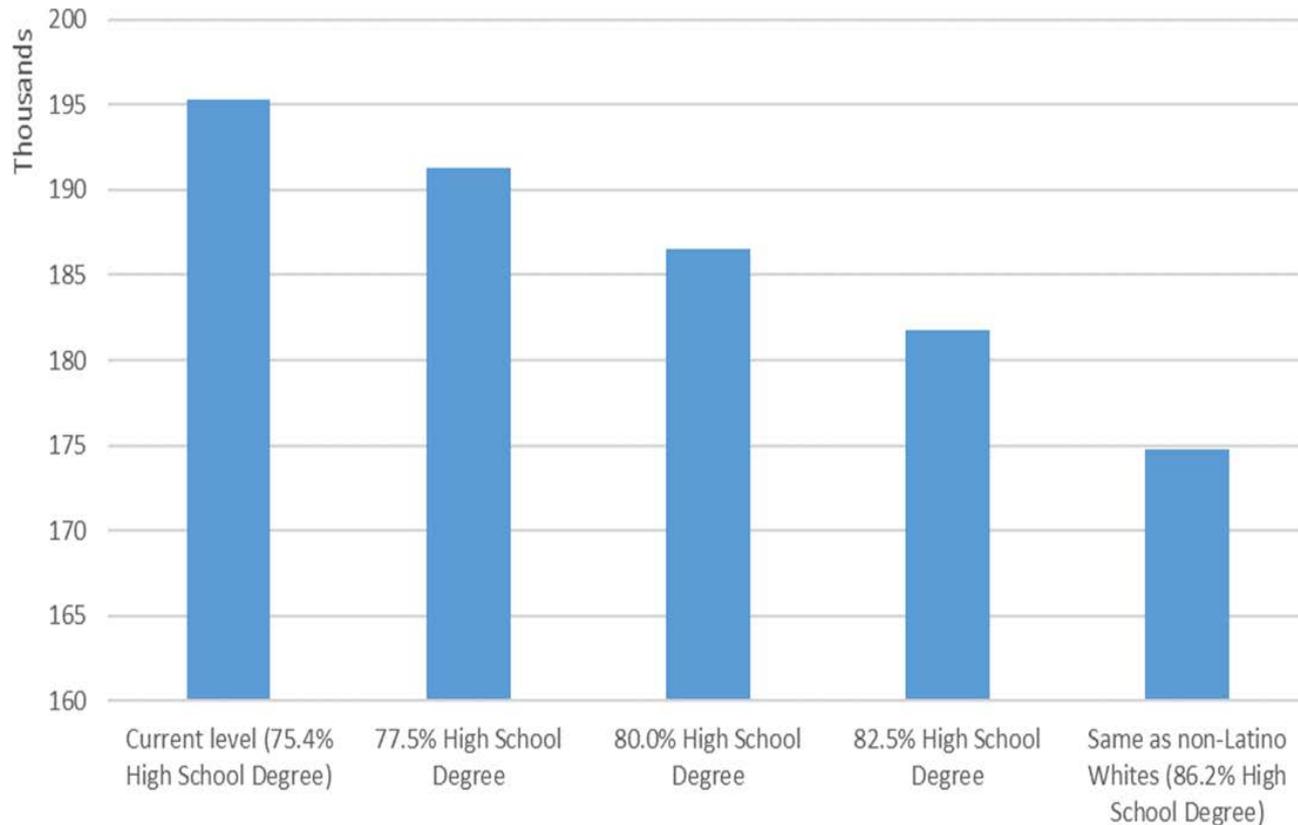
Cost of Latinos Living with Alzheimer's Disease

As the number of Latino families touched by Alzheimer's increases over the coming decades—as individuals or as caregivers—the economic impact of the disease on the Latino community will reach a cumulative \$2.35 trillion (in 2012 dollars) by 2060.

FIGURE 1. PROJECTION OF TOTAL DIRECT & INDIRECT COSTS OF AD ON LATINOS (IN \$ BILLIONS)



Projection of AD Cases in 2060 for Latino Cohort Born 1991-1995 Given Different Rates of Completing High School



- **What Can Environment Tell Us About Brain Health Destinies?**
- **How do communities differ in the way income and education differences influences health over the life span?**
- **How does the physical environment influence people's functioning and behaviors?**
- **What types of life experiences and environmental exposures are most relevant to understanding disease in low income communities?**
- **What criteria do we use to assign priority for remedies to specific conditions in neighborhoods that can improve health, is every neighborhood unique?**

Opportunities for Action at Multiple Levels

- **Individuals and families**
- **Communities** – including community organizations, senior centers, residential facilities, housing and transportation planners, local governments
- **Health care** – health care professionals and professional associations, and health care system
- **Public health** – public health agencies (federal, state, and local agencies), aging organizations, media, professional associations, and consumer groups
- **Research funders and researchers**
- **Policy and regulations** – policy makers, regulators, and consumer advocacy and support organizations
- **Private sector businesses** – financial, transportation, and technology industries

Recommendations

- Need for federal and state action plans for a coordinated public health, social care, and medical services response
- Improve local, regional, and national area surveillance
- Increase the pipeline of health care professionals in all disciplines to prevent, detect, treat, AD in Latinos communities
- Increase research funding for AD to develop prevention, early intervention, and treatment approaches

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