



## Mission

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**sustain and enhance the  
independence and quality of life  
on their terms  
for those we serve**

# Senior Oral Health Care



**Tooth Loss and Mental and Physical  
Decline: Is there a connection?**

# Long term studies

## 13 year study

- A 13 year study has just been concluded and published in February of this year.
- It was reported in the National Library of Medicine in February of 2017 that from a total of 8,153 eligible participants aged 60+ that tooth loss was associated with cognitive decline.

# Cognitive Impairment

## Common in Older Adults

- Mild cognitive impairment (MCI) is the intermediate stage between the cognitive changes of normal aging and dementia. MCI is important because it constitutes a high risk group for dementia.





# Underlying AD

- The field is now moving towards identification of asymptomatic individuals who have underlying Alzheimer's disease (AD) pathology.



# New Classification

- The Alzheimer's Association and the National Institute on Aging have developed a new classification scheme that has categorized AD into a preclinical phase (research category), MCI due to AD, and dementia of Alzheimer's type.



# Alzheimer's Association

- Almost two-thirds of Americans with Alzheimer's are women.





# 5.5 million Americans

- Of the estimated 5.5 million Americans living with Alzheimer's dementia in 2017, an estimated 5.3 million are age 65 and older and approximately 200,000 individuals are under age 65 and have younger-onset Alzheimer's.



# Aged 65 or older

- One in 10 people age 65 and older (10 percent) has Alzheimer's dementia.





# African-Americans

- African-Americans are about twice as likely to have Alzheimer's or other dementias as older whites.



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# Hispanic Population

- Hispanics are about one and one-half times as likely to have Alzheimer's or other dementias as older whites.



# Increasing number of 65+

Because of the increasing number of people age 65 and older in the United States, particularly the oldest-old, the number of new cases of Alzheimer's and other dementias is projected to soar.





Today, someone in the United States develops Alzheimer's dementia every 66 seconds. By mid-century, someone in the United States will develop the disease every 33 seconds.



# Risk Factors of MCI

- It is important to identify risk factors of MCI in order to delay the onset and decline of cognitive impairment. Limited education, depression, chronic diseases, lack of physical activity, and poor dietary habits have all been identified as possible risk factors in previous studies.





# 5 year study

- A 5-year study of 11,140 participants aged 55–88 with type 2 diabetes showed that those with 0 teeth or 1–21 teeth had higher risk of dementia and cognitive decline than those with 22 and more teeth



- Further studies are needed to use time-specific data of teeth number and cognition and treat them as continuous variables to capture how the decrease in teeth number is related to cognitive decline.



# Periodontal Disease

- There are several possible physiological mechanisms to explain the pathways between tooth loss and cognitive decline. One possibility is periodontal disease, which is one of the main causes of tooth loss.



# Inflammatory factors

- Inflammatory factors derived from the body's response to periodontal infection may disseminate to brain through the systemic circulation and exacerbate inflammatory process and vascular pathologies.





# Poor nutrition

- The second possible pathway is poor nutrition due to tooth loss, including intake of insufficient recommended levels of foods, nutrients and B vitamins, which may be linked to cognitive decline.





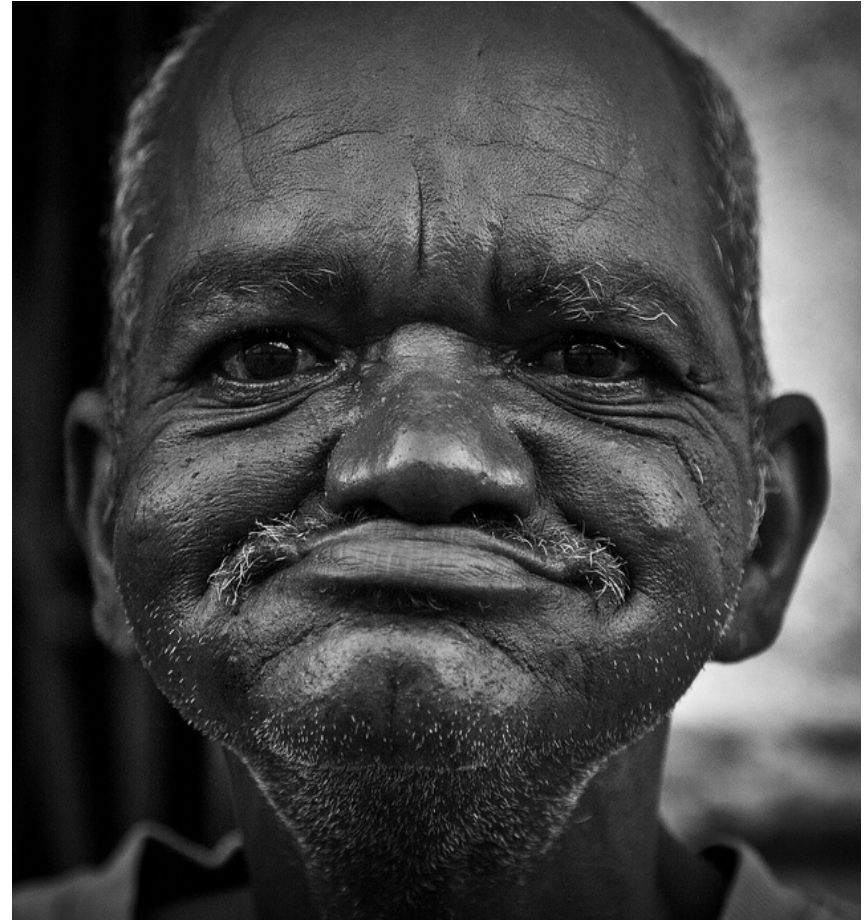
# Decreased Mastication

- A third possible pathway may be the decreased masticatory function as a result of tooth loss. Several clinical and animal studies had suggested that mastication was effective in sending sensory information to the brain and in maintaining learning and memory functions of the hippocampus.



# Spatial Memory loss

- Reduced masticatory function is associated with spatial memory deficits, and cognitive decline especially in elderly.



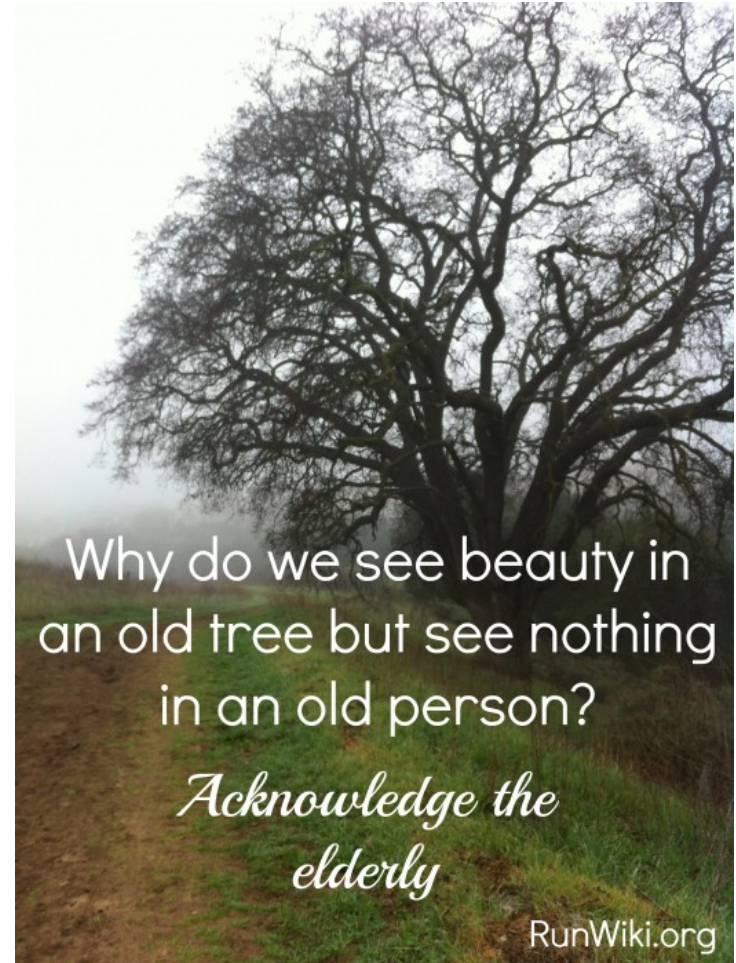
# Fewer teeth=cognitive decline

- The results from this study showed that more teeth were associated with better cognitive function, and participants who had fewer teeth tended to show a quicker pace of cognitive decline.





- The findings may have clinical implications on improvement of oral health and cognitive function. Further studies are needed to examine the linkages between cognitive decline and oral health status from more detailed clinical examination data.





# Thank you for your attention

