

## Taking care of teeth and eyes could help lessen risk of dementia

Having regular eye examinations, visiting the dentist, and maintaining functional hearing could all help prevent dementia according to research published in the journal *Neurology*.

The findings are based on an analysis of 7,239 people age 65 and older who took part in the Canadian Study of Health and Aging between 1992 and 2002.

Investigators ignored traditional dementia risk factors like heart disease and diabetes and focused instead on other minor health issues often associated with aging, like vision, sinus complaints, foot and ankle conditions, skin problems and trouble with hearing or dental health.

As a single predictor, none of these health conditions are related to a person's dementia risk. But when investigators combined a set of these relatively minor physical ailments into a single "frailty index," they found a significant cumulative effect on dementia risk.

In a press release announcing their results the researchers said that they wanted to draw attention to the cumulative effects of small deficits, which individually may not be associated with anything, but they can still add up to an important combined risk factor.

The application of these findings is that trying to maintain good health for as long as possible, not only helps people have good health but also lowers risk of dementia in later life.

In the study, each extra health problem increased an otherwise healthy person's

risk of developing dementia by 3.2%, compared with a healthy person with no minor complaints. For instance, a person who began the study with no health complaints had an 18% risk of developing dementia over the next decade. By comparison, an otherwise healthy person with eight minor health complaints had a 30% risk of developing dementia over the course of the study. A dozen small health complaints increased risk to 40%.

The reason why small health complaints appear to take a cumulative toll in respect of dementia is not yet known. It may be that the complaints are indicators of overall poor health or that increasing isolation due to functional limitations also affects the brain. However, the authors suggest it is also possible that people at risk for dementia have a flawed repair system, and as a result are more likely to accumulate small health problems.

Whatever the mechanism, the findings provide further evidence of the benefits of a healthy lifestyle and show these can extend to reduced risk of dementia. This study adds to the existing literature which shows people with reduced fitness and reduced mobility are significantly more likely to develop Alzheimer's.

Maintaining visual function and ability to chew well are important for good health so advising people to have regular check-ups with their dentist and optometrist can assist them to stay healthy and active and also lessen the chance of dementia later in life.

**Title:** Nontraditional risk factors combine to predict Alzheimer disease and dementia

**Summary:** The researchers constructed a frailty index consisting of 19 deficits not known to predict dementia which they called the nontraditional risk factors index. They assessed 7,239 cognitively healthy, community-dwelling older adults using the index as part of the Canadian Study of Health and Aging. Using the index measure of health complaints for each person at the start of the study they calculated the 10-year risk for Alzheimer disease (AD), dementia of all types, and survival.

**Results:** Age and index measure were positively correlated ( $p < 0.001$ ). The incidence of both Alzheimer's and dementia increased with higher index measures over 10 years at the 0.001 significance level. Adjusted for age, sex, education, and baseline cognition, the odds ratio of dementia increased by 3.2% ( $p = 0.021$ ) for each non-traditional deficit accumulated.

**Conclusions:** Age-associated decline in health status is a risk factor for both Alzheimer's Disease and dementia, in addition to traditional risk factors. General health status may be an important confound in assessing dementia risk. If a broad range of deficits can be associated with dementia, then improving general health might be an effective way to reduce dementia risk.

[Xiaowei Song, Arnold Mitnitski, and Kenneth Rockwood; Nontraditional risk factors combine to predict Alzheimer disease and dementia. *Neurology* July 19, 2011 77:227-234]

*Small health complaints appear to take a cumulative toll in respect of dementia.*



# Low vision is a long term chronic condition

Eye diseases are often degenerative and fit the definition of an ongoing, long term or recurring condition that has significant impact on a person's life. GPs, as primary care providers, will all have patients with a range of eye conditions requiring remediation and long term management as functional vision is reduced.

Reduced vision is an inevitable outcome of many chronic eye conditions including cataract, glaucoma, macula degeneration and diabetes with a range of intervention and management actions being implemented to reduce disease impact at varying stages of progression. Support from a disability perspective often does not become available until almost all vision has been lost and the person becomes legally blind and eligible for registration with the Royal New Zealand Foundation of the Blind.

There is a huge deficit in support for people in the long and often arduous progression from normal vision to legally blind. The impact of low vision and failing sight is every bit as significant as for other chronic conditions such as asthma, diabetes, arthritis, and dementia . Around 81,500 New Zealand adults and 13,200 New Zealand children are blind or have a sight impairment that cannot be corrected by glasses or contact lenses. Of these only 11,500 are members of the Royal New Zealand Foundation of the Blind. Clearly there is huge need among people with eye conditions in terms of knowledge, support, awareness, and action.

While optometrists are already aware of the burden of low vision and the potential for linkages with general health, other groups may not have given the matter much thought. We invite general practice to consider the following areas where there is potential to reduce risks to sight as well as achieving other health outcomes.

- Nutrition
- Smoking cessation
- Positive Ageing, and
- Diabetes

## **Take nutrition:**

It is common to see on TV and in the weekly magazines advertising and articles promoting healthy nutrition as a means of reducing weight, lowering risk of heart disease and a means to general good health. But the idea of eating for eye health is only just starting to surface.

Interestingly, this is being driven by consumers in response to research like the Blue Mountains Eye Study and the Age Related Eye Disease Study. AREDS has shown that there is a role for antioxidants and minerals in the delaying or reducing the onset of dry AMD. For example, Blue Mountains Eye Study, Beaver Dam Eye Study and Seddon (2003) showed higher AMD risk with increasing consumption of dietary fat; and AREDS and Seddon showed significant protection from increasing dietary fish.

Eye health and overall health are linked and it may be helpful to point this out to people as you encourage them to eat a diet rich in fruits, vegetables, and fish. If positive effects are demonstrable for eye health then the sooner people adopt a healthy diet the better.

### **Or smoking cessation**

The risk between smoking and macular degeneration is well established but what is new knowledge is that for eye health benefits it is never too late to stop. Current smokers have 4 x the risk of developing AMD than never or past smokers and over 5 years, smokers develop AMD 3 x more frequently and 10 years earlier than non-smokers.

### **Or what about positive ageing**

The association between visual impairment and increased dependence, between visual impairment and increased incidence of falls, and between visual impairment and increased morbidity have all been well documented. It has also been shown that the relative risk of hip fracture is 8.0 for non-correctable visual impairment and that visual impairment contributes 30% to risk of hip fracture (adjusted for age, sex, history of stroke, arthritis, self-reported health, past and current use of medication). It is no accident that the ACC specifically referred to impaired vision as a contributing factor in its 'thinksafe' falls prevention programme and encourages people to get their eyes checked regularly.

To ensure positive ageing it is necessary to retain maximum visual function. For some people that will mean no more than having a proper prescription in their spectacles. For others it will mean managing or treating conditions that cause blindness. And developing cataracts are a huge problem for older people so it is useful to think about suggesting an optometrist assess the clinical severity and impact on life for people with cataracts.

It is also worth paying particular attention to patients with age related macular degeneration, glaucoma and diabetic eye disease. We need to consider who is at risk and whether can risks be minimized. For example we know from Australian research that ARMD is responsible for more than two thirds of new cases of blindness in people aged over 50 each year.


### **And diabetes:**

People with diabetes are at risk of developing diabetic eye disease, so it is important that all areas of New Zealand have access to a really great diabetic retinopathy screening programme. We also need to think about the impact of diet and blood glucose control in the development of diabetic eye disease. We probably could also make better use of the knowledge that artery narrowing in patients with diabetes coincides with the need for limb amputation. Narrowing of the arteries is relatively easy to track across successive eye examinations but how many GPs are seeking that kind of information from their optometrist colleagues?

There are so many ways that the primary care community team can work together and we hope this has given you some ideas on managing patients with eye disease or low vision.

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## Can seeing diabetic patients more often enhance diabetes control?

A recent American study suggests that this is indeed the case.

According to a paper published in *Archives of Internal Medicine* earlier this year, fortnightly primary care encounters are associated with fastest achievement of targets for HbA1c, blood pressure, and LDL-C for patients with diabetes mellitus.

Fritha Morrison and her colleagues retrospectively analysed data from 26 496 patients with diabetes and who had elevated HbA1c, blood pressure, and/or LDL-C and were treated by primary care physicians over a 9 year period between 2000 and 2009.

Existing literature suggested that more frequent patient-provider encounters may lead to faster control of Hb A1c level, blood pressure, LDL-C levels and improve outcomes, but no guidelines were published as to how frequently patients with diabetes mellitus should be seen.

The present study examined the relationship between provider encounter frequency and time taken to achieve control of each of the three measures.

For those patients who had encounters with their physicians between 1 to 2 weeks, median time to HbA1c less than 7.0% was 4.4 months (for those not receiving insulin) and 10.1 months (receiving insulin).

For those patients who had encounters with their physicians between 3 to 6 months median time to HbA1c less than 7.0% was 24.9 months (those not receiving insulin) and 52.8 months (receiving insulin).

The median time to achieve blood pressure lower than 130/85 mm Hg was 1.3 months for the 1-2 weekly encounter patients and this group also had a median time of 5.1 months to achieve LDL-C less than 100 mg/dL .

The median time to achieve blood pressure lower than 130/85 mm Hg was 13.9 months for the 3-6 monthly encounter patients and this group had a median time of 32.8 months to achieve LDL-C less than 100 mg/dL .

Multivariable analysis showed that time to control decreased progressively as encounter frequency increased up to once every 2 weeks for most targets, consistent with the pharmacodynamics of the respective medication classes.

As the number of people with diabetes continues to increase and the pressure on primary health continues unabated there would seem to be an advantage in primary care providers working together to ensure that each encounter makes a difference. Perhaps similar results can be achieved from more frequent encounters across a range of health professionals involved in diabetes care— nurses, podiatrists, pharmacists and optometrists; with a focus on making each encounter a reinforcement for control.

[Encounter frequency and serum glucose level, blood pressure, and cholesterol level control in patients with diabetes mellitus. Fritha Morrison, Maria Shubina, Alexander Turchin. *Arch Intern Med.* 2011;171(17):1542-1550. doi:10.1001/archinternmed.2011.400]

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