



Dementia – Risk Factors, Phases, Symptoms, Diagnosis, Protection
By Linda Crosser, COL, USA, (ret), Chapter Surgeon
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Dementia is a disease of the brain, with many potential causes. Like the term “heart trouble”, dementia is a vague term, merely meaning “the brain isn’t working like it should”. There are many potential causes: brain tumors or metastatic cancer, cerebral vascular disease or strokes, severe thyroid deficiency, or Vitamin B12 deficiency, lead exposure, traumatic brain injury, neurodegenerative diseases, such as Alzheimer’s disease, Pick’s disease, and others.

Of these causes of dementia, Alzheimer’s disease is by far the most common. Because Alzheimer’s disease can only be definitively diagnosed at autopsy, the research on Alzheimer’s disease will include subjects thought probably to have Alzheimer’s disease, but may have included others, or subjects with a “mixed” dementia. This brief will focus on Alzheimer’s disease, however may apply in some degree to other dementias. The use of biomarkers can now be used, primarily in newer research studies, that are helpful in establishing if a dementia is likely to be caused by Alzheimer’s disease.

There are three phases of Alzheimer’s type dementia – these are used in research, and may be helpful to understand how long the disease actually lasts in humans.

Pre-dementia, stage I: this is a long, pre-clinical stage; there are no symptoms; biomarkers can be found here decades before there is onset of disease; anatomic changes can be found on autopsy that are diagnostic of Alzheimer’s disease.

Pre-dementia, stage II: this stage additionally has biomarkers that represent anatomic changes in the brain, and precedes clinical disease by a shorter time frame. There are still few, if any symptoms of subtle memory loss and cognitive decline.

Alzheimer’s disease, stage III: at the time of diagnosis, not only is memory loss a symptom, but also the loss of some functional capacity, such as paying the bills, driving safely, or cooking a meal. This is a gradually progressive disease that progresses at different rates in different people.

Risk Factors for diseases are helpful in identifying alterable behaviors that may have a positive impact on preventing or delaying the onset of a disease. Recently, in studying risk factors for Alzheimer’s disease, Jin-Tai Yu, MD, PhD, of the University of California, San Francisco, and colleagues, did a meta-analysis of 5,000 people in 323 studies done during the years 1968-2014. They analyzed 93 risk factors for dementia. Other than the unalterable genetic risk factors, they found 8 grade I items that had a protective effect against Alzheimer’s disease. They also found pre-existing conditions that correlated with either increased or decreased risk of developing Alzheimer’s disease.

Conditions such as frailty, narrowing of carotid arteries, abnormal blood pressure, (either high or low), having a high or low body mass index (BMI) in mid-life, low educational attainment, elevated serum homocysteine, depression, current smoking, and type II diabetes (in Asian patients only) are associated with 2/3 of all the Alzheimer's disease globally.

Other conditions are associated with a lower risk of developing the disease: arthritis, heart disease, cancer, metabolic syndrome, having a higher BMI later in life, doing "brain", or cognitive exercises, drinking light to moderate amounts of alcohol, physical activity, and having stress.

4 prescription medications were found to have some protective effect: estrogen, statins, antihypertensives (for blood pressure), and non-steroidal anti-inflammatory drugs (NSAIDs, used for arthritis, pain or inflammation).

4 nutritional products were also found to have some protective effect: folate (Vitamin B9), Vitamin E, Vitamin C, and coffee.

Words of wisdom: If you do anything with this information, other than to try to take very good care of yourself:

1. Skip worrying about your genes.
2. Take the prescription drugs noted above if your doctor says you need them.
3. Try to minimize the effect of conditions associated with increased risk.
4. Don't try to "acquire" the diseases associated with lower risk.
5. If you add in any of the nutritional products:
 - Limit Vitamin B9 to a maximum of 1 mg/d from all added sources.
 - Take at least 0.6 mg/d of Vitamin B9 if you drink alcohol.
 - Limit Vitamin E to 2,000 IU/d; evidence that men are at increased prostate cancer risk if they take Vitamin E exists, and is controversial, but men should avoid this.
 - Vitamin C can be safely taken 250-500 mg 1-2x/d.
 - Coffee has many benefits, but limit to 1-2 cups/day.

REFERENCES:

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