

KEEPING MEMORY ALIVE

Research offers hope to Alzheimer's patients

More than 5 million Americans are living with Alzheimer's disease — a staggering number. Given the aging of our population, and unless a way is found to delay the onset of the disease, it is projected that close to 16 million people will be affected in the United States by 2050. Nevada will see a 100 percent increase in citizens with this type of dementia during the next 20 years.

But what is lost in these numbers are the personal tragedies: the tragedy of having one's memories, accumulated over a lifetime, gradually stripped away; the tragedy of watching someone you have loved and admired slowly losing their powers of thought; the tragedy that comes with caregivers having to sacrifice to provide needed care, often at the expense of family.

Dr. Charles Bernick, professor of internal medicine at the University of Nevada School of Medicine, is a national leader in the treatment and care of patients with Alzheimer's disease. Based in Las Vegas, he has studied the disease

for more than two decades, going back to his days as the attending neurologist at the UC-Davis Alzheimer's Disease Diagnostic and Treatment Center.

Nevada Silver & Blue's

Mark Levine sat down with Bernick to learn about the latest in Alzheimer's disease.

Nevada Silver & Blue: Let's start by defining Alzheimer's.

Bernick: Alzheimer's is a disease strictly of the brain that causes progressive degeneration of brain cells, resulting in a steady decline in memory and other mental functions, often in conjunction with behavioral changes.

NSB: What are the common symptoms associated with Alzheimer's?

Bernick: Although symptoms may vary from person to person, the typical initial



Photo by Jean Dixon

Since joining the School of Medicine in 1994, Dr. Charles Bernick has directed the creation of a statewide network of Alzheimer's disease clinics in Las Vegas, Reno and Elko.

symptom is that of impairment of short-term memory. This can be accompanied by behavioral symptoms such as apathy, increased irritability, depression or paranoia. In addition, individuals often have trouble with "executive" functions of decision making, planning, reasoning and judgment.

NSB: Yet, this is only the beginning.

Bernick: Yes, as Alzheimer's progresses, people lose more and more abilities that they attained through development such as language function, dressing, attention to hygiene, toileting and, at end stages, even the ability to swallow.

NSB: There are a number of terms tossed around to describe memory disorders. What is the difference between dementia and mild cognitive impairment?

Bernick: In the field of medicine, the term dementia is used to describe anyone who has experienced a decline in memory and other

cognitive functions that interferes with their normal daily activities and social relationships. While Alzheimer's disease is the most common cause, dementia can also be caused by a variety of other conditions such as depression, drugs, metabolic diseases such as hypothyroidism, head trauma, tumors and infection. Since some of these conditions are reversible, it's critical to identify the actual cause of dementia so the most appropriate treatment can be rendered.

On the other hand, mild cognitive impairment is a borderline condition between normal functioning and Alzheimer's disease.

NSB: How many Nevadans have Alzheimer's?

Bernick: In Nevada, between 30,000 to 40,000 individuals have Alzheimer's disease.

NSB: With the increasing number of "baby boomers" approaching their 60s, at what age does the disease start to present noticeable symptoms?

Bernick: The majority of people with Alzheimer's begin to have symptoms after 70, although the average age at diagnosis is 80.

NSB: Many people automatically equate Alzheimer's with growing old, but this is not always the case.

Bernick: Age is unquestionably a risk factor for Alzheimer's disease but we all know individuals who live into their 90s and are sharp as a tack. Conversely, Alzheimer's disease can begin as young as the late 40s or early 50s, though these cases are rare.

NSB: Are we any closer to fully understanding what causes this disease?

Bernick: Our understanding of Alzheimer's disease has grown by leaps and bounds over the past 15 years. We have characterized the abnormal proteins that are commonly thought to trigger the brain cell death seen in Alzheimer's disease. We have also uncovered the genetic influences that lead to the disease, developed promising means for early detection, and formulated medications that provide symptomatic benefit.

NSB: How likely am I to develop Alzheimer's if it's present in a family member?

Bernick: If you have a family member with Alzheimer's disease you are statistically at a higher risk of developing it. We know that in approximately 5 percent of cases, there are genetic mutations that lead to the disease, usually with an early age of onset. For the majority of cases, there are likely "susceptibility" genes that put you at higher risk to get the disease but that must interact with other factors in order for you to develop symptoms.

NSB: Does Alzheimer's discriminate on the basis of sex?

Bernick: It is commonly said that Alzheimer's disease affects women slightly more than men, though this idea has been challenged recently. Definitely more women die from Alzheimer's. Part of the explanation might be that generally a woman's life expectancy is five years longer.

NSB: One of the more controversial and popular beliefs was the suspected role of aluminum as a factor in Alzheimer's.

Bernick: It has been found that brains of individuals with Alzheimer's disease contain higher levels of aluminum than age-matched controls at autopsy. However, this led to the theory that aluminum may be somehow toxic to the brain and cause Alzheimer's disease. This theory could not be substantiated by a number of ensuing studies. There is no conclusive evidence of aluminum contributing to Alzheimer's.

NSB: How much progress are we making in developing a reliable diagnosis?

Bernick: This is a very exciting field of development in which the University of Nevada School of Medicine is participating. Currently, we are involved in a nationwide study comparing several types of imaging techniques, along with blood and spinal fluid constituents as markers of early diagnosis of Alzheimer's disease.

NSB: What is the life expectancy for an Alzheimer's patient?

Bernick: From the time of diagnosis to death, the duration of Alzheimer's can be as long as 20 years. Best current data suggests that the average length of time is somewhere from four to eight years.

NSB: What is the current protocol in treating Alzheimer's?

Bernick: There are a number of drugs including Aricept, Exelon, Razadyne and Namenda that can delay the progression of Alzheimer's symptoms. In addition, there is indirect evidence that lifestyle interventions may be helpful such as regular exercise, keeping mentally active and eating a diet rich in antioxidants.

NSB: A recent study sponsored by the Alzheimer's Foundation of America reported that the disease is often untreated among minorities.

Bernick: What that survey revealed is that African-American and Hispanic families who have relatives with Alzheimer's are far more likely to dismiss their own symptoms as part of the aging process, thus decreasing chances for early diagnosis and treatment.

NSB: Currently there is a popular theory that mind games such as puzzles or Scrabble, may stave off Alzheimer's.

Bernick: We know that higher levels of education reduce one's risk of Alzheimer's disease. There have also been studies that suggest staying mentally active and having rich social networks also may have a protective effect.

NSB: You are part of the Lou Ruvo Brain Institute that is charged with helping to unlock the mysteries of this disease.

Bernick: The Ruvo Institute, named in honor of longtime and beloved Las Vegas Lou Ruvo, was brought to life as a partnership between private and public interests. Under the leadership of Larry Ruvo, we have broken ground for a 67,000-square-foot facility in Las Vegas designed by internationally acclaimed architect Frank Gehry. Faculty from the University of Nevada School of Medicine, along with other talented scientists recruited from within Nevada and throughout the country, will direct the clinical and research activities with the goal of finding better treatments and ways to deliver care to those with Alzheimer's, Parkinson's, ALS (Lou Gehrig's disease) and Huntington's.

NSB: What role has the Nevada Legislature played in supporting Alzheimer's research?

Bernick: Nevada has been a major supporter of our program and the Ruvo Institute. The Nevada Legislature has appropriated \$800,000 toward physician and staff salaries. Former Gov. Kenny Guinn and the legislature also announced a \$12 million pledge to the School of Medicine in support of research and operational expenditures related to the school's partnership with Keep Memory Alive, a Las Vegas-based non-profit organization dedicated the fight against memory disorders. **N**