New Insights into Alzheimer’s Disease

Alzheimer’s disease is a devastating disorder of the brain that leads to memory loss, alterations in behavior and personality, inability to think appropriately, and loss of function. It was first described by the pathologist, Alois Alzheimer, at the beginning of the twentieth century. He associated the changes in memory with the presence of amyloid plaques and neurofibrillary tangles in the brain. While the majority of people with Alzheimer’s disease develop the condition in old age, it can also occur in middle age. Persons with Alzheimer’s disease can die in the first few years following the diagnosis, but the majority survive 8 to 10 years and a few as long as 20 years. If we live to 85 years of age, nearly half of us are at risk of developing Alzheimer’s disease. At present, about 4 million people in the United States have Alzheimer’s disease and the estimated cost of caring for them is $100 billion. Other brain
(continued on page 12)

“He who is of a calm and happy nature will hardly feel the pressure of age, but to him who is of an opposite disposition, youth and age are equally a burden.”
- Plato, 428-348 BC

The most precious resource to all human beings is the ability to reason and interact with the world around us. Unfortunately, as we age, we all lose our ability to learn things at the rate we did when we were young. Perhaps more devastating is that many of us will become truly cognitively impaired and lose our ability to reason rationally, that wondrous quality that separates us from the other members of the animal kingdom. While
(continued on page 21)
**Book Review**

**Creativity and Aging**

“Our nature here is not unlike our wine. Some sorts, when old, continue brisk and fine.”

-Sir John Denham, writing of old age

The concept that when one is old one will continue a vigorous and perhaps even more productive life has been encapsulated by poets throughout the ages, from young. Einstein’s paper on relativity appeared at the age of 26 years. Beethoven wrote his *Fifth Symphony* is his thirties and Rossini wrote *The Barber of Seville* at age 23.

In Erickson’s view of the elderly, octogenarians had new attitudes and a freer expression of love and caring and wisdom. Others, however, strongly feel that old age is “an incurable disease…and only a tiny number…are creative in some way.” In 1975, Clayton could find little evidence to support a hopeful view of creative aging and she asked in her paper, “Realistically speaking, are there any wise elderly men?” and answered her own question “Very few!”

Reality, of course, is that there have been extraordinarily creative older persons whose achievements vie with those of any younger person. As poetically detailed by Longfellow, “…nothing is too late til the tired heart shall cease to palpitate” (see box on page 8). Many elderly persons, just like the majority of younger ones, are not extraordinarily creative, but when the old have spread their wings and soared towards the heavens, they have produced works that stand proudly alongside any of those produced by younger persons.

Among scientists, Galileo changed our view of the earth when he was 74. Benjamin Franklin gave us bifocal glasses at 78, and Lamarck wrote his pivotal work at 78. Wundt wrote his psychology text at 68, and Sigmund Freud’s *The Ego and the Id* appeared when he was 67. Richard Feynman (the physicist) and Linus Pauling (the chemist) continued to make major contributions until the end of their lives; Pauling’s last paper appeared in *Nature* when he was in his nineties. Max Horwitt, the world-renowned expert on Vitamin E, wrote his last paper a few days be-
Creativity and Aging  
(continued from page 2)

before his death in his nineties.

Verdi wrote Otello at 74 and Falstaff at 80. Wagner’s Ring operas were written after his sixtieth birthday. The Romanian pianist, Delavrancea, gave her last public recital at the age of 103 years. Jeannie Newhouse played the organ for 66 years.

Jessica Tandy won an Oscar for her movie appearance at 70 years of age. Jeanne Louise Calmet was still performing in movies in Canada at age 105. Martha Graham continued as a choreographer into her nineties. Camera obscura was invented by Maurolyuas at age 81.

The oldest published author is the remarkable Sarah Louise Delaney whose second book was published when she was 105 years old. George Bernard Shaw continued to write plays into his nineties; Goethe wrote the second part of Faust at 80 and Cervantes was in his sixties when he wrote Don Quixote. James Michener wrote 10 books in the last 4 years of his life.

Among artists, Titian began his famous The Descent from the Cross when he was ninety. Michelangelo produced two Pietas, one at 22 and the other at 90. His Last Judgment was painted at the relatively young age of 57 to 66 years. Picasso was extraordinarily productive throughout life. Matisse did his cutouts in old age, and Grandma Moses produced her last painting at 103.

After losing his position as a hospital janitor, the sculptor, William Edmonson, began sculpting in his mid-sixties. Sister Gertrude Morgan started painting at 56 and was showing her work in her seventies and eighties. Monet did his best impressionistic art after he developed cataracts.

The creativity of the elderly is perhaps best summarized by this paragraph written by Pablo Casals when he was 93: “For the past eight years, I have started each day in the same manner. It is not a mechanical routine but something essential to my daily life. I go to the piano, and I play two preludes and fugues of Bach. I cannot think of doing otherwise. It is a sort of benediction on the house. But that is not its only meaning to me. It is a rediscovery of the world of which I have the joy of being a part. It fills me with awareness of life and a feeling of the incredible marvel of being a human being.”

The thoughts and content of this essay come predominantly from a wonderful book, Aging, Creativity, and Art: A Positive Perspective on Late-Life Development by Martin S. Lindauer (Kluwer Academic/Plenum Publishers; New York, 2003) who completed the work as he neared 70 years of age. This is a remarkably stimulating book full of gems about late-life creativity. We strongly recommend this book to all of those interested in the aging process.
Passion, Humor, Avoiding Smoking, and Eating Right Are Keys to Long Life

On August 26, 2003, guest performers Frances Wessells, aged 84, and Robbie Kinter, aged 39, showed medical students at Saint Louis University that personal strength, balance and flexibility, and aging are not mutually exclusive ideas. Both are faculty members at the Department of Dance and Choreography at Virginia Commonwealth University. They performed an original modern dance piece for the students.

Frances Wessells has had both of her knees and a hip replaced. This is not uncommon for a dancer who wishes to remain active and the joint replacements have allowed Ms. Wessells to do just that. “I can do everything today but run and jump, but I don’t do it eight hours a day any more. I teach dance for three hours a day on Mondays and Wednesdays and for an hour and a half on Tuesdays and Thursdays,” Ms. Wessells told the students. When Mr. Kinter told a humorous story about how he took up modern dance performance following an automobile accident that doctors thought would paralyze him for life, Ms. Wessells pointed out that humor is also a necessary ingredient of long life.

Ms. Wessells claims that her dedication to dance is her secret to a long and active life. She feels that everyone needs to be passionate about something and she has always been, and remains, passionate about dance. She is grateful that her career has forced her to remain active, eat wisely, and give up smoking (62 years ago).

P R O D U C T S

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New Way to Treat Elderly Patients With Delirium Defies Conventional Medical Wisdom

Saint Louis University Research Shows Unexpected Outcome

The best way to treat hospitalized elderly patients who become delirious defies conventional wisdom and common practice, according to new research from Saint Louis University published in the July issue of *Journal of the American Geriatrics Society*. This article describes the development, management, and economics of a new model of care for patients with delirium, called the Delirium Room (DR). The DR is a specialized four-bed unit that provides 24-hour intensive nursing care and is completely free of physical restraints. Another important feature of the four-bed DR is that it is an integral part of a 22-bed acute care for the elderly (ACE) unit at Saint Louis University Hospital. As such, patients in the DR benefit from features of the ACE unit: a change in the physical environment of the medical floor to promote mobility and function and discourage bed rest, comprehensive geriatric care that identifies and addresses problems that can lead to a decline in function, and the use of a daily multidisciplinary team meeting.

Delirium, a common problem among hospitalized elderly, causes patients to be confused, unclear in their thinking and incoherent. Their behavior may be disturbed—agitated, lethargic or a combination of the two. Those delirious patients who are sleepy and lethargic often are undiagnosed because they don’t make a ruckus.

Typically, elderly delirious patients who are agitated are cared for in private or semi-private rooms, isolated from others. They may be placed in physical restraints for protection and given medications that are calming.

Now a new treatment model created by Saint Louis University geriatricians at Saint Louis University Hospital, the first of its kind in the country, throws many of those ideas for treatment out of the window.

The geriatricians found that elderly patients with delirium do better if they are placed together and cared for in the Delirium Room, essentially a four-bed intensive care unit. Because there are no walls in the Delirium Room, a highly trained certified nursing assistant or registered nurse can constantly monitor their conditions, picking up on potential problems early to prevent them from escalating. Physical restraints are not used and medication to quiet patients is the last-choice treatment.

“Since 1997, we’ve been doing it and if it’s done correctly, it works,” says Joseph Flaherty, M.D., associate professor of geriatrics at Saint Louis University School of Medicine and principal investigator. “The nursing literature says agitated patients cause agitation in normal patients, so they need to be separated. We just don’t see it happen.”

Delirium is a very common problem among hospitalized elderly patients, Dr. Flaherty says. (continued on page 22)
## Differences Between the Dementias

<table>
<thead>
<tr>
<th></th>
<th>Alzheimer’s Disease</th>
<th>Vascular Dementia</th>
<th>Depression</th>
<th>Lewy-Body Dementia</th>
<th>Fronto Temporal (Pick’s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Onset</strong></td>
<td>Insidious</td>
<td>Abrupt</td>
<td>Insidious</td>
<td>Insidious</td>
<td>Early age</td>
</tr>
<tr>
<td><strong>Progression</strong></td>
<td>Slow progressive with fluctuation</td>
<td>Stepwise</td>
<td>Progressive with remissions</td>
<td>Progressive and more rapid</td>
<td>Progressive</td>
</tr>
<tr>
<td><strong>Clinical Features</strong></td>
<td>Deficits in at least two areas of cognition, No disturbance of consciousness, Altered behavior, Illusions, delusions, and hallucinations, Increased muscle rigidity, Seizures (late), Gait disturbances (late), Increased tau and decreased beta-amyloid in CSF</td>
<td>Emotional incontinence, Focal neurological disease, Evidence of vascular disease, Patchy cognitive defects</td>
<td>Subjective complaints exceed objective findings, Sad, Poor motivation</td>
<td>Interferes early with social functions, Memory impairment may be late, Prominent attention and visuospatial defects, Fluctuating levels of alertness, Recurrent visual hallucinations, Parkinsonism, Repeated falls, Systemized delusions</td>
<td>Apathy, Disinhibition, Antisocial behavior, Poor insight, Language deficits, Memory deficits (late), Constructional praxis</td>
</tr>
<tr>
<td><strong>Laboratory Features</strong></td>
<td>May have cortical atrophy</td>
<td>Hyperlipidemia</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td><strong>Neuro-imaging</strong></td>
<td>Hippocampal atrophy</td>
<td>Multiple vascular lesions</td>
<td>None</td>
<td>On EEG, transient slow-wave activity in the temporal lobe areas</td>
<td>Frontal and temporal lobe atrophy</td>
</tr>
</tbody>
</table>
Electroconvulsive Therapy in Psychogeriatrics – A Primer

By Philip J. LeFevre, MD

Probably little is done in psychiatry that has caused more debate, finger-pointing, and outright accusations of “harming people’s brains” than electroconvulsive therapy (ECT). On the other hand, there are few techniques in our armamentarium to help people with mental illness that has lasted as long or been more helpful than this procedure. A man by the name of Meduna, a Hungarian neuro-psychiatrist, had the notion that people with epilepsy were somehow protected against developing the symptoms of schizophrenia. He induced seizures by injecting camphor into patients and eventually metrazol. Cerletti and Bini began inducing seizures in 1937 with electricity and found this to be much more reliable.

ECT is particularly helpful in the treatment of the elderly for reasons that I will elucidate later. No one knows exactly how ECT works and the theories proposed are many. I can still remember people proposing they are effective because they make you forget all your problems. Unfortunately, one may forget some things, but it’s certainly not one’s problems!

The indication for use that first comes to mind and one in which ECT often has the most dramatic effect is that of Major Depressive Disorder. It is within this category that an absolute indication for ECT is warranted, i.e., a patient who is severely depressed with psychotic features and is trying desperately to harm him- or herself. It has been my experience over the years that two or three ECT treatments will remove the suicidal component to the illness and the odds of the patient actually improving with this treatment is probably in excess of 90 percent.

For a patient with Parkinsonism, with the loss of cells in the substantia nigra, ECT will very often, at least on a temporary basis, re-activate some of the remaining cells that are still alive and the illness can often go into various degrees of remission.

In the past, there were several contraindications for ECT, but with the use of improved anesthesia and cardiac status being much better managed (including arrhythmias), there is little to stop one from proceeding when psychiatric indications are present. Certainly, a patient in severe congestive heart failure, with severe arrhythmia, and pneumonia would not be a good candidate for ECT. Intracranial pressure from tumors, etc. is only a relative contraindication.

Unilateral ECT is approximately 30% less efficient than bilateral ECT and requires higher levels of energy. However, unilateral ECT does cause less confusion. This is another subject that encourages hours of debate, but in general, since the elderly are usually quite sick – they’re not eating, not sleeping – I prefer to use bilateral ECT for its efficiency and to control the additional confusion that may occur after treatment is given by instructing family members how to more closely monitor patients, or, if inpatient, the nursing staff. Most studies show that a month and a half or so after treatment, whether one uses unilateral or bilateral ECT, the level of memory loss is relatively comparable and usually minimal.

At this time, it should be emphasized how important education is in everything we do in medicine but most certainly in procedures (continued on page 28)
News in Brief

Dr. George Grossberg Elected President of International Psychogeriatric Association

George T. Grossberg, M.D., the Samuel W. Fordyce professor and director of the Division of Geriatric Psychiatry at Saint Louis University School of Medicine, was elected president of the International Psychogeriatric Association. He was installed for a two-year term during the IPA's Eleventh International Congress in August.

Dr. Grossberg had been president-elect for the IPA and has served on the IPA's board of directors since 1994. He also served as president for the American Association of Geriatric Psychiatry and has been a leader in developing mental health programs, treatment, and research in geriatrics.

The International Psychogeriatric Association has more than 1,400 members from 68 countries. Its members, professionals and scientists interested in psychogeriatrics, include psychiatrists, internists, geriatricians, neurologists, nurses, psychologists, social workers, and other specialists.

SLUCare Physicians Listed Among the Best

The current issue of St. Louis Magazine has a cover story on the “Best Doctors in St. Louis,” and 79 doctors from SLUCare made the list. This represents about one-quarter of the doctors in the University’s physician medical practice.

The magazine published the list based on information from the 2003 guide to the “Best Doctors in America.” The publishers of this book process more than one million peer evaluations to form a directory of 30,000 specialists from whom other doctors would seek treatment.

The SLUCare physicians from the Division of Geriatric Medicine are Douglas K. Miller, M.D., John E. Morley, M.B., B.Ch., and George T. Grossberg, M.D.

SLU Inner City Study Shows High Prevalence of Depression in African Americans

The inner city study, lead by Douglas K. Miller, MD, has found that middle-aged African Americans have a very high occurrence of depression. Depression in this cohort, aged 50 to 65 years, was strongly related to an increase in disability. Remarkably, few of these persons were being treated for their depression. These findings were presented at the American Geriatrics Society meeting by one of our subspecialty residents, Dr. Joshi.
Anxiety and Panic Attacks

Anxiety
What is it? Anxiety refers to a vague, uneasy feeling, the source of which is often nonspecific or unknown to the person who experiences it. It may range from mild uneasiness to intense fear. Although all of us experience anxiety from time to time, it is considered a health condition when it starts to inhibit our thoughts and disrupt normal activities of daily living.

Studies indicate that about 17 percent of men and 22 percent of women over age 60 experience anxiety to a degree that warrants treatment. Anxiety can take a variety of forms, ranging from purely emotional sensations to physiological symptoms that can mimic other health conditions.

Signs and Symptoms
- Feelings of uneasiness, fear, tension, guilt, restlessness, helplessness, and/or hopelessness
- Insomnia
- Sometimes, hypochondria (constant worry about health and physical symptoms)
- Sometimes, physical symptoms such as rapid or pounding heartbeat, trembling, shortness of breath, or gastrointestinal discomfort
- Sometimes, confusion or memory lapses.

What causes anxiety?
Many factors can cause anxiety. Possibilities include:
- Psychological and social factors.
- Bereavement
- Retirement
- Financial concerns
- Caregiving responsibilities
- Fear of death – these and many other factors can lead to understandable feelings of anxiety.

Changes in cognitive function
Anxiety can be a symptom of several conditions that impair cognitive function, including dementia, delirium, and depression. Some of these conditions can be improved or even reversed with treatment, which will also relieve the anxiety.

Health conditions
Anxiety may be a symptom of several physical health problems, such as nutritional deficiencies, chronic obstructive pulmonary disease (COPD), asthma, high blood pressure, thyroid conditions, Parkinson’s disease, anemia, seizures and epilepsy, heart arrhythmias, and angina. Changes in physical health or mobility can also lead to anxiety.

Medications
Anxiety may signal an overly high level of a medication in the body, or it may result from interactions between drugs. Corticosteroids, theophylline, thyroid hormones, and antidepressant medications can cause feelings of anxiety. When certain sedative drugs are discontinued after chronic use, “rebound” anxiety and insomnia can occur.

How is anxiety diagnosed and treated?
Your doctor will take a detailed health history to identify possible causes of your anxiety. He or she will perform a thorough medical examination, and possibly conduct several tests, to evaluate your physical health. Your doctor will also wish to evaluate all of the medications, both prescription and over-the-counter, that you are currently taking. Be sure to mention any psychological or social factors that could be contributing to your anxiety.

The choice of treatment depends on several factors, including the cause of your anxiety, the severity of your symptoms, the presence of any other health conditions, and the availability and practicality of various treatments.

(continued on page 14)
Stages of Alzheimer’s Disease

Stage 1: No cognitive impairment

Stage 2: Very mild cognitive decline, mild memory lapses

Stage 3: Mild cognitive decline. Word- or name-finding problems emerge, as do a decreased ability to remember names when introduced to new people and performance issues in social or work settings. Reading a passage and retaining little material is common as are losing or misplacing a valuable object and a decline in ability to plan or organize.

Stage 4: Moderate cognitive decline (mild or early-stage Alzheimer’s disease). The individual shows a decreased knowledge of current events, impaired ability to perform challenging mental arithmetic, decreased capacity to perform complex tasks such as marketing and managing finances, and reduced memory of personal history. The affected individual may seem subdued and withdrawn, especially in socially or mentally challenging situations.

Stage 5: Moderately severe cognitive decline (moderate or mid-stage Alzheimer’s disease). Major gaps in memory and deficits in cognitive function emerge. Some assistance with day-to-day activities is needed. Individuals may be unable to recall such details as current address, telephone number, or the name of the high school from which they graduated, may become confused about where they are or about the date, day of the week, or season, and may need help choosing proper clothing for the season or occasion, but usually retain substantial knowledge about themselves and know their own name and the names of their spouse or children, and usually require no assistance with eating or using the toilet.

Stage 6: Severe cognitive decline (moderately severe or mid-stage Alzheimer’s disease). Memory difficulties worsen, significant personality changes may emerge, and there is increased need for extensive help with customary daily activities. Individuals may lose most awareness of recent experiences and events and of their surroundings, recollect their personal histories imperfectly (although they generally recall their own name), and occasionally forget the name of their spouse or primary caregiver but can distinguish familiar from unfamiliar faces. They need help getting dressed properly, experience disruption of their normal sleep/waking cycle, need help with handling details of toileting, have increasing episodes of urinary or fecal incontinence, and experience significant personality changes and behavioral symptoms, including suspiciousness and delusions, as well as hallucinations or compulsive, repetitive behaviors such as hand-wringing or tissue shredding. They tend to wander and become lost.

Stage 7: Very severe cognitive decline (severe or late-stage Alzheimer’s disease). Individuals lose the ability to respond to their environment, the ability to speak, and ultimately, the ability to control movement. Frequently, individuals lose their capacity for recognizable speech and need help with eating and toileting and there is general incontinence of urine. Individuals lose the ability to walk without assistance, then the ability to sit without support, the ability to smile, the ability to hold their head up. Reflexes become abnormal and muscles grow rigid. Swallowing is impaired.
Saint Louis University
Mental Status (SLUMS) Examination

Name ________________________________ Age __________
Is patient alert? ________________________ Level of education ______________________

1. What day of the week is it?
2. What is the year?
3. What state are we in?

4. Please remember these five objects. I will ask you what they are later.
   Apple Pen Tie House Car

5. You have $100 and you go to the store and buy a dozen apples for $3 and a tricycle for $20.
   How much did you spend?
   How much do you have left?

6. Please name as many animals as you can in one minute.
   0-4 animals 1 5-9 animals 2 10-14 animals 3 15+ animals

7. What were the 5 objects I asked you to remember? 1 point for each one correct.

8. I am going to give you a series of numbers and I would like you to give them to me backwards.
   For example, if I say 42, you would say 24.
   0 87 1 649 1 8537

9. This is a clock face. Please put in the hour markers and the time at ten minutes to eleven o’clock.
   Hour markers okay
   Time correct

10. Please place an X in the triangle.

Which of the above figures is largest?

11. I am going to tell you a story. Please listen carefully because afterwards, I’m going to ask you some questions about it.
   Jill was a very successful stockbroker. She made a lot of money on the stock market. She then met Jack, a devastatingly handsome man. She married him and had three children. They lived in Chicago. She then stopped work and stayed at home to bring up her children. When they were teenagers, she went back to work. She and Jack lived happily ever after.
   What was the female’s name?
   What work did she do?
   When did she go back to work?
   What state did she live in?

<table>
<thead>
<tr>
<th>Scoring</th>
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<tbody>
<tr>
<td>High School Education Less than High School Education</td>
</tr>
<tr>
<td>27-30 Normal 20-30</td>
</tr>
<tr>
<td>20-26 MCI 15-19</td>
</tr>
<tr>
<td>1-19 Dementia 1-14</td>
</tr>
</tbody>
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Questions? FAX: (314) 771-8575  •  email: agingsuccess@slu.edu  Aging Successfully, Vol. XIII, No. 3
disorders, particularly small strokes, can lead to severe cognitive impairment and functional decline. A small number of persons with memory problems have relatively easy-to-treat causes either because of a co-existing acute illness (delirium) or a longer term treatable condition (dementia). It is important that these treatable conditions be diagnosed early (see box) and treated immediately.

At present, there are two major theories concerning the cause of Alzheimer’s disease. The first suggests that overproduction of beta-amyloid, a brain molecule produced in neurons, directly inhibits the ability to learn and recall events and also sets in motion a cascade of events that leads to tissue destruction. Researchers at Saint Louis University (SLU) were the first to show direct effects of beta-amyloid on memory in animals in a paper published in the Proceedings of the National Academy of Sciences.

The second theory is that Alzheimer’s disease occurs when oxygen free radicals produced by neurons damage the cellular elements leading to neurodegeneration. Utilizing a free radical scavenger, alpha-lipoic acid, SLU researchers, together with Professor Butterfield and his colleagues, demonstrated that preventing oxidative damage from free radicals led to improved memory. This is in concert with studies in humans showing that taking Vitamin E, a less potent free radical scavenger, can delay the progression of Alzheimer’s disease. Interestingly, blocking the overproduction of beta-amyloid decreases free radical damage to the brain of rodents, creating a link between the two main theories of the pathogenesis of Alzheimer’s disease. A human study is examining whether the highly potent antioxidant, indole-3-propionate, has any short-term beneficial effects for patients with Alzheimer’s disease.

Researchers at Elan Pharmaceuticals created a vaccine to produce antibodies to beta-amyloid. This enhanced performance on memory tests in rodents that had a transgene resulting in overproduction of beta-amyloid. SLU researchers showed that antibodies to beta-amyloid injected directly into the brain of mice enhanced memory. These studies led to trials in humans to test the safety and efficacy of vaccination in humans. Unfortunately, these trials were terminated prematurely because of the development of inflammation in the brains of some of the participants.

Two important ongoing areas of research involve attempts to slow the overproduction of beta-amyloid.
Insights into Alzheimer’s
(continued from page 12)

Amyloid. In the first, the precursor fragment to beta-amyloid, amyloid precursor protein, is cut up by two types of enzymes, beta-secretases and gamma-secretases. Numerous pharmaceutical companies are developing drugs in an attempt to modulate the production of these enzymes. In the second, at SLU, we have developed an antisense to the amyloid precursor protein. This blocks the ability of the messenger RNA to produce amyloid precursor protein and therefore, beta-amyloid. The antisenses enhance memory in rodents overproducing beta-amyloid. The antisense can be given peripherally, suggesting that it can be given as a classical drug. These two approaches offer great hope for the future treatment of Alzheimer’s disease.

Researchers have also found that, in some cases, beta-amyloid accumulates excessively in the brain, leading to a build-up of toxic products. A team at SLU, led by Dr. George Grossberg, is involved in an international study whereby a valve is placed into the cerebrospinal fluid in the brain allowing removal of this excess accumulation of beta-amyloid. Other studies at SLU have suggested that overproduction of beta-amyloid results in an inability of the blood-brain barrier to successfully remove excess beta-amyloid.

Drugs to treat Alzheimer’s disease

One of the major neurotransmitters involved in the memory deficits seen in Alzheimer’s disease is acetylcholine (ACh). The main drugs available to slow down the progression of Alzheimer’s disease are drugs that block the breakdown of ACh. These are donapexil (Aricept), rivastigmine (Exelon), and galantamine (Reminyl). Recently it was shown in hippocampal slices of brains that beta-amyloid directly blocks the function of the nicotinic acetylcholine receptor. At SLU, we have shown in vivo that antibodies to beta-amyloid lower ACh production in mice.

Memantine is a drug that alters the glutamate/NMDA receptor. We at SLU have shown that drugs acting on this receptor can enhance memory in mice. A recent human study demonstrated improved memory in humans with Alzheimer’s disease who take memantine.

Some recent studies have led to disappointing outcomes. Despite a solid basic science belief that estrogen would enhance cognition, the Women’s Health Initiative found that the combination of premarin and a progestin increased the risk of developing dementia. Despite epidemiological trials that had suggested that nonsteroidal anti-inflammatory... (continued on page 26)

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Aging Successfully, Vol. XIII, No. 3
Anxiety and Panic Attacks

(continued from page 9)

If a medical condition is causing the anxiety, your doctor will treat that condition first. Any drugs that might be affecting your state of mind should be discontinued or the dosage reduced, if at all possible.

Other treatment options could include relaxation training, individual or group psychotherapy, and biofeedback (a technique in which a person uses information about a normally involuntary body function, such as blood pressure, to learn how to consciously control that function). Many older adults benefit from becoming involved in activities and spending more time with family or friends. Sometimes environmental changes can help. If, for instance, your anxiety involves a fear of falling and injuring yourself, relatively simple changes in your home environment, such as removing throw rugs, rearranging furniture, or installing grab bars, could reduce the risk of falling and your anxiety about it.

If the anxiety is severe, or continues to interfere with overall health, drug treatment may be an option. Several types of medications are used to treat anxiety, including benzodiazepines (such as lorazepam) and buspirone. Because benzodiazepines tend to remain active in the body for a longer period of time in older adults, many doctors prescribe lower doses of these drugs for older adults (about one-half to one-third the usual adult dose). In general, the long-acting benzodiazepines such as diazepam and chlordiazepoxide are not prescribed for older adults. Consult your doctor for more information.

Will it get better?

If anxiety interferes with your ability to lead a normal life, treatment can definitely help. Discuss your concerns with your doctor; he or she can evaluate your symptoms and recommend treatment or refer you to other health care providers who can help.

Panic Disorder

What is it?

Panic disorder involves recurrent panic attacks – episodes of intense anxiety and fear, accompanied by physical symptoms such as sweating, rapid heartbeat, and difficulty breathing – that reflect the arousal of the autonomic nervous system. This is the part of the nervous system that controls the involuntary activities of organs, blood vessels, glands, and other body tissues.

Panic disorder appears to be caused by certain biochemical or physiological abnormalities that affect the neurons (nerve cells) in the brain. Neurons communicate with each other by “firing” electrical impulses that travel to other neurons. When the firing rate of neurons in a certain area of the brain increases for some reason, a panic attack can result. In laboratory experiments, researchers have actually induced panic attacks in subjects by administering specific drugs that increased the neurons’ firing rates.

A tendency toward panic disorder may run in families; studies have found that first-degree relatives of people with panic disorder have a higher-than-average incidence of panic disorder themselves. Women seem to have a higher incidence than men.

Signs and symptoms

One may experience recurrent episodes of intense fear and anxiety, overwhelming fear of looming disaster, impending death, and/or losing control. Episodes may begin abruptly or build gradually.

(continued on page 24)
Singing the Blues

“Depression...so mysteriously painful and elusive...remains nearly incomprehensible to those who have not experienced it in its extreme mood, although the ... “blues” which people go through occasionally... are of such prevalence that they do give many individuals a hint of the illness in its catastrophic form.”

-William Styron

Darkness Visible

Pervasive sadness is perhaps the worst of all illnesses that afflicts humankind. Despite the general belief that it is common for older persons to have lost their spouse, their job, their house, and their friends, and therefore should be depressed, major depression occurs more commonly in young women than in older persons. Older persons, in general, cope better with disease and adversity than younger persons. However, as older persons suffer more disease than younger persons, they often have an intermediate version of sadness, known as dysphoria. Among older persons living in nursing homes, up to one third may have depression. Health care professionals often fail to recognize depression in older persons. For this reason, using screening tools such as the Geriatric Depression Scale (see below) on a regular basis is essential.

As is the case with many illnesses in older persons, depression often presents atypically. Thus older persons may present with complaints of dizziness or loud tinnitus. Severe weight loss is not an uncommon presentation of depression in older persons. Pseudodementia can occur commonly when the depressed older person not only has a decline in cognitive function but also a lack of desire to answer formal test questions.

Suicide occurs most commonly in older white males. Two out of three older persons who commit suicide come to the doctor in the month before they kill themselves. They generally have no specific complaints of depression and their cry for help is often missed. When a person says he/she is thinking of suicide, this must be taken seriously.

A number of medical disorders are associated with a high level of depression. These include pancreatic cancer, stroke, Parkinson’s disease, diabetes, and most hormonal disorders. One in three persons who have a stroke will develop depression (continued on page 18).


Geriatric Depression Scale

<table>
<thead>
<tr>
<th>Question</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are you basically satisfied with your life?</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Have you dropped many of your activities and interests?</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Do you feel that your life is empty?</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Do you often get bored?</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Are you in good spirits most of the time?</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Are you afraid that something bad is going to happen to you?</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Do you feel happy most of the time?</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Do you often feel helpless?</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Do you prefer to stay at home, rather than going out and doing new things?</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Do you feel you have more problems with memory than most?</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Do you think it is wonderful to be alive?</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Do you feel pretty worthless the way you are now?</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Do you feel full of energy?</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Do you feel that your situation is hopeless?</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Do you think that most people are better off than you are?</td>
<td>YES</td>
<td>NO</td>
</tr>
</tbody>
</table>
Monet did his best impressionistic art after he developed cataracts.

Portrayed here by Picasso, *Don Quixote* was written by Cervantes in his sixties.

Grandma Moses produced her last painting at age 103.

Michelangelo transforming the *Pieta* over life, one (on left) at 22, the other (on right) at 90.

Linus Pauling continued to make major contributions until the end of his life.
Sister Gertrude Morgan started painting at 56 and was showing her work in her 70s and 80s.

Verdi wrote Otello at age 74 and Falstaff at 80.

Sarah Louise Delaney is the oldest published author. Her second book was published when she was 105.

After losing his position as a hospital janitor, William Edmonson began sculpting in his mid-sixties.

Martha Graham continued her work as a choreographer into her nineties. “She created significant movement fraught with inner meaning, excitement, and surge transforming dance as an art form.”
Persons with depression have poorer outcomes during rehabilitation than do persons who are not depressed. Depression interferes with compliance and results in increased hospitalizations and deaths in persons with diabetes. Depressed persons have poorer outcomes if they have a myocardial infarction and they are more likely to have another infarct within the next year. As is the case with diabetics, persons with congestive heart failure have poor outcomes, most probably related to compliance issues.

The major neurotransmitter abnormalities resulting in depression are those of the norepinephric and serotonergic systems. In addition, there are alterations in acetylcholine, substance P, and corticotrophic releasing factor (CRF). CRF appears to be responsible for most of the vegetative signs of depression including weight loss, sleep disturbances, constipation, erectile dysfunction, and decreased libido. It is also responsible for increased cortisol levels in depression that are the cause of older persons with depression developing accelerated osteoporosis.

**Treatment**

There are three major treatment strategies for curing depression:

1. psychotherapy (talk therapy)
2. drugs, and
3. electroconvulsive therapy (shock therapy).

One-third or more of persons with depression will get spontaneously better (the placebo response). Drugs and psychotherapy will cure approximately another third. Electroconvulsive therapy will cure eight out of ten persons. The different forms of psychotherapy are listed in Table 1 below. Whatever other therapy is given to a depressed older person, it must be coupled with some form of behavior modification. This can be as simple as going regularly to a senior center or phoning a health professional once or twice a week.

Numerous drugs have been developed for the treatment of depression. The two major classes are tricyclics that alter norepinephrine function, and serotonin reuptake inhibitors (SSRIs) that may be more effective for severe depression. Tricyclics such as imipramine and amitryptiline are more sedating and have a large number of anticholinergic side effects. For this reason,
Mental Health and Aging Successfully

Professor George Valiant at Harvard University followed a group of Harvard graduates from age 50 to 80 years and a group of inner city persons from age 50 to 70 years. In these studies, he found that a number of mental health factors were strongly related not only to survival, but also distinguished those who became the happy-well as opposed to the sad-sick in old age. These factors were mature defenses (the ability to deal with adversity), stable marriage, some exercise, not smoking, no alcohol abuse, and not being overweight. Exercise, especially resistance exercise, decreases depression. Many subsequent studies have shown that depression (overwhelming sadness) leads to a variety of poor outcomes for classical medical illness.

To Age Successfully

- **Do Not Smoke**
- **Get Some Exercise**
- **Watch your Weight**
- **Manage Crises Well**
- **Enjoy a Stable Marriage**
- **Don’t Abuse Alcohol**
Students Learn from Elderly Patients

Medical students, many of whom are away from family for the first time in their lives, seldom have role models nearby to help them understand the normal effects of aging on the body. Normally, the majority of older persons seen by medical students during their training are either disabled or ill because historically, people have sought a physician’s advice only when they are ill. This gives students a skewed impression of seniors. To overcome this stereotype, first year medical students at Saint Louis University (SLU) who are currently students of Dr. Joseph H. Flaherty, were adopted by members of the local chapter of the University of the Third Age to help them learn more about normal aging. Third Agers, as these active retirees are called at SLU, discussed their past, present, and future lives and their current activities. They told the students what was important to them and what challenges they had faced in their lives.

Students learned that retirees lead active lives and that they have a keen interest in such things as politics, family, religion, education, and issues that affect their own health. In fact, many Third Agers peruse the Internet for information about medical conditions. Many students were surprised to learn that only 5% of elders are ill at any given time. That leaves 95% out there who remain active by volunteering for the community, helping family members, and improving their own lives.

The elders were pleased to have an opportunity to play a role in molding better physicians. One Third-Ager stated that she and her husband volunteer because “this was our opportunity to improve the attitudes of our future doctors. So many doctors treat our diseases but forget that we are also individuals. We want to remind doctors that these diseases are attached to real people.” The students were pleased to learn how to become better partners with their future patients.
our loss of thought processes may not greatly worry us, it will be devastating for our friends and relatives. Dementia is a disease that truly causes family members to mourn twice; first as they lose mental contact with the person they know and love, and secondly, when that person dies at a much later stage.

Approximately half of us will, if we live long enough, develop dementia. The drugs we have to treat dementia work poorly. There is a need for an increased focus and investment on the development of drugs that will cure or at least dramatically slow the progression of Alzheimer’s disease. Coupled with this, we need to enhance our ability to manage the behavioral disturbances associated with dementia and provide appropriate end-of-life care for the end stages of those with dementia.

While dementia is the largest illness to afflict older persons, depression is more devastating for the individual. Pervasive sadness totally destroys the ability of the person to function, and can often lead to individuals feeling compelled to end their lives. While the treatments for depression are much better than those for dementia, health care professionals have been shown to be poor at making the diagnosis. This is all the more disastrous when it is recognized that depressed persons have worse outcomes from numerous other diseases such as heart disease and diabetes. Sadness needs to be recognized as one of the great illnesses that afflicts human-kind. It needs to be aggressively screened for and treated.

Numerous other mental health disorders, including anxiety, late-life paranoia, and alcoholism also occur in older persons. No health care professional, from a surgeon to a nurse’s aide, can appropriately care for older persons without being thoroughly versed in the management of mental health disorders. Yet sadly, these professionals often lack appropriate training. Psychological disorders have been separated out from other illnesses. Somehow it is often implied that the psychologically disturbed person is to blame for his or her own problems. Physicians have little difficulty treating the physical ailments of smokers, alcoholics, drug abusers, obese persons, and those with sexually transmitted diseases. Yet when it comes to treating the psychological components of these ailments, physicians, like Pontius Pilate, wash their hands and either ignore them or send the person to be treated by a psychiatrist. Physicians ignore the healing powers of the shaman in each of us and also often fail to prescribe appropriate therapies.

Why do we stigmatize psychological disorders? It is because we all struggle to deal with our own inner demons, making it easier to ignore those whose malaligned minds remind us too much of who we could easily become. Our Puritanical society finds it easy to blame the victims for the psychological problems that beset them.

We must realize that depression is no different from having atherosclerotic disease and a suicide attempt is the equivalent of a myocardial infarction. When a mind malfunctions, this means that one or more neurotransmitters (small molecules that leap from one neuron to another) have now started to jump in the wrong rhythm or are failing to be recognized by the receptors which catch them. The brain has become the stage for a poorly choreographed dance where the music is no longer heard and the neurons fire chaotically. This is no different from many metabolic disor-

(continued from page 1)
Flaherty says. Between 15 and 20 percent of older patients are delirious when they are admitted and up to 30 percent become delirious while they’re in the hospital.

Delirium is caused by a host of medical problems that include illnesses, dehydration, and medications. It is treatable, reversible, and must be diagnosed so the patient’s other medical problems aren’t missed.

“The few keys to delirium are early recognition and early identification of the medical problems causing the delirium,” Dr. Flaherty says. “With proper care, it’s reversible.”

Typically, though, delirious patients don’t do well in hospitals. They stay in hospitals longer, fall and become injured more frequently, lose their ability to physically function, and are more likely to die than hospitalized elderly patients who are not delirious.

The Saint Louis University model for treatment eliminates the disparity between elderly patients who were delirious and those who were not.

“We studied delirious patients during the first 18 months after opening the Delirium Room. We kept the length of stay equal to non-delirious patients. We maintained their physical function. Our fall rate was near zero in that room because they’re constantly supervised. Our mortality rate was zero. None of the delirious patients died during that time,” he says.

Nurses in the Delirium Room rely on strategies to treat delirium that don’t involve physical restraints and that avoid medications. They try to reorient the confused patient and figure out why the patient is becoming agitated. In many cases, the reason for the patient’s agitation is easily solved: the patient’s IV is uncomfortable, he needs to use the restroom or her pain medication is wearing off.

“It’s intensive nursing,” Dr. Flaherty says. “Medications are used, but only after every non-pharmacological method has been tried.”

He suggests that hospitals treat patients who are at high risk of developing delirium to put the brakes on the mental disorder before it takes hold.

“There are patients we know who have a high risk for developing delirium. They include the very old, patients with an underlying dementia, patients who have problems with their hearing or sight and patients who are at risk for dehydration,” Dr. Flaherty says.

An 80-year old woman who is hospitalized with pneumonia, has Alzheimer’s disease and lives at home with her husband, would be an ideal candidate for the Delirium Room. There, she would be carefully observed to make sure she does not become delirious.

The Delirium Room is designed to prevent loss of physical function while patients are treated for an acute illness so they can return to their previous state of independence. Instead of treating the acute illness, then sending the patient for rehab, the ACE Unit emphasizes “pre-rehab” by starting therapy on day one, eating meals together, and focusing on other strategies that are important in treating older patients.

Having a dedicated place to care for elderly patients who become delirious calls attention to the syndrome, so doctors and nurses are less likely to miss diagnosing an underlying problem, Flaherty says.

“It’s an education tool itself. Everyone hears ‘Delirium Room’ and doctors and nurses start to learn what is a delirious patient. They weren’t taught this in medical school.”

A second Delirium Room has recently been opened at the DesPeres Hospital ACE Unit in St. Louis.
Advances in Research in Alzheimer’s Disease and Related Dementias Leads to New Programs and Services in St. Louis

By C. Christine Hood, LCSW

Advances in our ability to diagnosis the early stages of memory loss and Alzheimer’s disease (AD) is expanding the need for programs and services for the population affected by AD. There are several educational and support programs now offered by the St. Louis Alzheimer’s Association for the individual diagnosed with early stage memory impairment. Facing New Challenges is an education program featuring information that will help persons with memory loss to learn about their strengths and how to adapt to changes in memory and cognition. The class incorporates videotaped interviews of people who have early stage dementia who discuss their reactions and experiences in receiving a diagnosis and living with memory loss.

Project Esteem is a time-limited, early stage support group for both the diagnosed individual and a family member or friend. These two groups are offered concurrently so that the person with dementia and a companion can travel together. The program can help the person with dementia to process life changes in a group setting with others having a similar experience. Project Esteem (PE) groups focus on maintaining quality of life despite progressive memory loss and cognitive deficits. The PE group helps family members to understand the changes caused by the disease and provides support for making adjustments in their roles in the family structure, their relationship to the person with dementia, and anxieties about whom to tell about the diagnosis. Persons with dementia and their caregivers may also feel misunderstood by friends and family, which can lead to isolation. The PE support group can help caregivers process their reactions to the diagnosis, including denial, anxiety and fear, and feelings of loss. The group members can continue in Project Esteem II, until the person with dementia is no longer benefiting from participation in the support group. Social activities are scheduled from time to time to provide additional, less formal, socialization opportunities.

A new program underway at the Alzheimer’s Association is the ‘Let’s Talk’ program. Individuals with an early stage diagnosis of AD will be trained to provide telephone peer support to other persons with dementia. These phone contacts will help with feelings of isolation and will share coping strategies.

Call or visit the St. Louis Alzheimer’s Association Family Resource Center at 9374 Olive Street, St. Louis, MO 63132 (phone: 314-432-3422) to learn more about these and other materials and educational programs available to families.
Anxiety and Panic Attacks

(continued from page 14)

Associated physical symptoms may include:
- rapid pounding heartbeat
- difficulty breathing
- chest pain
- dizziness
- lightheadedness
- trembling
- gastrointestinal discomfort
- profuse sweating
- numb or tingling skin.

Physical symptoms decrease or disappear entirely between attacks.

How is it diagnosed and treated?

Because the physical symptoms of panic disorder can be overpowering, many people first consult a primary care practitioner rather than a mental health practitioner.

Feelings of fear and anxiety can be manifestations of several medical conditions and psychosocial concerns, as well as drug side effects. The medical conditions that classically produce panic attacks are hyperthyroidism and pheochromocytoma (a tumor of the adrenal glands that results in overproduction of adrenalin). It is important for your doctor to eliminate all of these possible causes before concluding that you have a panic disorder.

When discussing panic attacks with your doctor, be as specific as possible regarding the timing and nature of your emotional and physical symptoms, and mention any relatives who have experienced similar symptoms. Bring all of the medications you take, both prescription and over-the-counter, to your appointment. Alcohol, sleeping pills, caffeine, diet pills, cocaine, decongestants, and antihistamines can interact with medications and affect the nervous system in a variety of ways. Your doctor may also wish to screen you for depression; studies show that up to 50 percent of people with panic disorder also suffer from depression.

Behavioral treatment—exposing a person, in stages, to the cause of his or her anxiety—can be highly effective. During these exposures, you may be taught to cope with the symptoms of panic attacks by using relaxation techniques.

If your panic attacks are severe, your doctor may also recommend certain medications, such as benzodiazepines. Beta-blockers are sometimes used to treat panic disorders; they may be less effective than benzodiazepines for controlling symptoms but have the advantage of being less sedating. More recently, the class of antidepressant drugs known as selective serotonin reuptake inhibitors (SSRIs) — drugs such as sertraline — have been shown to be effective in treating panic disorders.

Will it get better?

Over the past 20 years, new treatments for panic disorder have greatly improved the outlook for people who suffer from it. Research shows that behavioral treatment, in particular, can have a lasting beneficial effect.

Cognitive Impairment

Like most people, you may have trouble remembering things from time to time. Many older adults worry that these memory lapses signal some sort of cognitive disorder, but it is normal for us to experience some reductions in memory, psychomotor skills, visual perception, and the ability to learn new facts, due to age-related changes in the brain. On the other hand, research shows that healthy older adults can maintain their overall intellectual performance into their 80s and beyond. Language

(continued on page 25)
### What to Do About Behavioral Symptoms in Patients with Dementia

- Caregiver support and education. The ability to deal with agitation is often more important than agitation itself.
- Do not startle the patient.
- Remove earwax. Where necessary use hearing amplifiers.
- Psychotherapy: Reality orientation, validation therapy, reminiscence therapy, music therapy, art therapy, pet therapy.
- Keep environment non-cluttered and restraint-free.
- A hearing amplifier provides negative feedback to patients with continuous screaming.
- In patients with paranoia, delusions, or hallucinations – use low doses of antipsychotics such as seroquel or risperidone.
- Agitation – consider drugs such as trazodone, reperidone, or seroquel and sodium valproate. Remember, they have only 10 to 20% improvement over placebo. Use lowest possible dose. Avoid expensive newer antipsychotics for which little data exists.
- New onset agitation or falls may be due to delirium.
- Special care units. While these have been heralded with enthusiasm by their adherents, controlled studies have demonstrated neither efficaciousness nor cost-effectiveness.

### Anxiety and Panic Attacks

(continued from page 24)

ability, sensory memory, immediate memory, and problem-solving ability appear to change little with age.

Sometimes, physiological or psychological conditions can lead to cognitive impairment. Possibilities include stroke, Alzheimer’s disease, Parkinson’s disease, Creutzfeldt-Jakob disease, Huntington’s disease, thyroid conditions and other endocrinological disturbances, certain types of tumors, infections, cardiovascular problems, depression, schizophrenia, and severe anxiety.

These disorders, and many others, may produce symptoms of cognitive impairment such as those seen in dementia, delirium, and/or depression. It can be difficult to distinguish among these three conditions, because the distinctions are not always clear. A complete health history and physical examination can help your doctor determine whether cognitive impairment results from a reversible condition.

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Check out Aging Successfully on the Internet! [http://medschool.slu/agensuccessfully](http://medschool.slu/agensuccessfully)
drugs might decrease the risk of Alzheimer’s disease. Two commonly used agents of this class—naproxen and rofecoxib—failed to improve memory in patients with Alzheimer’s disease.

Testosterone levels decline over the lifetime in males. A number of studies, including ours at SLU, have found that this decline is associated with a decline in cognitive function. Recently, studies in humans have shown improved visuospatial memory with testosterone replacement and that low testosterone levels are associated with a decline in cognitive function. Recently, studies in humans have shown improved visuospatial memory with testosterone replacement and that low testosterone levels are associated with Alzheimer’s disease. In the SAMP8 mouse model of beta-amyloid overproduction, we have shown that testosterone reduces the production of amyloid precursor protein.

Gingko biloba is an herbal medicine that appears to have some memory enhancing effects. Its efficacy is in need of more rigorous study in humans.

Genes and Alzheimer’s Disease

Persons with Down’s syndrome have an extra chromosome 21 and develop premature Alzheimer’s disease. Chromosome 21 is responsible for directing the production of beta-amyloid. Mutations in the production of beta-amyloid also lead to Alzheimer’s disease. Mutations in the presenilin genes on chromosomes 1 and 14 are associated with early-onset Alzheimer’s disease. Mutations in the presenilin-1 gene alter the growth of neurons during development. Scientists at SLU have found that the SAMP8 mouse has abnormal arborization (growth) of neuronal dendrites early in life.

Persons who have the Apolipoprotein E4, as opposed to E2 or E3 variants of this gene, have an increased chance of developing Alzheimer’s disease. This gene is located on chromosome 19. There is a genetic linkage between the long arm of chromosome 10 and Alzheimer’s disease. Persons with high levels of beta-amyloid have an abnormality in the long arm of chromosome 10. This area is associated with insulin degrading enzyme which is also responsible for the degradation of beta-amyloid.

Epidemiology

Epidemiological studies have suggested a number of potentially reversible factors that may accelerate the onset of Alzheimer’s:

- Low education level
- Lower diversity and intensity of recreational activities
- Lower physical activity
- High levels of homocysteine which can be due to inadequate intake of vitamin B₁₂, folate, and B₆, and
- Hypothyroidism.

(continued on page 27)
Insights into Alzheimer’s
(continued from page 26)

Mild Cognitive Impairment
A number of older persons are now recognized as having worse memory problems than others at their age. However, they do not show severe functional decline or behavioral problems classically seen in persons with Alzheimer’s disease. About half of these persons will go on to develop Alzheimer’s disease over the next 5 years. Also, if these subjects have a major illness, such as myocardial infarction or hip fracture, they often have rapid deterioration in memory. Most of these patients have normal mini-mental status examination scores. To help with the diagnosis of this condition, SLU researchers developed the Saint Louis University Mental Status Examination (SLUMS) (see page 11). This has been validated and the results of the validation will be presented at the Gerontological Society of America Meeting in San Diego.

Using magnetic resonance imaging (MRI), it has been shown that persons with mild cognitive impairment who deteriorate rapidly have smaller hippocampal volumes than those who remain stable. Similar findings have been reported in another brain area, the entorhinal cortex. Positron Emission Tomography (PET) scanning has found that persons who go from mild cognitive impairment to Alzheimer’s disease have reduced glucose metabolism in the entorhinal cortex, hippocampus, and temporal neocortex.

Conclusion
Over the last decade, we have markedly enhanced our knowledge of Alzheimer’s disease. We look forward to seeing further breakthroughs, leading to an enhanced quality of life for many of us who are at risk for developing Alzheimer’s disease.

These two recent review articles, written by faculty at Saint Louis University, may be of interest to our readers.


Tips for Caring for a Person with Dementia

<table>
<thead>
<tr>
<th>1. Go to the local Alzheimer’s and Related Diseases Association for support.</th>
<th>4. Stop the person driving or refer to the Department of Motor Vehicles.</th>
<th>8. Use reminder labels in large print.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Provide a Safe Return bracelet in case the person wanders off and gets lost.</td>
<td>5. Protect the individual’s finances.</td>
<td>9. Use lighting to reduce confusion and restlessness at night.</td>
</tr>
<tr>
<td>3. Remove guns from the house.</td>
<td>6. Simplify the environment.</td>
<td>10. Allow rest between stimulating events.</td>
</tr>
<tr>
<td>7. Simplify tasks and routines.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Caregiver burnout is common. Make use of respite opportunities.
such as ECT. The patients themselves must be thoroughly informed on what is going to occur in detail, but almost more important is informing all of the patient’s family and friends who need to know not only what is taking place, but also what to look for after the treatments.

Electromagnetic Stimulus Therapy is now in its infancy but certainly will play an important role in the future. Limiting factors at the present time appear to be the strength of the magnet that is required and lack of adequate experience to date. Magnetic Seizure Therapy (MST) is a procedure where the transcranial magnetic stimulation is actually to a level where it induces seizures. Because magnetic fields pass through the tissue unimpeded, there is greater control over the actual site of stimulation. However, not enough work has been done in this area yet and the antidepressant efficacy of MST is not well known.

For vagus nerve stimulation, the left vagus nerve, at the cervical level, has two helicoelectrodes placed around the nerve. This is a surgical procedure. The helicoelectrodes are linked to a pulse generator and to a programming wand through computer program software. This system allows electrical pulses to be delivered to the vagus. It was first developed to stop longstanding refractive partial onset seizures. Recent study is in the use of medically resistant depression. There is some evidence of help, but not enough studies have been done to date.

Deep Brain Stimulation requires surgical intervention with leads implanted into the brain stereotactically. Leads are then connected to a pulse generator. This procedure is investigational and research is ongoing.

In summary, ECT is one of the tools in a psychiatrist’s armamentarium that needs to be taken very seriously. At times, it is life saving and can often do what cannot be done with medication or psychotherapy. It can be very cost-effective and considerably shortens patient suffering.

this issue of Aging Successfully is dedicated. It is also hoped that there will be increased awareness that these disorders will be recognized as being no different than the common cold or congestive heart failure. Only when this happens will they be destigmatized.

We are extremely grateful to AstraZeneca who provided an unrestricted educational grant to allow the production of this issue.

John E. Morley
A highly successful conference on the senescence accelerated mice (SAM) was held in Sapporo, Japan, under the leadership of Professor Tasuyuki Nomura. The SAMP8 model has become a leading spontaneous model of Alzheimer-like disease. For over 15 years, the SAMP8 mouse has been studied at Saint Louis University using behavioral, anatomical, immunocytochemical, biochemical, and physiological techniques. Dr. John Morley was invited to give the kick-off lecture where he described the exciting findings from the St. Louis group showing that blocking beta-amyloid production with either antibodies or antisense not only reverses memory deficits but also reduces free radical production in the brain. A number of well-organized presentations by Japanese scientists confirmed the importance of the SAMP8 as a mouse model of Alzheimer’s disease.

Now Accepting Applications for the Saint Louis University Geriatric Leadership Academy

The Division of Geriatrics at Saint Louis University will host the inaugural class of the first United States-based Geriatric Academy where practicing physicians can receive enhanced postgraduate education on geriatrics on January 5-9, 2004.

Greater detail of the curriculum of the SLU Geriatrics Academy was published in the Spring, 2003 issue of Aging Successfully. Newly appointed geriatricians (assistant and associate professors) will be taught (1) Leadership and Management, (2) General Geriatrics, (3) Education Methodology, (4) Geriatric Systems and Continuous Quality Improvement (CQI), (5) Patient-Oriented Research, and (6) Health Systems and Community Networking that will help them shape the future of Geriatrics in the United States.

To apply for the Geriatrics Academy, please send a letter of interest and your curriculum vita to:

Saint Louis University Geriatrics Academy
Division of Geriatric Medicine
Attn: Nina Tumosa, PhD
1402 S Grand Blvd, Room M238
St. Louis MO 63104

Application deadline is December 3rd, 2003.
they are not used in older persons, and desipramine and nortryptiline are the agents of choice. A tetracyclic, trazodone, is useful for the management of agitated, depressed persons and those with insomnia.

There are a large number of SSRIs. While each has a slightly different profile, they are more similar than different. These agents are considered by many as being safer in older persons than the tricyclics. However, in many cases, the SSRIs have been compared to the “bad” tricyclics, amitryptiline and imipramine. SSRIs, in fact, have a large number of side effects, which, in many cases, are different from tricyclics as illustrated in the figure.

St. John’s Wort is an herbal drug that has shown efficacy against mild (but not major) depression. It appears to have fewer side effects than tricyclics or SSRIs, but it has not been thoroughly studied in this regard. A variety of other drugs also exist for the treatment of depression. In most cases, the use of these drugs should be reserved for use by the specialist when managing treatment-resistant depression.

Electroconvulsive therapy (ECT) is an excellent therapy for older persons with most of its side effects occurring in the 24 hours around the treatment period. It is very well tolerated. While many psychiatrists use unipolar current, bipolar is more effective. Persons who are suicidal, have severe weight loss, or for whom drug therapy has failed are ideal candidates for ECT.

Recently there has been an increased awareness of the potential of electromagnetic force to treat depression. This is an exciting area, holding much promise for the future.

**Conclusion**
Depression is a treatable but devastating illness. Older persons who are sad need to be identified as having depression and then appropriately treated.
Upcoming CME Programs

23rd Annual GRECC Symposium
October 24, 2003 in Kansas City, Missouri

15th Annual Saint Louis University School of Medicine Symposium for Medical Directors
December 13, 2003

Saint Louis University Geriatric Academy
January 5-9, 2004

15th Annual Saint Louis University Summer Geriatric Institute
June 1-3, 2004

All the conferences will be held at Saint Louis University, except as noted. For more information about any of these conferences, please call 314-894-6510.

Been Here? Done This?
Offering regular updates on geriatrics, Cyberounds, an internet-based educational program for physicians and other health providers, is edited by Dr. John E. Morley. The internet address for Cyberounds is:

www.cyberounds.com

A cybersite for seniors has been developed in collaboration with Saint Louis University and the Gateway Geriatric Education Center. Besides articles written by geriatric experts, this site provides health updates and an interactive question and answer section. The address for this site is www.thedoctorwillseeyounow. See you in cyberspace!

Senior SAFETY SOLITAIRE - 2nd Edition

The MOGGE C Injury Prevention Project presents this Second Edition of the multi-cultural game, Senior Safety Solitaire, that promotes both home and personal safety. This game comes complete with pictures of safety problems and solution cards and is designed to provide safety information for older adults, volunteers, para-professionals, and professionals, and can be played by a single player or by a group. Price: $65.

To order, please send check or money order to:
SLU-HSC, Division of Geriatric Medicine, 1402 S. Grand, Room M238
St. Louis, MO 63104. For more information, please call 314-268-5644.
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