National Alliance on Mental Illness

BrainStorm

Newsletter of NAMI Tri -Valley | www.namitrivalley.org | Volume 2 Number 2, March, 2006

Our Mission

"NAMI Tri-Valley in collaboration with other community agencies and organizations provides information and referrals to resources, education programs and advocacy support to consumers and families."

Insulin a Suspect in Alzheimer's, Schizophrenia

January 31, 2006, *The New York News Service*

A small but growing chorus of scientists is becoming convinced that insulin is just as important to the brain as it is to the body.

The body needs insulin to convert sugar in the bloodstream to energy.

People whose bodies either don't make enough insulin or don't process it correctly develop Type 1 or Type 2 diabetes, which can lead to poor circulation, kidney failure, blindness, and death.

The role of insulin in the brain is less clear, but this much is certain: When brain cells are deprived of insulin, they die. Now researchers are discovering that a breakdown in insulin-processing in the brain plays a role in mental illnesses. Perhaps even a driving role.

Dr. Suzanne de la Monte, a neuropathologist at Rhode Island Hospital in Providence, believes that Alzheimer's disease could be called "Type 3 diabetes." And C. Anthony Altar, president of Maryland-based Psychiatric Genomics, refers to schizophrenia as "diabetes of the brain."

Though researchers are still answering basic questions about insulin's role in mental illness, the potential impact of their work is dramatic.

Until now, research on the ravages of Alzheimer's has centered mainly on the amyloid plaques that build up in the brain as the disease progresses, while scientists have focused on a breakdown in brain cell communication to explain schizophrenia, in which victims often become delusional and erratic as brain tissue dies.

If the insulin researchers are right, those problems could be secondary to a more fundamental breakdown in the way brain cells process insulin to generate energy and protect themselves against death.

Whether an insulin shortage "causes the disease, contributes to the disease, or it's the brain's response to injury we don't know yet," said Dr. Jesse Roth, geriatrician-in-chief of the North Shore Long Island Jewish Health System, who has studied insulin's role in the brain since the 1980s.

Doctors who treat Type 2 diabetes are already concerned about whether their patients are at greater risk of developing diseases of the brain later in life. Studies have shown that diabetic patients are at greater risk of Alzheimer's, but researchers have assumed that diabetes is just one of several risk factors. Likewise, people with schizophrenia are at least twice as likely to develop Type 2 diabetes, but until now, scientists have attributed that to the unhealthy lifestyle of schizophrenics as well as the medications they take.

"We need to do the basic science, because we need to be sure," said Dr. C. Ronald Kahn, president of the Joslin Diabetes Center, who is concerned that the current Type 2 diabetes epidemic could foreshadow an explosion of mental illness.

Kahn's research also suggests that insulin problems in the brain, in turn, may make people more vulnerable to Type 2 diabetes. Lab mice genetically modified to block insulin processing in the brain became obese and showed signs of diabetic insulin resistance. "If this is correct, the public health implications are huge," he said.

Ironically, some doctors had latched onto insulin as a possible treatment for mental illness in the mid-20th century, when "insulin shock therapy" became popular as a last-ditch treatment for schizophrenia. The treatment pumped patients so full of the hormone that they would go into a diabetic coma.

While some schizophrenics, such as John F. Nash Jr., the mathematician portrayed in the

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Depression Bipolar Support Alliance Presents at the NAMI Tri-Valley General Meeting on March 6th

The Depression and Bipolar Support Alliance (DBSA) is the nation's leading patient-directed organization focusing on the most prevalent mental illnesses – depression and bipolar disorder. The organization fosters an understanding about the impact and management of these life-threatening illnesses by providing up-to-date, scientifically-based tools and information written in language the general public can understand.
DBSA supports research to promote more timely diagnosis, develop more effective and tolerable treatments and discover a cure. The organization works to ensure that people living with mood disorders are treated equitably.

"DBSA Tri-Valley" was established in March of 2004 by Krista Radojevich. The initial group of only 5 members on a given night has grown to as many as 25 people each Wednesday evening with over 150 participating members. The peer run support group meets weekly at St. Clare's Episcopal Church in Pleasanton and is open to those with mood disorders and those who support someone with a mood disorder. Additionally, the great demand for peer support extended into the Castro Valley area, where Jennifer Garrison established a Friday evening group at Eden Hospital.

The peer run groups provide hope and help for those with mood disorders in the Tri-Valley area. Educational brochures and lending library are just a couple of the resources provided by the groups. **To learn more about the organization and DBSA Tri-Valley and DBSA Castro Valley please attend our presentation at the NAMI Tri-Valley general meeting Monday March 6th and visit us online at www.dbsatrivalley.org or dbsacastrovalley.org.**

NAMI Walk Update . . .

NAMI Tri-Valley has two walking teams established, Tri-Valley Bipolar Bears and NAMI Tri-Valley Newbees. A third team will be forming soon. Tri-Valley Bipolar Bears are in the fundraising lead ahead of all other San Francisco Bay Area NAMI affiliates. As to date, Tri-Valley Bipolar Bears have raised over $1200.

INVITATION TO LUNCH

Please join us for the

NAMI Walk Kick-Off Luncheon

Wednesday, March 29, 2006, 11:30am – 1:30pm

South San Francisco Conference Center
255 South Airport Blvd., South San Francisco
(See www.ssfconf.com for directions)

This Kick-Off Luncheon is free for anyone interested in learning more about the Walk and how to participate as a Sponsor, Walker, Walk Team Captain or Volunteer

RSVP requested by March 22, 2006
Tri-Valley: trivalleybipolar@hotmail.com or 925-560-0842
Seating cannot be guaranteed without advance confirmation of attendance

Donations may be made to NAMI Walk San Francisco Bay Area
P.O. Box 5125 • Marin, CA 94948 • Tax Exempt I.D. #68-0005567
www.namiwalkssfbayarea.org • Phone: 916-708-0525 • www.nami.org/namiwalks

CALENDAR

March 6, 2006
7:00 p.m. to 9:00 p.m.
NAMI Tri-Valley General Meeting
Presentation by the Depression and Bipolar Support Alliance (DBSA)
1188 So. Livermore Ave., Livermore
Contact: Marsha McInnis
Phone: (925) 980-5331
e-mail: marsha _m@pacbell.net

March 13, 2006
7:15 p.m. to 9:00 p.m.
NAMI Tri-Valley
Family Support Group
Livermore Public Library,
1188 So. Livermore Ave., Livermore
Contact: Marsha McInnis
Phone: (925) 980-5331
e-mail: marsha _m@pacbell.net

March 20, 2006
7:30p.m. to 8:30p.m.
"In Our Own Voice"
St. Clare's Episcopal Church
3350 Hopyard Rd., Pleasanton
Contact: Krista Radojevich
Phone: (925) 560-0842
e-mail: trivalleybipolar@hotmail.com

March 27, 2006
7:00 p.m. to 8:30 p.m.
NAMI Tri-Valley
Family Support Group
St. Clare's Episcopal Church
3350 Hopyard Rd., Pleasanton
Contact: Donna & Russ White
Phone: (925) 455-6901
e-mail: russdonnawhite@comcast.net

Mark Your Calendar . . .

April 3, 2006
7:00 p.m. to 9:00 p.m.
NAMI Tri-Valley General Meeting
Guest Speaker:
Douglas Del Paggio, PharmD, MPA
Director of Pharmacy Services,
Alameda County Behavioral Health Care Service (BHCS)
1188 So. Livermore Ave., Livermore
Contact: Marsha McInnis
Phone: (925) 980-5331
e-mail: marsha _m@pacbell.net

Saturday, June 3, 2006
NAMI Walk SF Bay Area
Golden Gate Park, San Francisco
Contact: Krista Radojevich
Phone: (925) 560-0842
e-mail: trivalleybipolar@hotmail.com

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Insulin suspect in Alzheimers and Schizophrenia

movie "A Beautiful Mind," showed improvement from the shock treatment, up to 10 percent of the patients died, and by the early 1960s, insulin therapy had gone onto the scrap heap of medical history.

When Roth began his research for the National Institute of Health 25 years ago, most neurologists agreed that insulin played a negligible role in brain chemistry. Insulin levels in the brain were low compared with levels in the rest of the body, and the brain seemed to have limited need for the hormone.

But Roth's team at NIH demonstrated that brain cells possess insulin receptors to grab the hormone as it floated by and took pictures of insulin binding to receptors in rats' brains. They argued that insulin plays a complex role in brain cells, from cell repair to self-defense. Far from being a bit player in the brain, Roth suggested that insulin "has a very rich job description."

When de la Monte started her insulin research in the early 1990s, the neuropathologist was amazed that few scientists had built on Roth's work.

She used a chemical treatment to drastically reduce insulin levels in the brains of rats and found that they developed Alzheimer's symptoms, including large-scale cell death. Immediately, she said, "I knew we had to stop everything we're doing and focus on Alzheimer's."

In recent years, De la Monte's lab has shown that the brain actually produces insulin itself rather than relying on insulin from the pancreas that circulates in the rest of the body. Last year, in a study of brain samples from 45 Alzheimer's patients, de la Monte found that the number of insulin receptors in the frontal cortex, the center of intellect, drops by 80 percent in advanced cases of the disease, meaning that the cells don't get the insulin they need to survive.

"Insulin disappears early and dramatically in Alzheimer's disease," said de la Monte, who also teaches pathology at Brown University Medical School.

"Many of the unexplained features of Alzheimer's, such as cell death and tangles in the brain, appear to be linked to abnormalities in insulin signaling."

Of course, other Alzheimer's researchers say it's too soon to say that insulin defects are the most important cause of the disease.

Large-scale studies have also shown that high blood pressure, obesity, and cardiovascular disease put people at higher risk of Alzheimer's.

"It is a real stretch to call Alzheimer's disease Type 3 diabetes," said Dr. Hugh C. Hendrie, co-director of the Center for Alzheimer's Disease and Related Neuropsychiatric Disorders at Indiana University. He believes the disease probably has more than one cause.

The connection between insulin defects and schizophrenia is even less well established. About three years ago, researchers at Psychiatric Genomics detected a strange pattern in the brains of deceased schizophrenia patients. In the hippocampus, the brain region responsible for memory and learning, they found low levels of activity in genes that govern the breakdown of sugars and energy production, suggesting an insulin-processing problem.

Last year the researchers discovered that the same 14 genes that are missing in the brains of schizophrenics are also missing in muscle tissue of diabetics. What's more, they were able to boost production of the deficient genes in the lab by adding insulin or insulin-like growth factor, a protein that is similar to insulin.

"We were quite stunned," said Altar of Psychiatric Genomics, which is now focusing on potential treatments for schizophrenia that would increase the activity levels of the genes. "There's a whole series of steps that may prevent the schizophrenic brain from responding to insulin."

Last year the researchers discovered that the same 14 genes that are missing in the brains of schizophrenics are also missing in muscle tissue of diabetics.

Of course, Altar's insulin theory remains new and largely untested, so even those who hope he is right, such as the Stanley Medical Research Institute, which is funding him, are cautious. But Roth of the Jewish Medical Center said, "Whether he's right in detail I don't know, but he's right in principle."

So far, very few insulin-based treatments for diseases of the brain have reached human trials. However, physicians from the Veterans Affairs Puget Sound Health Care System and the University of Washington are about to study whether insulin delivered in a nasal spray can improve the memory of people with early-stage Alzheimer's disease.

But De la Monte is convinced that one day, insulin therapies could help the nation's 4 million Alzheimer's patients, and maybe even Parkinson's disease patients, too. "It opens the door to many other approaches to a disease that we don't really have any therapies for," she said.

FYI:

for Consumers:

Depression and Bipolar Support Alliance
DBSA Tri-Valley
Meets each Wednesday 7:15-8:45
St. Clare's Episcopal Church
3350 Hopyard Rd., Pleasanton
Contact: Krista Radojevich, 925.560.0842
trivalleybipolar@hotmail.com

Depression and Bipolar Support Alliance
DBSA Castro Valley
Meets each Friday 7:15-8:45
Eden Hospital Conference Center
Conference Room A, Ground Floor
20103 Lake Chabot Road, Castro Valley
Contact: Jennifer Garrison 925.413.3784
jenn@dbsacastrovalley.org

for Families:

NAMI Tri-Valley
Support Group
Meets 2nd Monday of the month 7:15-9:00
Livermore Library
1188 S.Livermore Ave.
Contact: Marsha McInnis, 925.980.5331
marsha_m@pacbell.net

NAMI Family Support Group
Meets 4th Monday of the month
St. Clare's Episcopal Church
3350 Hopyard Rd., Pleasanton
Contact: Russ or Donna White 925.455.6901
russdonnawhite@comcast.net

May Is Mental Health Month

May is Mental Health month and many activities will be held throughout the county. Locally, the Valley Council on Mental Health will pair up with NAMI Tri-Valley to present a display in the main hall at the Livermore Public Library. The theme this year is Wellness and Recovery. There will be information on where to seek help and support as well as how to become involved in the community.

NAMI is a non-profit, grassroots, self-help, support and advocacy organization of consumers, families, and friends of people with severe mental illnesses, such as schizophrenia, schizoaffective disorder, bipolar disorder, major depressive disorder, obsessive-compulsive disorder, panic and other severe anxiety disorders, autism and pervasive developmental disorders, attention deficit/hyperactivity disorder, and other severe and persistent mental illnesses that affect the brain.

Brainstorm is published by NAMI Tri-Valley, an affiliate of NAMI National and NAMI California

Membership Application
NAMI Tri-Valley

Name_____

Address _____

City _____ State_____ Zip_____

Phone_____ E-mail _____

☐ General	$35
☐ Consumer	$15
☐ Professional	$45
☐ Century	$100

$_____ In Memory Of:_____

$_____ In Honor Of:_____

$20.00 of your membership dues is tax deductible. Membership entitles you to receive NAMI Tri-Valley Newsletter "Brainstorm", NAMI California publication *"The Connection"* and NAMI National *"The Advocate"*.

Send this application form with your check payable to:
NAMI Tri-Valley
1989-A Santa Rita Road PMB 129
Pleasanton, CA 94566